Mathematica 11.3 Integration Test Results

Test results for the 393 problems in "4.2.4.1 (a+b cos)^m (A+B cos+C cos^2).m"

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

$$\int (A + C \operatorname{Cos}[c + d x]^2) \operatorname{Sec}[c + d x] \, dx$$

Optimal (type 3, 24 leaves, 2 steps):

$$\frac{A \operatorname{ArcTanh}[\operatorname{Sin}[c + d x]]}{d} + \frac{C \operatorname{Sin}[c + d x]}{d}$$

Result (type 3, 92 leaves):

$$-\frac{A \operatorname{Log}\left[\operatorname{Cos}\left[\frac{c}{2} + \frac{d x}{2}\right] - \operatorname{Sin}\left[\frac{c}{2} + \frac{d x}{2}\right]\right]}{d} + \frac{A \operatorname{Log}\left[\operatorname{Cos}\left[\frac{c}{2} + \frac{d x}{2}\right] + \operatorname{Sin}\left[\frac{c}{2} + \frac{d x}{2}\right]\right]}{d} + \frac{C \operatorname{Cos}[d x] \operatorname{Sin}[c]}{d} + \frac{C \operatorname{Cos}[c] \operatorname{Sin}[d x]}{d}$$

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

$$\int (A + C \operatorname{Cos}[c + d x]^2) \operatorname{Sec}[c + d x]^7 \, dx$$

Optimal (type 3, 98 leaves, 4 steps):

$$\frac{(5 A + 6 C) \operatorname{ArcTanh}[\operatorname{Sin}[c + d x]]}{16 d} + \frac{(5 A + 6 C) \operatorname{Sec}[c + d x] \operatorname{Tan}[c + d x]}{16 d} + \frac{(5 A + 6 C) \operatorname{Sec}[c + d x]^3 \operatorname{Tan}[c + d x]}{24 d} + \frac{A \operatorname{Sec}[c + d x]^5 \operatorname{Tan}[c + d x]}{6 d}$$

Result (type 3, 445 leaves):

$$-\frac{5\,A\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{16\,d}-\frac{3\,C\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+$$
$$\frac{5\,A\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{16\,d}+\frac{3\,C\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{8\,d}+$$
$$\frac{A}{48\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^6}+\frac{A}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+$$
$$\frac{C}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}+\frac{5\,A}{32\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}+$$
$$\frac{3\,C}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}-\frac{A}{48\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^6}-$$
$$\frac{A}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}-\frac{C}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^4}-$$
$$\frac{5\,A}{32\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}-\frac{3\,C}{16\,d\,\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}$$

Problem 34: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (b\,\text{Cos}[c+d\,x])^m\,\left(A+C\,\text{Cos}[c+d\,x]^2\right)\,dx$$

Optimal (type 5, 117 leaves, 2 steps):

$$\frac{C\,(b\,\text{Cos}[c+d\,x])^{1+m}\,\text{Sin}[c+d\,x]}{b\,d\,(2+m)}-$$
$$\left((C\,(1+m)+A\,(2+m))\,(b\,\text{Cos}[c+d\,x])^{1+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},\text{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(b\,d\,(1+m)\,(2+m)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 294 leaves):

$$\frac{1}{4\,d}(b\,\text{Cos}[c+d\,x])^m$$
$$\left(\frac{1}{2+m}\,i\,2^{-m}\,C\,e^{-2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{-m}\,\left(e^{-i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)\right)^m\,\text{Cos}[c+d\,x]^{-m}\right.$$
$$\text{Hypergeometric2F1}\left[-1-\frac{m}{2},-m,-\frac{m}{2},-e^{2\,i\,(c+d\,x)}\right]+\frac{1}{-2+m}\,i\,2^{-m}\,C\,e^{2\,i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{-m}$$
$$\left(e^{-i\,(c+d\,x)}\,\left(1+e^{2\,i\,(c+d\,x)}\right)\right)^m\,\text{Cos}[c+d\,x]^{-m}\,\text{Hypergeometric2F1}\left[1-\frac{m}{2},-m,2-\frac{m}{2},-e^{2\,i\,(c+d\,x)}\right]-$$
$$\left.\frac{1}{1+m}2\,(2\,A+C)\,\text{Cot}[c+d\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},\text{Cos}[c+d\,x]^2\right]\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Problem 66: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\left(A+C\,\text{Cos}[c+d\,x]^2\right)\,\text{Sec}[c+d\,x]}{\sqrt{b\,\text{Cos}[c+d\,x]}}\,dx$$

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

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

Result (type 5, 200 leaves):

$$-\frac{1}{3\,d\,\sqrt{b\,\text{Cos}[c+d\,x]}}\text{Csc}[c]\,\Big(-6\,A\,\text{Cos}[d\,x]+3\,C\,\text{Cos}[d\,x]+3\,C\,\text{Cos}[2\,c+d\,x]+ 3\,(A-C)\,\text{Hypergeometric2F1}\left[-\frac{1}{4},\,\frac{1}{2},\,\frac{3}{4},\,-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right] (\text{Cos}[d\,x]-i\,\text{Sin}[d\,x])\,\sqrt{1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]}+ (A-C)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{3}{4},\,\frac{7}{4},\,-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right] (\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,\sqrt{1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]}\Big)$$

Problem 67: Result unnecessarily involves higher level functions.

$$\int \frac{\left(A+C\,\text{Cos}[c+d\,x]^2\right)\,\text{Sec}[c+d\,x]^2}{\sqrt{b\,\text{Cos}[c+d\,x]}}\,dx$$

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

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

Result (type 5, 141 leaves):

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

Problem 68: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 112 leaves, 5 steps):

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

Result (type 5, 522 leaves):

$$b \left(-\frac{1}{10 (b \operatorname{Cos}[c + d x])^{3/2} (2 A + C + C \operatorname{Cos}[2 c + 2 d x])} i (3 A + 5 C) \operatorname{Cos}[c + d x]^{7/2} \operatorname{Csc}\left[\frac{c}{2}\right] \operatorname{Sec}\left[\frac{c}{2}\right] \right.$$
$$\left(C + A \operatorname{Sec}[c + d x]^2\right) \left(\left(2 e^{2 i d x} \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{3}{4}, \frac{7}{4}, -e^{2 i d x} (\operatorname{Cos}[c] + i \operatorname{Sin}[c])^2\right]\right.\right.$$
$$\sqrt{e^{-i d x} \left(2 \left(1 + e^{2 i d x}\right) \operatorname{Cos}[c] + 2 i \left(-1 + e^{2 i d x}\right) \operatorname{Sin}[c]\right)}$$
$$\left.\sqrt{1 + e^{2 i d x} \operatorname{Cos}[2 c] + i e^{2 i d x} \operatorname{Sin}[2 c]}\right) \Big/$$
$$\left(3 i d \left(1 + e^{2 i d x}\right) \operatorname{Cos}[c] - 3 d \left(-1 + e^{2 i d x}\right) \operatorname{Sin}[c]\right) -$$
$$\left(2 \operatorname{Hypergeometric2F1}\left[-\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, -e^{2 i d x} (\operatorname{Cos}[c] + i \operatorname{Sin}[c])^2\right]\right.$$
$$\sqrt{e^{-i d x} \left(2 \left(1 + e^{2 i d x}\right) \operatorname{Cos}[c] + 2 i \left(-1 + e^{2 i d x}\right) \operatorname{Sin}[c]\right)}$$
$$\left.\sqrt{1 + e^{2 i d x} \operatorname{Cos}[2 c] + i e^{2 i d x} \operatorname{Sin}[2 c]}\right) \Big/$$
$$\left.\left(-i d \left(1 + e^{2 i d x}\right) \operatorname{Cos}[c] + d \left(-1 + e^{2 i d x}\right) \operatorname{Sin}[c]\right)\right) +$$
$$\left(\operatorname{Cos}[c + d x]^4 \left(C + A \operatorname{Sec}[c + d x]^2\right) \left(\frac{4 (3 A + 5 C) \operatorname{Csc}[c] \operatorname{Sec}[c]}{5 d} + \right.\right.$$
$$\frac{4 A \operatorname{Sec}[c] \operatorname{Sec}[c + d x]^3 \operatorname{Sin}[d x]}{5 d} +$$
$$\left.\left.\frac{4 \operatorname{Sec}[c] \operatorname{Sec}[c + d x] (3 A \operatorname{Sin}[d x] + 5 C \operatorname{Sin}[d x])}{5 d} + \frac{4 A \operatorname{Sec}[c + d x]^2 \operatorname{Tan}[c]}{5 d}\right)\right) \Big/$$
$$\left.\left((b \operatorname{Cos}[c + d x])^{3/2} (2 A + C + C \operatorname{Cos}[2 c + 2 d x])\right)\right)$$

Problem 76: Result unnecessarily involves higher level functions.

$$\int \frac{\left(A + C \operatorname{Cos}[c + d x]^2\right) \operatorname{Sec}[c + d x]}{(b \operatorname{Cos}[c + d x])^{3/2}} \, dx$$

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

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

Result (type 5, 140 leaves):

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

Problem 161: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{3\,A\,\text{Sin}[c+d\,x]}{d\,(b\,\text{Cos}[c+d\,x])^{1/3}}+\left(3\,(2\,A-C)\,(b\,\text{Cos}[c+d\,x])^{5/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(5\,b^2\,d\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 283 leaves):

$$-\left(\left(3\,e^{-i\,d\,x}\,\text{Cos}[c+d\,x]^{1/3}\,\text{Csc}[c]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,\left(-8\,A\,\text{Cos}[d\,x]+2\,C\,\text{Cos}[d\,x]+2\,C\,\text{Cos}[2\,c+d\,x]+2\,(2\,A-C)\,\text{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{3},\frac{2}{3},-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right]\,(\text{Cos}[d\,x]-i\,\text{Sin}[d\,x])\,(1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)])^{1/3}+(2\,A-C)\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)])^{1/3}\right)\right)\Big/\left(4\times 2^{2/3}\,d\,(b\,\text{Cos}[c+d\,x])^{1/3}\,\left(e^{-i\,d\,x}\,\left(\left(1+e^{2\,i\,d\,x}\right)\,\text{Cos}[c]+i\,\left(-1+e^{2\,i\,d\,x}\right)\,\text{Sin}[c]\right)\right)^{1/3}\right)\right)$$

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

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

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

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

Result (type 5, 481 leaves):

$$b\left(-\left(\left(i\,\left(4\,A+7\,C\right)\,\text{Cos}[c+d\,x]^{10/3}\,\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]\left(C+A\,\text{Sec}[c+d\,x]^2\right)\left(-\left(\left(3\,i\,e^{-i\,d\,x}\,\text{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{3},\frac{2}{3},-e^{2\,i\,d\,x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\left(1+e^{2\,i\,d\,x}\,\text{Cos}[2\,c]+i\,e^{2\,i\,d\,x}\,\text{Sin}[2\,c]\right)^{1/3}\right)\Big/\left(2^{2/3}\,d\,\left(e^{-i\,d\,x}\left(\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]+i\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)\right)^{1/3}\right)\right)-\left(3\,i\,e^{i\,d\,x}\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{5}{3},-e^{2\,i\,d\,x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\left(1+e^{2\,i\,d\,x}\,\text{Cos}[2\,c]+i\,e^{2\,i\,d\,x}\,\text{Sin}[2\,c]\right)^{1/3}\right)\Big/\left(2\times 2^{2/3}\,d\,\left(e^{-i\,d\,x}\left(\left(1+e^{2\,i\,d\,x}\right)\text{Cos}[c]+i\left(-1+e^{2\,i\,d\,x}\right)\text{Sin}[c]\right)\right)^{1/3}\right)\right)\right)\Big/\left(7\,\left(b\,\text{Cos}[c+d\,x]\right)^{4/3}\left(2\,A+C+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)\right)+\left(\text{Cos}[c+d\,x]^4\left(C+A\,\text{Sec}[c+d\,x]^2\right)\left(\frac{6\,\left(4\,A+7\,C\right)\,\text{Csc}[c]\,\text{Sec}[c]}{7\,d}+\frac{6\,A\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^3\,\text{Sin}[d\,x]}{7\,d}+\frac{6\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\left(4\,A\,\text{Sin}[d\,x]+7\,C\,\text{Sin}[d\,x]\right)}{7\,d}+\frac{6\,A\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c]}{7\,d}\right)\right)\Big/\left(\left(b\,\text{Cos}[c+d\,x]\right)^{4/3}\left(2\,A+C+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)\right)$$

Problem 167: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{3\,A\,\text{Sin}[c+d\,x]}{2\,d\,(b\,\text{Cos}[c+d\,x])^{2/3}}+\left(3\,(A-2\,C)\,(b\,\text{Cos}[c+d\,x])^{4/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{5}{3},\text{Cos}[c+d\,x]^2\right]\text{Sin}[c+d\,x]\right)\Big/\left(8\,b^2\,d\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 277 leaves) :

$$-\Bigg(\Bigg(3\,e^{-i\,d\,x}\,\text{Cos}[c+d\,x]^{2/3}\,\text{Csc}[c]\,(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,\Bigg(10\,((-A+C)\,\text{Cos}[d\,x]+C\,\text{Cos}[2\,c+d\,x])+5\,(A-2\,C)\,\text{Hypergeometric2F1}\left[-\frac{1}{6},\frac{2}{3},\frac{5}{6},-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right](\text{Cos}[d\,x]-i\,\text{Sin}[d\,x])\,(1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)])^{2/3}+(A-2\,C)\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{5}{6},\frac{11}{6},-e^{2\,i\,d\,x}\,(\text{Cos}[c]+i\,\text{Sin}[c])^2\right](\text{Cos}[d\,x]+i\,\text{Sin}[d\,x])\,(1+\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)])^{2/3}\Bigg)\Bigg)\Big/\left(10\times 2^{1/3}\,d\,(b\,\text{Cos}[c+d\,x])^{2/3}\,\left(e^{-i\,d\,x}\,\left((1+e^{2\,i\,d\,x})\,\text{Cos}[c]+i\,(-1+e^{2\,i\,d\,x})\,\text{Sin}[c]\right)\right)^{2/3}\right)\Bigg)$$

Problem 169: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

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

$$\frac{3\,A\,b^2\,\text{Sin}[c+d\,x]}{8\,d\,(b\,\text{Cos}[c+d\,x])^{8/3}}+\left(3\,(5\,A+8\,C)\,\text{Hypergeometric2F1}\left[-\frac{1}{3},\frac{1}{2},\frac{2}{3},\text{Cos}[c+d\,x]^2\right]\text{Sin}[c+d\,x]\right)\Big/\left(16\,d\,(b\,\text{Cos}[c+d\,x])^{2/3}\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 473 leaves) :

$$b\left(-\left(\left(i\,(5A+8C)\,\text{Cos}[c+d x]^{11/3}\,\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]\right.\right.\right.$$
$$\left(C+A\,\text{Sec}[c+d x]^2\right)\left(-\left(\left(3\,i\,e^{-i d x}\,\text{Hypergeometric2F1}\left[-\frac{1}{6},\frac{2}{3},\frac{5}{6},\right.\right.\right.\right.$$
$$\left.-e^{2 i d x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\left(2+2e^{2 i d x}\,\text{Cos}[2c]+2i\,e^{2 i d x}\,\text{Sin}[2c]\right)^{2/3}\Bigg)\Bigg/$$
$$\left(d\left(e^{-i d x}\left(\left(1+e^{2 i d x}\right)\text{Cos}[c]+i\left(-1+e^{2 i d x}\right)\text{Sin}[c]\right)\right)^{2/3}\right)\Bigg)-$$
$$\left(3\,i\,e^{i d x}\,\text{Hypergeometric2F1}\left[\frac{2}{3},\frac{5}{6},\frac{11}{6},-e^{2 i d x}\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2\right]\right.$$
$$\left.\left(2+2e^{2 i d x}\,\text{Cos}[2c]+2i\,e^{2 i d x}\,\text{Sin}[2c]\right)^{2/3}\right)\Bigg/$$
$$\left(5d\left(e^{-i d x}\left(\left(1+e^{2 i d x}\right)\text{Cos}[c]+i\left(-1+e^{2 i d x}\right)\text{Sin}[c]\right)\right)^{2/3}\right)\Bigg)\Bigg)\Bigg/$$
$$\left(32\left(b\,\text{Cos}[c+d x]\right)^{5/3}\left(2A+C+C\,\text{Cos}[2c+2d x]\right)\right)\Bigg)+\Bigg(\text{Cos}[c+d x]^4$$
$$\left(C+A\,\text{Sec}[c+d x]^2\right)$$
$$\left(\frac{3\,(5A+8C)\,\text{Csc}[c]\,\text{Sec}[c]}{8d}+\frac{3A\,\text{Sec}[c]\,\text{Sec}[c+d x]^3\,\text{Sin}[d x]}{4d}+\right.$$
$$\left.\frac{3\,\text{Sec}[c]\,\text{Sec}[c+d x]\,\left(5A\,\text{Sin}[d x]+8C\,\text{Sin}[d x]\right)}{8d}+\frac{3A\,\text{Sec}[c+d x]^2\,\text{Tan}[c]}{4d}\right)\Bigg)\Bigg/$$
$$\left(\left(b\,\text{Cos}[c+d x]\right)^{5/3}\left(2A+C+C\,\text{Cos}[2c+2d x]\right)\right)\Bigg)$$

Problem 182: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\left(a\,\text{Cos}[c+d x]\right)^m\left(b\,\text{Cos}[c+d x]\right)^n\left(A+C\,\text{Cos}[c+d x]^2\right)\,dx$$

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

$$\frac{C\left(a\,\text{Cos}[c+d x]\right)^{1+m}\left(b\,\text{Cos}[c+d x]\right)^n\,\text{Sin}[c+d x]}{a\,d\,(2+m+n)}-$$
$$\left(\left(C\,(1+m+n)+A\,(2+m+n)\right)\left(a\,\text{Cos}[c+d x]\right)^{1+m}\left(b\,\text{Cos}[c+d x]\right)^n\right.$$
$$\left.\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}(1+m+n),\frac{1}{2}(3+m+n),\text{Cos}[c+d x]^2\right]\text{Sin}[c+d x]\right)\Bigg/$$
$$\left(a\,d\,(1+m+n)\,(2+m+n)\,\sqrt{\text{Sin}[c+d x]^2}\right)$$

Result (type 5, 459 leaves):

$$\frac{1}{4\,d}C\,\mathrm{Cos}[c+d\,x]^{-m-n}\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n$$
$$\left(\frac{1}{2+m+n}\,\mathrm{i}\,2^{-m-n}\,e^{-2\,\mathrm{i}\,(c+d\,x)}\,\left(e^{-\mathrm{i}\,(c+d\,x)}+e^{\mathrm{i}\,(c+d\,x)}\right)^{m+n}\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)^{-m-n}\right.$$
$$\mathrm{Hypergeometric2F1}\left[-m-n,\,-1-\frac{m}{2}-\frac{n}{2},\,-\frac{m}{2}-\frac{n}{2},\,-e^{2\,\mathrm{i}\,(c+d\,x)}\right]+$$
$$\frac{1}{-2+m+n}\,\mathrm{i}\,2^{-m-n}\,e^{2\,\mathrm{i}\,(c+d\,x)}\,\left(e^{-\mathrm{i}\,(c+d\,x)}+e^{\mathrm{i}\,(c+d\,x)}\right)^{m+n}\,\left(1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)^{-m-n}$$
$$\left.\mathrm{Hypergeometric2F1}\left[-m-n,\,1-\frac{m}{2}-\frac{n}{2},\,2-\frac{m}{2}-\frac{n}{2},\,-e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)-$$
$$\left(A\,\mathrm{Cos}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}\,(3+m+n),\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\Big/\left(d\,(1+m+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)-$$
$$\left(C\,\mathrm{Cos}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}\,(3+m+n),\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\Big/\left(2\,d\,(1+m+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Problem 183: Result more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]^2\,(b\,\mathrm{Cos}[c+d\,x])^n\,\left(A+C\,\mathrm{Cos}[c+d\,x]^2\right)\,dx$$

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

$$\frac{C\,(b\,\mathrm{Cos}[c+d\,x])^{3+n}\,\mathrm{Sin}[c+d\,x]}{b^3\,d\,(4+n)}-$$
$$\left((C\,(3+n)+A\,(4+n))\,(b\,\mathrm{Cos}[c+d\,x])^{3+n}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{3+n}{2},\,\frac{5+n}{2},\,\mathrm{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(b^3\,d\,(3+n)\,(4+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 342 leaves):

$$\frac{1}{8\,d}\left(b\,\mathrm{Cos}[c+d\,x]\right)^n \mathrm{Cot}[c+d\,x]\left(-\frac{C\,\mathrm{Hypergeometric2F1}\left[-\frac{3}{2},\frac{1+n}{2},\frac{3+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{1+n}+\right.$$
$$\frac{4\,(A+C)\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{1+n}+$$
$$\frac{6\,C\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{Hypergeometric2F1}\left[-\frac{1}{2},\frac{3+n}{2},\frac{5+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{3+n}-$$
$$\frac{4\,A\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{1+n}-$$
$$\frac{3\,C\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{1+n}-$$
$$\frac{4\,A\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{3+n}{2},\frac{5+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{3+n}-$$
$$\frac{4\,C\,\mathrm{Cos}[c+d\,x]^2\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{3+n}{2},\frac{5+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{3+n}-$$
$$\left.\frac{C\,\mathrm{Cos}[c+d\,x]^4\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{5+n}{2},\frac{7+n}{2},\mathrm{Cos}[c+d\,x]^2\right]}{5+n}\right)\sqrt{\mathrm{Sin}[c+d\,x]^2}$$

Problem 185: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \left(b\,\mathrm{Cos}[c+d\,x]\right)^n \left(A+C\,\mathrm{Cos}[c+d\,x]^2\right) dx$$

Optimal (type 5, 117 leaves, 2 steps):

$$\frac{C\,\left(b\,\mathrm{Cos}[c+d\,x]\right)^{1+n}\mathrm{Sin}[c+d\,x]}{b\,d\,(2+n)}-$$
$$\left(\left(C\,(1+n)+A\,(2+n)\right)\left(b\,\mathrm{Cos}[c+d\,x]\right)^{1+n}\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\mathrm{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(b\,d\,(1+n)\,(2+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 294 leaves):

$$\frac{1}{4\,d}\left(b\,\text{Cos}[c+d\,x]\right)^n \left(\frac{1}{2+n}\,\mathbb{i}\,2^{-n}\,C\,e^{-2\,\mathbb{i}\,(c+d\,x)}\left(1+e^{2\,\mathbb{i}\,(c+d\,x)}\right)^{-n}\left(e^{-\mathbb{i}\,(c+d\,x)}\left(1+e^{2\,\mathbb{i}\,(c+d\,x)}\right)\right)^n \text{Cos}[c+d\,x]^{-n}\right.$$
$$\text{Hypergeometric2F1}\left[-1-\frac{n}{2},\,-n,\,-\frac{n}{2},\,-e^{2\,\mathbb{i}\,(c+d\,x)}\right]+\frac{1}{-2+n}\,\mathbb{i}\,2^{-n}\,C\,e^{2\,\mathbb{i}\,(c+d\,x)}\left(1+e^{2\,\mathbb{i}\,(c+d\,x)}\right)^{-n}$$
$$\left(e^{-\mathbb{i}\,(c+d\,x)}\left(1+e^{2\,\mathbb{i}\,(c+d\,x)}\right)\right)^n \text{Cos}[c+d\,x]^{-n}\,\text{Hypergeometric2F1}\left[1-\frac{n}{2},\,-n,\,2-\frac{n}{2},\,-e^{2\,\mathbb{i}\,(c+d\,x)}\right]-$$
$$\left.\frac{1}{1+n}2\left(2\,A+C\right)\text{Cot}[c+d\,x]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1+n}{2},\,\frac{3+n}{2},\,\text{Cos}[c+d\,x]^2\right]\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

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

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

Optimal (type 5, 142 leaves, 3 steps):

$$\frac{2\,C\,\text{Cos}[c+d\,x]^{7/2}\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Sin}[c+d\,x]}{d\,(9+2\,n)}-$$
$$\left(2\left(C\,(7+2\,n)+A\,(9+2\,n)\right)\text{Cos}[c+d\,x]^{7/2}\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{4}\,(7+2\,n),\right.\right.$$
$$\left.\left.\frac{1}{4}\,(11+2\,n),\,\text{Cos}[c+d\,x]^2\right]\text{Sin}[c+d\,x]\right)\Big/\left(d\,(7+2\,n)\,(9+2\,n)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 400 leaves):

$$\frac{1}{8 d}\text{Cos}[c+d x]^{3/2}(b\,\text{Cos}[c+d x])^n\,\text{Csc}[c+d x]\left(-\frac{1}{3+2 n}2\,C\,\text{Hypergeometric2F1}\left[-\frac{3}{2},\frac{1}{4}(3+2 n),\frac{1}{4}(7+2 n),\text{Cos}[c+d x]^2\right]+\frac{1}{3+2 n}8\,(A+C)\,\text{Hypergeometric2F1}\left[-\frac{1}{2},\frac{1}{4}(3+2 n),\frac{1}{4}(7+2 n),\text{Cos}[c+d x]^2\right]+\frac{1}{\frac{7}{2}+n}6\,C\,\text{Cos}[c+d x]^2\,\text{Hypergeometric2F1}\left[-\frac{1}{2},\frac{1}{4}(7+2 n),\frac{1}{4}(11+2 n),\text{Cos}[c+d x]^2\right]-\frac{8\,A\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(3+2 n),\frac{1}{4}(7+2 n),\text{Cos}[c+d x]^2\right]}{3+2 n}-\frac{6\,C\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(3+2 n),\frac{1}{4}(7+2 n),\text{Cos}[c+d x]^2\right]}{3+2 n}-\frac{1}{7+2 n}8\,A\,\text{Cos}[c+d x]^2\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(7+2 n),\frac{1}{4}(11+2 n),\text{Cos}[c+d x]^2\right]-\frac{1}{7+2 n}8\,C\,\text{Cos}[c+d x]^2\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(7+2 n),\frac{1}{4}(11+2 n),\text{Cos}[c+d x]^2\right]-\frac{1}{11+2 n}2\,C\,\text{Cos}[c+d x]^4\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(11+2 n),\frac{1}{4}(15+2 n),\text{Cos}[c+d x]^2\right]\right)\sqrt{\text{Sin}[c+d x]^2}$$

Problem 198: Result unnecessarily involves imaginary or complex numbers.

$$\int (a+a\,\text{Cos}[e+f x])^m\,(A+C\,\text{Cos}[e+f x]^2)\,dx$$

Optimal (type 5, 170 leaves, 4 steps):

$$-\frac{C\,(a+a\,\text{Cos}[e+f x])^m\,\text{Sin}[e+f x]}{f\,(2+3 m+m^2)}+\frac{C\,(a+a\,\text{Cos}[e+f x])^{1+m}\,\text{Sin}[e+f x]}{a f\,(2+m)}+\frac{1}{f\,(1+m)\,(2+m)}2^{\frac{1}{2}+m}\,(C\,(1+m+m^2)+A\,(2+3 m+m^2))\,(1+\text{Cos}[e+f x])^{-\frac{1}{2}-m}\,(a+a\,\text{Cos}[e+f x])^m\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{1}{2}(1-\text{Cos}[e+f x])\right]\text{Sin}[e+f x]$$

Result (type 5, 238 leaves):

$$\frac{1}{f\,(-2+m)\,m\,(2+m)}i\,4^{-1-m}\,e^{-2 i (e+f x)}\,(1+e^{i (e+f x)})^{-2 m}\left(e^{-\frac{1}{2} i (e+f x)}(1+e^{i (e+f x)})\right)^{2 m}\text{Cos}\left[\frac{1}{2}(e+f x)\right]^{-2 m}(a\,(1+\text{Cos}[e+f x]))^m\,\left(C\,(-2+m)\,m\,\text{Hypergeometric2F1}\left[-2-m,-2 m,-1-m,-e^{i (e+f x)}\right]+e^{2 i (e+f x)}\,(2+m)\,\left(C\,e^{2 i (e+f x)}\,m\,\text{Hypergeometric2F1}\left[2-m,-2 m,3-m,-e^{i (e+f x)}\right]+2\,(2 A+C)\,(-2+m)\,\text{Hypergeometric2F1}\left[-2 m,-m,1-m,-e^{i (e+f x)}\right]\right)\right)$$

Problem 200: Result unnecessarily involves imaginary or complex numbers.

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

Optimal (type 5, 135 leaves, 4 steps):

$$-\frac{9 C (a + a \text{Cos}[c + d x])^{1/3} \text{Sin}[c + d x]}{28 d} + \frac{3 C (a + a \text{Cos}[c + d x])^{4/3} \text{Sin}[c + d x]}{7 a d} + \left((28 A + 13 C) (a + a \text{Cos}[c + d x])^{1/3} \text{Hypergeometric2F1}\left[\frac{1}{6}, \frac{1}{2}, \frac{3}{2}, \frac{1}{2} (1 - \text{Cos}[c + d x])\right] \text{Sin}[c + d x]\right) \Big/ \left(14 \times 2^{1/6} d (1 + \text{Cos}[c + d x])^{5/6}\right)$$

Result (type 5, 240 leaves):

$$\frac{1}{112 d} 3 (a (1 + \text{Cos}[c + d x]))^{1/3} \left(-4 (28 A + 13 C) \text{Cot}\left[\frac{c}{2}\right] + 4 C \text{Cos}[d x] \text{Sin}[c] + \left((28 A + 13 C) \text{Csc}\left[\frac{c}{4}\right] \left(2 \text{Hypergeometric2F1}\left[-\frac{1}{3}, \frac{1}{3}, \frac{2}{3}, -e^{i d x} (\text{Cos}[c] + i \text{Sin}[c])\right] + e^{i d x} \text{Hypergeometric2F1}\left[\frac{1}{3}, \frac{2}{3}, \frac{5}{3}, -e^{i d x} (\text{Cos}[c] + i \text{Sin}[c])\right]\right) \text{Sec}\left[\frac{c}{4}\right] \left(1 + e^{i d x} \text{Cos}[c] + i e^{i d x} \text{Sin}[c]\right)^{1/3}\right) \Big/ \left(\left(1 + e^{i d x}\right) \text{Cos}\left[\frac{c}{2}\right] + i \left(-1 + e^{i d x}\right) \text{Sin}\left[\frac{c}{2}\right]\right) + 8 C \text{Cos}[2 d x] \text{Sin}[2 c] + 4 C \text{Cos}[c] \text{Sin}[d x] + 8 C \text{Cos}[2 c] \text{Sin}[2 d x]\right)$$

Problem 202: Unable to integrate problem.

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

Optimal (type 5, 138 leaves, 4 steps):

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

Result (type 8, 29 leaves):

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

Problem 208: Result more than twice size of optimal antiderivative.

$$\int (a + b \text{Cos}[e + f x])^m (A + C \text{Cos}[e + f x]^2) \, dx$$

Optimal (type 6, 285 leaves, 8 steps):

$$\frac{C\,(a+b\,\text{Cos}[e+f\,x])^{1+m}\,\text{Sin}[e+f\,x]}{b\,f\,(2+m)}-$$

$$\left(\sqrt{2}\,a\,(a+b)\,C\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-m,\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[e+f\,x]),\frac{b\,(1-\text{Cos}[e+f\,x])}{a+b}\right]\right.$$

$$\left.(a+b\,\text{Cos}[e+f\,x])^{m}\left(\frac{a+b\,\text{Cos}[e+f\,x]}{a+b}\right)^{-m}\text{Sin}[e+f\,x]\right)\Big/$$

$$\left(b^{2}\,f\,(2+m)\,\sqrt{1+\text{Cos}[e+f\,x]}\right)+\left(\sqrt{2}\,\left(a^{2}\,C+b^{2}\,(C\,(1+m)+A\,(2+m))\right)\right.$$

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

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

Result (type 6, 10 836 leaves):

$$\Big(6\,(a+b)$$

$$\left(A\,(a+b\,\text{Cos}[e+f\,x])^{m}+\frac{1}{2}\,C\,(a+b\,\text{Cos}[e+f\,x])^{m}+\frac{1}{2}\,C\,(a+b\,\text{Cos}[e+f\,x])^{m}\,\text{Cos}[2\,(e+f\,x)]\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Big(f\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3\Big(\frac{1}{\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}\,6\,(a+b)\,m\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{1}{\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^4}\,18\,(a+b)\,\text{Sec}\Big[\frac{1}{2}(e+f x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+f x)\Big]^2$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

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

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

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

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

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

$$\Bigg(4\,C\,\Bigg(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$(a+b)\,(1+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},\,2+m,\,1-m,\,\frac{7}{2},\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$(a+b)\,(2+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\Big[\frac{5}{2},\,3+m,\,1-m,\,\frac{7}{2},$$

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

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

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

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

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

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

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

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right.$$

$$\left(2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\right.\right.\right.$$

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

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

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

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

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

$$\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

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

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

Problem 215: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d\,x]^m\,\left(B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)}{(b\,\text{Cos}[c+d\,x])^{4/3}}\,dx$$

Optimal (type 5, 173 leaves, 5 steps):

$$-\left(\left(3\,B\,\text{Cos}[c+d\,x]^{1+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{6}\,(2+3\,m),\,\frac{1}{6}\,(8+3\,m),\,\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(b\,d\,(2+3\,m)\,(b\,\text{Cos}[c+d\,x])^{1/3}\,\sqrt{\text{Sin}[c+d\,x]^2}\right)\right)-\left(3\,C\,\text{Cos}[c+d\,x]^{2+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{6}\,(5+3\,m),\,\frac{1}{6}\,(11+3\,m),\,\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(b\,d\,(5+3\,m)\,(b\,\text{Cos}[c+d\,x])^{1/3}\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 6, 4959 leaves) :

$$\left(2\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{\frac{5}{3}+m}\text{Cos}[c+d\,x]^{4/3}\left(\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{1}{3}+m}\left(\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}+B\,\text{Cos}[c+d\,x]^{\frac{5}{3}+m}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\text{Cos}[2\,(c+d\,x)]+\frac{1}{2}\,\text{i}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\text{Sin}[2\,(c+d\,x)]+\text{Sec}[c+d\,x]\left(-\frac{1}{2}\,\text{i}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\text{Cos}[2\,(c+d\,x)]\,\text{Sin}[c+d\,x]+B\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\text{Sin}[c+d\,x]^2+\text{Sin}[c+d\,x]\left(-\frac{1}{2}\,\text{i}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\text{Sin}[2\,(c+d\,x)]\right)\right)\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\left(9\,(B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left(-(5+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(5\,(-B+C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+2\left((5+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-1+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Big/$$

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

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-(5+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(5\,(-B+C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left((5+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$
$$2\left(\frac{5}{3}+m\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{\frac{2}{3}+m}\left(\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{1}{3}+m}$$
$$\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\left(\left(9\,(B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.$$
$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-(5+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(5\,(-B+C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left((5+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)+$$
$$2\left(-\frac{1}{3}+m\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{\frac{5}{3}+m}\left(\text{Cos}[c+d\,x]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{4}{3}+m}$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]$$

$$\left(-\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Sin}[c+d x]+\text{Cos}[c+d x]\,\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)$$
$$\left(\left(9\left(B+C\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)\Big/\right.$$
$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$2\left(-\left(5+3 m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left.\left(1-3 m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)+\left(5\left(-B+C\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\Big/$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$2\left(\left(5+3 m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left(-1+3 m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\right)+$$
$$2\left(\text{Cos}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)^{\frac{5}{3}+m}\left(\text{Cos}[c+d x]\,\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)^{-\frac{1}{3}+m}\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]$$
$$\left(\left(9\left(B+C\right)\right.\right.$$
$$\left(-\frac{1}{3}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]+\frac{1}{3}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\right)\Big/$$
$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$2\left(-\left(5+3 m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left.\left(1-3 m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)+\left(5\left(-B+C\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]\right)\Big/$$
$$\left(-15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$2\left(\left(5+3 m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{1}{2}(c+d x)\Big]+\frac{5}{7}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

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

$$(-1+3 m)\ \Big(-\frac{5}{7}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

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

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

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

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

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

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

Problem 224: Result more than twice size of optimal antiderivative.

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

Optimal (type 5, 163 leaves, 5 steps):

$$-\left(\left(2\,B\,\text{Cos}[c+d\,x]^{9/2}\,\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{4}\,\left(9+2\,n\right),\right.\right.\right.$$
$$\left.\left.\left.\frac{1}{4}\,\left(13+2\,n\right),\,\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(d\,\left(9+2\,n\right)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)\right)-$$
$$\left(2\,C\,\text{Cos}[c+d\,x]^{11/2}\,\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{4}\,\left(11+2\,n\right),\right.\right.$$
$$\left.\left.\frac{1}{4}\,\left(15+2\,n\right),\,\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(d\,\left(11+2\,n\right)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 450 leaves):

$$\frac{1}{8 d}\operatorname{Cos}[c+d x]^{3/2}\left(b \operatorname{Cos}[c+d x]\right)^n \operatorname{Csc}[c+d x]$$
$$\left(-\frac{1}{3+2 n} 2 C \text{ Hypergeometric2F1}\left[-\frac{3}{2}, \frac{1}{4}(3+2 n), \frac{1}{4}(7+2 n), \operatorname{Cos}[c+d x]^2\right]+\right.$$
$$\frac{1}{3+2 n} 8 C \text{ Hypergeometric2F1}\left[-\frac{1}{2}, \frac{1}{4}(3+2 n), \frac{1}{4}(7+2 n), \operatorname{Cos}[c+d x]^2\right]+\frac{1}{\frac{5}{2}+n}$$
$$6 B \operatorname{Cos}[c+d x] \text{ Hypergeometric2F1}\left[-\frac{1}{2}, \frac{1}{4}(5+2 n), \frac{1}{4}(9+2 n), \operatorname{Cos}[c+d x]^2\right]+\frac{1}{\frac{7}{2}+n}$$
$$6 C \operatorname{Cos}[c+d x]^2 \text{ Hypergeometric2F1}\left[-\frac{1}{2}, \frac{1}{4}(7+2 n), \frac{1}{4}(11+2 n), \operatorname{Cos}[c+d x]^2\right]-$$
$$\frac{6 C \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(3+2 n), \frac{1}{4}(7+2 n), \operatorname{Cos}[c+d x]^2\right]}{3+2 n}-\frac{1}{\frac{5}{2}+n}$$
$$6 B \operatorname{Cos}[c+d x] \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(5+2 n), \frac{1}{4}(9+2 n), \operatorname{Cos}[c+d x]^2\right]-\frac{1}{7+2 n}$$
$$8 C \operatorname{Cos}[c+d x]^2 \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(7+2 n), \frac{1}{4}(11+2 n), \operatorname{Cos}[c+d x]^2\right]-$$
$$\frac{1}{9+2 n} 4 B \operatorname{Cos}[c+d x]^3 \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(9+2 n), \frac{1}{4}(13+2 n), \operatorname{Cos}[c+d x]^2\right]-$$
$$\frac{1}{11+2 n} 2 C \operatorname{Cos}[c+d x]^4$$
$$\left.\text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(11+2 n), \frac{1}{4}(15+2 n), \operatorname{Cos}[c+d x]^2\right]\right) \sqrt{\operatorname{Sin}[c+d x]^2}$$

Problem 228: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\left(b \operatorname{Cos}[c+d x]\right)^n\left(B \operatorname{Cos}[c+d x]+C \operatorname{Cos}[c+d x]^2\right)}{\operatorname{Cos}[c+d x]^{3/2}} \, dx$$

Optimal (type 5, 163 leaves, 5 steps):

$$-\left(\left(2 B \sqrt{\operatorname{Cos}[c+d x]}\left(b \operatorname{Cos}[c+d x]\right)^n \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(1+2 n),\right.\right.\right.$$
$$\left.\left.\left.\frac{1}{4}(5+2 n), \operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right) \Big/ \left(d(1+2 n) \sqrt{\operatorname{Sin}[c+d x]^2}\right)\right)-$$
$$\left(2 C \operatorname{Cos}[c+d x]^{3/2}\left(b \operatorname{Cos}[c+d x]\right)^n \text{ Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4}(3+2 n), \frac{1}{4}(7+2 n), \operatorname{Cos}[c+d x]^2\right]\right.$$
$$\left.\operatorname{Sin}[c+d x]\right) \Big/ \left(d(3+2 n) \sqrt{\operatorname{Sin}[c+d x]^2}\right)$$

Result (type 6, 4951 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Big(\Big(9\,(B+C)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 229: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 5, 163 leaves, 5 steps):

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

Result (type 6, 4842 leaves):

$$\left(6\,\sqrt{\text{Cos}[c+d\,x]}\,(b\,\text{Cos}[c+d\,x])^n\right.$$
$$\left(B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\text{Sec}[c+d\,x]\left(\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[2\,(c+d\,x)]+\right.\right.$$
$$\left.\frac{1}{2}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[2\,(c+d\,x)]\right)+\text{Sec}[c+d\,x]^2$$
$$\left(-\frac{1}{2}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[2\,(c+d\,x)]\,\text{Sin}[c+d\,x]+B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[c+d\,x]^2+\right.$$
$$\left.\left.\text{Sin}[c+d\,x]\left(-\frac{1}{2}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[2\,(c+d\,x)]\right)\right)\right)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\left(\left((B-C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$
$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.(-3+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Big/\left(d\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right.$$
$$\left(-\frac{1}{\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^3}\,12\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 230: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 5, 163 leaves, 5 steps):

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

Result (type 6, 4948 leaves):

$$\Bigg(2\,\text{Cos}[c+d x]^{-n}\,(b\,\text{Cos}[c+d x])^n$$

$$\Bigg(B\,\text{Cos}[c+d x]^{-\frac{1}{2}+n}+\text{Sec}[c+d x]^2\left(\frac{1}{2}C\,\text{Cos}[c+d x]^{\frac{1}{2}+n}+\frac{1}{2}C\,\text{Cos}[c+d x]^{\frac{1}{2}+n}\,\text{Cos}[2(c+d x)]+\frac{1}{2}\,i\,C\,\text{Cos}[c+d x]^{\frac{1}{2}+n}\,\text{Sin}[2(c+d x)]\right)+\text{Sec}[c+d x]^3$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(\bigg(9\,(B+C)\left(-\frac{1}{3}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{3}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\bigg)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\bigg((1-2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(5-2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\bigg)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(5\,(-B+C)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\Big/$$
$$\left(-5\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\bigg((-1+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(-5+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\bigg)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\bigg(5\,(-B+C)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\left(-\frac{3}{5}\left(-\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\bigg)\Big/$$
$$\left(-5\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\bigg((-1+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(-5+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\bigg)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-$$
$$\bigg(9\,(B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\bigg(\bigg((1-2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(5-2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 231: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(b\,\mathrm{Cos}[c+d\,x])^n\,\left(B\,\mathrm{Cos}[c+d\,x]+C\,\mathrm{Cos}[c+d\,x]^2\right)}{\mathrm{Cos}[c+d\,x]^{9/2}}\,dx$$

Optimal (type 5, 163 leaves, 5 steps):

$$\left(2\,B\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(-5+2\,n),\frac{1}{4}(-1+2\,n),\mathrm{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(d\,(5-2\,n)\,\mathrm{Cos}[c+d\,x]^{5/2}\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)+$$
$$\left(2\,C\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}(-3+2\,n),\frac{1}{4}(1+2\,n),\mathrm{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]\right)\Big/\left(d\,(3-2\,n)\,\mathrm{Cos}[c+d\,x]^{3/2}\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Result (type 6, 4948 leaves):

$$\Bigg(2\,\text{Cos}[c+d\,x]^{-n}\,(b\,\text{Cos}[c+d\,x])^{n}$$

$$\Bigg(B\,\text{Cos}[c+d\,x]^{-\frac{3}{2}+n}+\text{Sec}[c+d\,x]^{3}\,\Big(\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[2\,(c+d\,x)]+$$

$$\frac{1}{2}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[2\,(c+d\,x)]\Big)+\text{Sec}[c+d\,x]^{4}$$

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

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

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

$$\Bigg(\Big(9\,(B+C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{7}{2}-n,-\frac{3}{2}+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2},-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2}\Big]\Big)\Big/$$

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

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

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

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

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

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

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

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

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

$$\Bigg(3\,d\,\Bigg(-\frac{2}{3}\,\Big(-\frac{7}{2}+n\Big)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2}\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2}\,\Big(1-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2}\Big)^{-\frac{9}{2}+n}$$

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

$$\Bigg(\Big(9\,(B+C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{7}{2}-n,-\frac{3}{2}+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2},-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^{2}\Big]\Big)\Big/$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(9\,(B+C)\right.\right.$$

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

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

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

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

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

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

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

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

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

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

$$\frac{3}{5}\left(\frac{9}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{11}{2}-n,-\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{5}{7}\left(\frac{9}{2}-n\right)\text{AppellF1}\left[\frac{7}{2},\frac{11}{2}-n,-\frac{3}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

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

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

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

Problem 232: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\left(a+a\,\text{Cos}[e+f\,x]\right)^m\left(B\,\text{Cos}[e+f\,x]+C\,\text{Cos}[e+f\,x]^2\right)\,dx$$

Optimal (type 5, 173 leaves, 4 steps):

$$-\frac{\left(C-B\left(2+m\right)\right)\left(a+a\,\text{Cos}[e+f\,x]\right)^m\text{Sin}[e+f\,x]}{f\left(1+m\right)\left(2+m\right)}+\frac{C\left(a+a\,\text{Cos}[e+f\,x]\right)^{1+m}\text{Sin}[e+f\,x]}{a\,f\left(2+m\right)}+\frac{1}{f\left(1+m\right)\left(2+m\right)}2^{\frac{1}{2}+m}\left(B\,m\left(2+m\right)+C\left(1+m+m^2\right)\right)\left(1+\text{Cos}[e+f\,x]\right)^{-\frac{1}{2}-m}\left(a+a\,\text{Cos}[e+f\,x]\right)^m\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{1}{2}\left(1-\text{Cos}[e+f\,x]\right)\right]\text{Sin}[e+f\,x]$$

Result (type 5, 356 leaves):

$$\frac{1}{f\left(-2+m\right)\left(-1+m\right)m\left(1+m\right)\left(2+m\right)}i\,4^{-1-m}e^{-2i(e+f\,x)}\left(1+e^{i(e+f\,x)}\right)^{-2m}\left(e^{-\frac{1}{2}i(e+f\,x)}\left(1+e^{i(e+f\,x)}\right)\right)^{2m}\text{Cos}\left[\frac{1}{2}\left(e+f\,x\right)\right]^{-2m}\left(a\left(1+\text{Cos}[e+f\,x]\right)\right)^m\left(C\,m\left(2-m-2m^2+m^3\right)\text{Hypergeometric2F1}\left[-2-m,-2m,-1-m,-e^{i(e+f\,x)}\right]+e^{i(e+f\,x)}\left(2+m\right)\left(2\,B\,m\left(2-3m+m^2\right)\text{Hypergeometric2F1}\left[-1-m,-2m,-m,-e^{i(e+f\,x)}\right]+e^{i(e+f\,x)}\left(1+m\right)\left(2\,B\,e^{i(e+f\,x)}\left(-2+m\right)m\,\text{Hypergeometric2F1}\left[1-m,-2m,2-m,-e^{i(e+f\,x)}\right]+C\left(-1+m\right)\left(e^{2i(e+f\,x)}m\,\text{Hypergeometric2F1}\left[2-m,-2m,3-m,-e^{i(e+f\,x)}\right]+2\left(-2+m\right)\text{Hypergeometric2F1}\left[-2m,-m,1-m,-e^{i(e+f\,x)}\right]\right)\right)\right)\right)$$

Problem 233: Result more than twice size of optimal antiderivative.

$$\int\left(a+b\,\text{Cos}[e+f\,x]\right)^m\left(B\,\text{Cos}[e+f\,x]+C\,\text{Cos}[e+f\,x]^2\right)\,dx$$

Optimal (type 6, 295 leaves, 8 steps):

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

Result (type 6, 13 480 leaves):

$$-\left(\left(\left(6\,(a+b)\,\left(B\,\text{Cos}[e+f\,x]\,(a+b\,\text{Cos}[e+f\,x])^{m}+C\,\text{Cos}[e+f\,x]^{2}\,(a+b\,\text{Cos}[e+f\,x])^{m}\right)\right.\right.\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(f\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3\Bigg(-\frac{1}{\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}6(a+b)\,m\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]$$

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

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

$$\left(a+\frac{b-b\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^{-1+m}\Bigg(\Bigg(B\,\text{AppellF1}\Big[\frac{1}{2},1+m,-m,\frac{3}{2},-\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\left(1+\operatorname{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Big/\Bigg(3(a+b)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right.$$

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

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

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

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

$$\left.\left.\left.-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)-\left(4\,C\,\mathrm{AppellF1}\left[\frac{1}{2},\,3+m,\right.\right.$$

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

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

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

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

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

$$\frac{1}{\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^4}\,18\,(a+b)\,\mathrm{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2$$

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

$$\left(\left(B\,\mathrm{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.\right.$$

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

$$\left.-m,\,\frac{3}{2},\,-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+$$

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

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

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

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

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

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg)-$$

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

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

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

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

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

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Bigg/\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\right.$$

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

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

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

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

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

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg)\Bigg/\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\right.$$

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

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

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

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

$$\Bigg(4\,\text{C AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg)\Bigg/\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\right.$$

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

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

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

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

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

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 3+m, -m, \frac{3}{2},\right.\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left.\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^2\Bigg/\left(3\,(a+b)\right.$$

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

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

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

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

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

$$\left.\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\right)\Bigg/\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\right.\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Bigg/\Bigg(3(a+b)$$

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

$$2\Bigg((a-b)\, m\, \mathrm{AppellF1}\left[\frac{3}{2}, 2+m, 1-m, \frac{5}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Bigg(4\, C\Bigg(\frac{1}{3(a+b)}(a-b)\, m\, \mathrm{AppellF1}\left[\frac{3}{2}, 3+m, 1-m, \frac{5}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{1}{3}(3+m)$$

$$\mathrm{AppellF1}\left[\frac{3}{2}, 4+m, -m, \frac{5}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\Bigg)\Bigg/\Bigg(3(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},\right.$$

$$\left.3+m, -m, \frac{3}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\, m\, \mathrm{AppellF1}\left[\frac{3}{2}, 3+m, 1-m, \frac{5}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

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

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

$$\Bigg(B\,\mathrm{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg(2\Bigg((a-b)\, m\, \mathrm{AppellF1}\left[\frac{3}{2}, 1+m, 1-m,\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left.2+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

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

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

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

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

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

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

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

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

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

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

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

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

$$\left.\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2}, 2+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\Bigg(4\,C\,\mathrm{AppellF1}\Big[\frac{1}{2},3+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]$$

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

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

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

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

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

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

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

$$2\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left((a-b)\, m\left(-\frac{1}{5(a+b)}3(a-b)(1-m)\,\mathrm{AppellF1}\left[\frac{5}{2},3+m,2-m,\frac{7}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{3}{5}(3+m)\,\mathrm{AppellF1}\left[\frac{5}{2},4+m,1-m,\frac{7}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)-(a+b)(3+m)\left(\frac{1}{5(a+b)}3(a-b)\, m\,\mathrm{AppellF1}\left[\frac{5}{2},4+m,1-m,\frac{7}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{3}{5}(4+m)\,\mathrm{AppellF1}\left[\frac{5}{2},5+m,-m,\frac{7}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\mathrm{Sec}\left[\frac{1}{2}(e+f x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(3(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+2\left((a-b)\, m\,\mathrm{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)(3+m)\,\mathrm{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 238: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a\,\mathrm{Cos}[e+f x])^m\left(A+B\,\mathrm{Cos}[e+f x]+C\,\mathrm{Cos}[e+f x]^2\right)dx$$

Optimal (type 5, 187 leaves, 4 steps):

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

Result (type 5, 441 leaves):

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

Problem 267: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)\,\text{Sec}[c+d\,x]}{\sqrt{b\,\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 110 leaves, 7 steps):

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

Result (type 5, 803 leaves):

$$\left(\text{Cos}[c+d\,x]^2\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\left(-\frac{2\,\left(-2\,A+C+C\,\text{Cos}[2\,c]\right)\,\text{Csc}[c]\,\text{Sec}[c]}{d}+\frac{4\,A\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[d\,x]}{d}\right)\right)\Big/$$
$$\left(\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$
$$\left(4\,B\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$
$$\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$
$$\left.\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$
$$\left(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\,\sqrt{1+\text{Cot}[c]^2}\right)+$$
$$\left(2\,A\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\right.$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$
$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}$$
$$\left.\left.\left.\sqrt{1+\text{Tan}[c]^2}\right)-\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\right)\right)\Big/$$
$$\left(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$

$$\Bigg(2\,C\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\big(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\big)$$

$$\Bigg(\Bigg(\text{HypergeometricPFQ}\Big[\Big\{-\frac{1}{2},-\frac{1}{4}\Big\},\Big\{\frac{3}{4}\Big\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\Big]$$

$$\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\Bigg)\Big/\Bigg(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}$$

$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}$$

$$\sqrt{1+\text{Tan}[c]^2}\Bigg)-\frac{\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}}{\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}}\Bigg)\Bigg)\Big/$$

$$\Big(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\big(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\big)\Big)$$

Problem 268: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\big(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\big)\,\text{Sec}[c+d\,x]^2}{\sqrt{b\,\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 4, 139 leaves, 8 steps):

$$-\frac{2\,B\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\text{EllipticE}\big[\frac{1}{2}\,(c+d\,x),2\big]}{b\,d\,\sqrt{\text{Cos}[c+d\,x]}}+$$

$$\frac{2\,(A+3\,C)\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\big[\frac{1}{2}\,(c+d\,x),2\big]}{3\,d\,\sqrt{b\,\text{Cos}[c+d\,x]}}+\frac{2\,A\,b\,\text{Sin}[c+d\,x]}{3\,d\,\big(b\,\text{Cos}[c+d\,x]\big)^{3/2}}+\frac{2\,B\,\text{Sin}[c+d\,x]}{d\,\sqrt{b\,\text{Cos}[c+d\,x]}}$$

Result (type 5, 757 leaves):

$$\Bigg(\text{Cos}[c+d\,x]^3\,\big(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\big)\,\Bigg(\frac{4\,B\,\text{Csc}[c]\,\text{Sec}[c]}{d}+$$

$$\frac{4\,A\,\text{Sec}[c]\,\text{Sec}[c+d\,x]^2\,\text{Sin}[d\,x]}{3\,d}+\frac{4\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\big(A\,\text{Sin}[c]+3\,B\,\text{Sin}[d\,x]\big)}{3\,d}\Bigg)\Bigg)\Big/$$

$$\Big(\sqrt{b\,\text{Cos}[c+d\,x]}\,\big(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\big)\Big)-$$

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

$$\left(4\,C\,\text{Cos}[c+d\,x]^{5/2}\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\frac{1}{2}\right\},\left\{\frac{5}{4}\right\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\right)\Big/\left(d\sqrt{b\,\text{Cos}[c+d\,x]}\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\sqrt{1+\text{Cot}[c]^2}\right)+$$

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

Problem 276: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 144 leaves, 8 steps):

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

Result (type 5, 761 leaves):

$$\frac{1}{b}\left(\left(\text{Cos}[c + d\,x]^3\,\left(C + B\,\text{Sec}[c + d\,x] + A\,\text{Sec}[c + d\,x]^2\right)\left(\frac{4\,B\,\text{Csc}[c]\,\text{Sec}[c]}{d} + \frac{4\,A\,\text{Sec}[c]\,\text{Sec}[c + d\,x]^2\,\text{Sin}[d\,x]}{3\,d} + \frac{4\,\text{Sec}[c]\,\text{Sec}[c + d\,x]\,\left(A\,\text{Sin}[c] + 3\,B\,\text{Sin}[d\,x]\right)}{3\,d}\right)\right)\Big/\right.$$
$$\left(\sqrt{b\,\text{Cos}[c + d\,x]}\,\left(2\,A + C + 2\,B\,\text{Cos}[c + d\,x] + C\,\text{Cos}[2\,c + 2\,d\,x]\right)\right) -$$
$$\left(4\,A\,\text{Cos}[c + d\,x]^{5/2}\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$
$$\left(C + B\,\text{Sec}[c + d\,x] + A\,\text{Sec}[c + d\,x]^2\right)\,\text{Sec}[d\,x - \text{ArcTan}[\text{Cot}[c]]]$$
$$\sqrt{1 - \text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}\;\sqrt{-\sqrt{1 + \text{Cot}[c]^2}\;\text{Sin}[c]\,\text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}$$
$$\left.\sqrt{1 + \text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$
$$\left(3\,d\,\sqrt{b\,\text{Cos}[c + d\,x]}\,\left(2\,A + C + 2\,B\,\text{Cos}[c + d\,x] + C\,\text{Cos}[2\,c + 2\,d\,x]\right)\,\sqrt{1 + \text{Cot}[c]^2}\right) -$$
$$\left(4\,C\,\text{Cos}[c + d\,x]^{5/2}\,\text{Csc}[c]\,\text{HypergeometricPFQ}\left[\left\{\frac{1}{4},\,\frac{1}{2}\right\},\,\left\{\frac{5}{4}\right\},\,\text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]^2\right]\right.$$
$$\left(C + B\,\text{Sec}[c + d\,x] + A\,\text{Sec}[c + d\,x]^2\right)\,\text{Sec}[d\,x - \text{ArcTan}[\text{Cot}[c]]]$$
$$\sqrt{1 - \text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}\;\sqrt{-\sqrt{1 + \text{Cot}[c]^2}\;\text{Sin}[c]\,\text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}$$
$$\left.\sqrt{1 + \text{Sin}[d\,x - \text{ArcTan}[\text{Cot}[c]]]}\right)\Big/$$
$$\left(d\,\sqrt{b\,\text{Cos}[c + d\,x]}\,\left(2\,A + C + 2\,B\,\text{Cos}[c + d\,x] + C\,\text{Cos}[2\,c + 2\,d\,x]\right)\,\sqrt{1 + \text{Cot}[c]^2}\right) +$$

$$\left(2\,B\,\text{Cos}[c+d\,x]^{5/2}\,\text{Csc}[c]\,\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\right.$$
$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{4}\right\},\left\{\frac{3}{4}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$
$$\left.\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\right)\Big/\left(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\right.$$
$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}$$
$$\left.\sqrt{1+\text{Tan}[c]^2}\right)-\left(\frac{\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]}{\sqrt{1+\text{Tan}[c]^2}}+\right.$$
$$\left.\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}\right)\Big/$$
$$\left.\left.\left(\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\right)\right)\right)\Big/$$
$$\left.\left(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)\right)$$

Problem 283: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 4, 116 leaves, 7 steps):

$$-\frac{2\,(A-C)\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\text{EllipticE}\left[\frac{1}{2}\,(c+d\,x),2\right]}{b^3\,d\,\sqrt{\text{Cos}[c+d\,x]}}+$$
$$\frac{2\,B\,\sqrt{\text{Cos}[c+d\,x]}\,\text{EllipticF}\left[\frac{1}{2}\,(c+d\,x),2\right]}{b^2\,d\,\sqrt{b\,\text{Cos}[c+d\,x]}}+\frac{2\,A\,\text{Sin}[c+d\,x]}{b^2\,d\,\sqrt{b\,\text{Cos}[c+d\,x]}}$$

Result (type 5, 807 leaves):

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

$$\left(\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$

$$\Big(4\,B\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\text{HypergeometricPFQ}\Big[\Big\{\frac{1}{4},\frac{1}{2}\Big\},\Big\{\frac{5}{4}\Big\},\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\Big]$$

$$\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\,\text{Sec}[d\,x-\text{ArcTan}[\text{Cot}[c]]]$$

$$\sqrt{1-\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\,\sqrt{-\sqrt{1+\text{Cot}[c]^2}\,\text{Sin}[c]\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}$$

$$\sqrt{1+\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]}\Big)\Big/$$

$$\left(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\,\sqrt{1+\text{Cot}[c]^2}\right)+$$

$$\Big(2\,A\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)$$

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

$$\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\Big)\Big/\Big(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}$$

$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\,\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}$$

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

$$\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}\Big)\Big/$$

$$\left(\sqrt{\text{Cos}[c]\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\sqrt{1+\text{Tan}[c]^2}}\right)\Big)\Big)\Big/$$

$$\left(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$

$$\Big(2\,C\,\text{Cos}[c+d\,x]^{3/2}\,\text{Csc}[c]\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)$$

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

$$\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\,\text{Tan}[c]\Big)\Big/\Big(\sqrt{1-\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}$$

$$\sqrt{1+\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]}\ \sqrt{\text{Cos}[c]\ \text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\ \sqrt{1+\text{Tan}[c]^2}}$$

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

$$\frac{2\,\text{Cos}[c]^2\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\ \sqrt{1+\text{Tan}[c]^2}}{\text{Cos}[c]^2+\text{Sin}[c]^2}\Bigg)\Big/$$

$$\Bigg(\sqrt{\text{Cos}[c]\ \text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]\ \sqrt{1+\text{Tan}[c]^2}}\,\Bigg)\Bigg)\Bigg)\Big/$$

$$\Bigg(d\,\sqrt{b\,\text{Cos}[c+d\,x]}\ \left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\Bigg)$$

Problem 296: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{b\,\text{Cos}[c+d\,x]}\ \left(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)}{\text{Cos}[c+d\,x]^{11/2}}\,dx$$

Optimal (type 3, 193 leaves, 7 steps):

$$\frac{(3\,A+4\,C)\ \text{ArcTanh}[\text{Sin}[c+d\,x]]\ \sqrt{b\,\text{Cos}[c+d\,x]}}{8\,d\,\sqrt{\text{Cos}[c+d\,x]}}+$$

$$\frac{A\,\sqrt{b\,\text{Cos}[c+d\,x]}\ \text{Sin}[c+d\,x]}{4\,d\,\text{Cos}[c+d\,x]^{9/2}}+\frac{(3\,A+4\,C)\ \sqrt{b\,\text{Cos}[c+d\,x]}\ \text{Sin}[c+d\,x]}{8\,d\,\text{Cos}[c+d\,x]^{5/2}}+$$

$$\frac{B\,\sqrt{b\,\text{Cos}[c+d\,x]}\ \text{Sin}[c+d\,x]}{d\,\text{Cos}[c+d\,x]^{3/2}}+\frac{B\,\sqrt{b\,\text{Cos}[c+d\,x]}\ \text{Sin}[c+d\,x]^3}{3\,d\,\text{Cos}[c+d\,x]^{7/2}}$$

Result (type 3, 609 leaves):

$$\frac{(-3A-4C)\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]}{8\,d\sqrt{\mathrm{Cos}[c+d\,x]}}+$$

$$\frac{(3A+4C)\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]}{8\,d\sqrt{\mathrm{Cos}[c+d\,x]}}+$$

$$\frac{A\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{16\,d\sqrt{\mathrm{Cos}[c+d\,x]}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+$$

$$\frac{(9A+4B+12C)\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{48\,d\sqrt{\mathrm{Cos}[c+d\,x]}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+$$

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

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

$$\frac{A\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{16\,d\sqrt{\mathrm{Cos}[c+d\,x]}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+$$

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

$$\frac{(-9A-4B-12C)\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{48\,d\sqrt{\mathrm{Cos}[c+d\,x]}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+$$

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

Problem 305: Result more than twice size of optimal antiderivative.

$$\int\frac{(b\,\mathrm{Cos}[c+d\,x])^{3/2}\left(A+B\,\mathrm{Cos}[c+d\,x]+C\,\mathrm{Cos}[c+d\,x]^2\right)}{\mathrm{Cos}[c+d\,x]^{13/2}}\,dx$$

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

$$\frac{b\,(3A+4C)\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{8\,d\sqrt{\mathrm{Cos}[c+d\,x]}}+$$

$$\frac{A\,b\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Sin}[c+d\,x]}{4\,d\,\mathrm{Cos}[c+d\,x]^{9/2}}+\frac{b\,(3A+4C)\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Sin}[c+d\,x]}{8\,d\,\mathrm{Cos}[c+d\,x]^{5/2}}+$$

$$\frac{b\,B\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Sin}[c+d\,x]}{d\,\mathrm{Cos}[c+d\,x]^{3/2}}+\frac{b\,B\sqrt{b\,\mathrm{Cos}[c+d\,x]}\ \mathrm{Sin}[c+d\,x]^3}{3\,d\,\mathrm{Cos}[c+d\,x]^{7/2}}$$

Result (type 3, 609 leaves) :

$$\left((-3A-4C)\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)\Big/\left(8\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\right)+\left((3A+4C)\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)\Big/\left(8\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\right)+\frac{A\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}}{16\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+\frac{(9A+4B+12C)\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}}{48\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+\frac{B\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{6\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}+\frac{2B\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{3\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}-\frac{A\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}}{16\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+\frac{B\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{6\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}+\frac{(-9A-4B-12C)\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}}{48\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+\frac{2B\,(b\,\mathrm{Cos}[c+d\,x])^{3/2}\,\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{3\,d\,\mathrm{Cos}[c+d\,x]^{3/2}\left(\mathrm{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\mathrm{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}$$

Problem 314: Result more than twice size of optimal antiderivative.

$$\int\frac{(b\,\mathrm{Cos}[c+d\,x])^{5/2}\,\left(A+B\,\mathrm{Cos}[c+d\,x]+C\,\mathrm{Cos}[c+d\,x]^2\right)}{\mathrm{Cos}[c+d\,x]^{15/2}}\,dx$$

Optimal (type 3, 208 leaves, 7 steps) :

$$\frac{b^2\,(3A+4C)\,\mathrm{ArcTanh}[\mathrm{Sin}[c+d\,x]]\,\sqrt{b\,\mathrm{Cos}[c+d\,x]}}{8\,d\,\sqrt{\mathrm{Cos}[c+d\,x]}}+\frac{A\,b^2\,\sqrt{b\,\mathrm{Cos}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{4\,d\,\mathrm{Cos}[c+d\,x]^{9/2}}+\frac{b^2\,(3A+4C)\,\sqrt{b\,\mathrm{Cos}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{8\,d\,\mathrm{Cos}[c+d\,x]^{5/2}}+\frac{b^2\,B\,\sqrt{b\,\mathrm{Cos}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]}{d\,\mathrm{Cos}[c+d\,x]^{3/2}}+\frac{b^2\,B\,\sqrt{b\,\mathrm{Cos}[c+d\,x]}\,\mathrm{Sin}[c+d\,x]^3}{3\,d\,\mathrm{Cos}[c+d\,x]^{7/2}}$$

Result (type 3, 609 leaves) :

$$\left((-3A-4C)\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)\Big/\left(8\,d\,\text{Cos}[c+d\,x]^{5/2}\right)+$$
$$\left((3A+4C)\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)\Big/\left(8\,d\,\text{Cos}[c+d\,x]^{5/2}\right)+$$
$$\frac{A\,(b\,\text{Cos}[c+d\,x])^{5/2}}{16\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+$$
$$\frac{(9A+4B+12C)\,(b\,\text{Cos}[c+d\,x])^{5/2}}{48\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+$$
$$\frac{B\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{6\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}+$$
$$\frac{2\,B\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{3\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]-\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}-$$
$$\frac{A\,(b\,\text{Cos}[c+d\,x])^{5/2}}{16\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^4}+$$
$$\frac{B\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{6\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^3}+$$
$$\frac{(-9A-4B-12C)\,(b\,\text{Cos}[c+d\,x])^{5/2}}{48\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}+$$
$$\frac{2\,B\,(b\,\text{Cos}[c+d\,x])^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]}{3\,d\,\text{Cos}[c+d\,x]^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)}$$

Problem 322: Result more than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2}{\text{Cos}[c+d\,x]^{9/2}\,\sqrt{b\,\text{Cos}[c+d\,x]}}\,dx$$

Optimal (type 3, 193 leaves, 7 steps):

$$\frac{(3A+4C)\,\text{ArcTanh}[\text{Sin}[c+d\,x]]\,\sqrt{\text{Cos}[c+d\,x]}}{8\,d\,\sqrt{b\,\text{Cos}[c+d\,x]}}+$$
$$\frac{A\,\text{Sin}[c+d\,x]}{4\,d\,\text{Cos}[c+d\,x]^{7/2}\,\sqrt{b\,\text{Cos}[c+d\,x]}}+\frac{(3A+4C)\,\text{Sin}[c+d\,x]}{8\,d\,\text{Cos}[c+d\,x]^{3/2}\,\sqrt{b\,\text{Cos}[c+d\,x]}}+$$
$$\frac{B\,\text{Sin}[c+d\,x]}{d\,\sqrt{\text{Cos}[c+d\,x]}\,\sqrt{b\,\text{Cos}[c+d\,x]}}+\frac{B\,\text{Sin}[c+d\,x]^3}{3\,d\,\text{Cos}[c+d\,x]^{5/2}\,\sqrt{b\,\text{Cos}[c+d\,x]}}$$

Result (type 3, 609 leaves):

$$\frac{(-3A-4C)\sqrt{\text{Cos}[c+dx]}\ \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right]}{8d\sqrt{b\,\text{Cos}[c+dx]}}+$$
$$\frac{(3A+4C)\sqrt{\text{Cos}[c+dx]}\ \text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right]}{8d\sqrt{b\,\text{Cos}[c+dx]}}+$$
$$\frac{A\sqrt{\text{Cos}[c+dx]}}{16d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^4}+$$
$$\frac{(9A+4B+12C)\sqrt{\text{Cos}[c+dx]}}{48d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^2}+$$
$$\frac{B\sqrt{\text{Cos}[c+dx]}\ \text{Sin}\left[\frac{1}{2}(c+dx)\right]}{6d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^3}+$$
$$\frac{2B\sqrt{\text{Cos}[c+dx]}\ \text{Sin}\left[\frac{1}{2}(c+dx)\right]}{3d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)}-$$
$$\frac{A\sqrt{\text{Cos}[c+dx]}}{16d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^4}+$$
$$\frac{B\sqrt{\text{Cos}[c+dx]}\ \text{Sin}\left[\frac{1}{2}(c+dx)\right]}{6d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^3}+$$
$$\frac{(-9A-4B-12C)\sqrt{\text{Cos}[c+dx]}}{48d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^2}+$$
$$\frac{2B\sqrt{\text{Cos}[c+dx]}\ \text{Sin}\left[\frac{1}{2}(c+dx)\right]}{3d\sqrt{b\,\text{Cos}[c+dx]}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)}$$

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

$$\int\frac{A+B\,\text{Cos}[c+dx]+C\,\text{Cos}[c+dx]^2}{\text{Cos}[c+dx]^{7/2}\,(b\,\text{Cos}[c+dx])^{3/2}}\,dx$$

Optimal (type 3, 208 leaves, 7 steps):

$$\frac{(3A+4C)\,\text{ArcTanh}[\text{Sin}[c+dx]]\,\sqrt{\text{Cos}[c+dx]}}{8bd\sqrt{b\,\text{Cos}[c+dx]}}+$$
$$\frac{A\,\text{Sin}[c+dx]}{4bd\,\text{Cos}[c+dx]^{7/2}\sqrt{b\,\text{Cos}[c+dx]}}+\frac{(3A+4C)\,\text{Sin}[c+dx]}{8bd\,\text{Cos}[c+dx]^{3/2}\sqrt{b\,\text{Cos}[c+dx]}}+$$
$$\frac{B\,\text{Sin}[c+dx]}{bd\sqrt{\text{Cos}[c+dx]}\ \sqrt{b\,\text{Cos}[c+dx]}}+\frac{B\,\text{Sin}[c+dx]^3}{3bd\,\text{Cos}[c+dx]^{5/2}\sqrt{b\,\text{Cos}[c+dx]}}$$

Result (type 3, 609 leaves):

$$\frac{(-3A-4C)\,\text{Cos}[c+d x]^{3/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{8 d\,(b\,\text{Cos}[c+d x])^{3/2}}+\frac{(3A+4C)\,\text{Cos}[c+d x]^{3/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]}{8 d\,(b\,\text{Cos}[c+d x])^{3/2}}+$$
$$\frac{A\,\text{Cos}[c+d x]^{3/2}}{16 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}+\frac{(9A+4B+12C)\,\text{Cos}[c+d x]^{3/2}}{48 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}+$$
$$\frac{B\,\text{Cos}[c+d x]^{3/2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]}{6 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3}+\frac{2B\,\text{Cos}[c+d x]^{3/2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]}{3 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}-$$
$$\frac{A\,\text{Cos}[c+d x]^{3/2}}{16 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^4}+\frac{B\,\text{Cos}[c+d x]^{3/2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]}{6 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^3}+$$
$$\frac{(-9A-4B-12C)\,\text{Cos}[c+d x]^{3/2}}{48 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}+\frac{2B\,\text{Cos}[c+d x]^{3/2}\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]}{3 d\,(b\,\text{Cos}[c+d x])^{3/2}\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}$$

Problem 338: Result more than twice size of optimal antiderivative.

$$\int \frac{A+B\,\text{Cos}[c+d x]+C\,\text{Cos}[c+d x]^2}{\text{Cos}[c+d x]^{5/2}\,(b\,\text{Cos}[c+d x])^{5/2}}\,dx$$

Optimal (type 3, 208 leaves, 7 steps):

$$\frac{(3A+4C)\,\text{ArcTanh}[\text{Sin}[c+d x]]\,\sqrt{\text{Cos}[c+d x]}}{8 b^2 d\,\sqrt{b\,\text{Cos}[c+d x]}}+$$
$$\frac{A\,\text{Sin}[c+d x]}{4 b^2 d\,\text{Cos}[c+d x]^{7/2}\,\sqrt{b\,\text{Cos}[c+d x]}}+\frac{(3A+4C)\,\text{Sin}[c+d x]}{8 b^2 d\,\text{Cos}[c+d x]^{3/2}\,\sqrt{b\,\text{Cos}[c+d x]}}+$$
$$\frac{B\,\text{Sin}[c+d x]}{b^2 d\,\sqrt{\text{Cos}[c+d x]}\,\sqrt{b\,\text{Cos}[c+d x]}}+\frac{B\,\text{Sin}[c+d x]^3}{3 b^2 d\,\text{Cos}[c+d x]^{5/2}\,\sqrt{b\,\text{Cos}[c+d x]}}$$

Result (type 3, 609 leaves):

$$\frac{(-3A-4C)\,\text{Cos}[c+dx]^{5/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right]}{8d\,(b\,\text{Cos}[c+dx])^{5/2}}+$$
$$\frac{(3A+4C)\,\text{Cos}[c+dx]^{5/2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right]}{8d\,(b\,\text{Cos}[c+dx])^{5/2}}+$$
$$\frac{A\,\text{Cos}[c+dx]^{5/2}}{16d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^4}+$$
$$\frac{(9A+4B+12C)\,\text{Cos}[c+dx]^{5/2}}{48d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^2}+$$
$$\frac{B\,\text{Cos}[c+dx]^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+dx)\right]}{6d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^3}+$$
$$\frac{2B\,\text{Cos}[c+dx]^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+dx)\right]}{3d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]-\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)}-$$
$$\frac{A\,\text{Cos}[c+dx]^{5/2}}{16d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^4}+$$
$$\frac{B\,\text{Cos}[c+dx]^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+dx)\right]}{6d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^3}+$$
$$\frac{(-9A-4B-12C)\,\text{Cos}[c+dx]^{5/2}}{48d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)^2}+$$
$$\frac{2B\,\text{Cos}[c+dx]^{5/2}\,\text{Sin}\left[\frac{1}{2}(c+dx)\right]}{3d\,(b\,\text{Cos}[c+dx])^{5/2}\left(\text{Cos}\left[\frac{1}{2}(c+dx)\right]+\text{Sin}\left[\frac{1}{2}(c+dx)\right]\right)}$$

Problem 354: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Cos}[c+dx]+C\,\text{Cos}[c+dx]^2\right)\text{Sec}[c+dx]}{(b\,\text{Cos}[c+dx])^{1/3}}\,dx$$

Optimal (type 5, 149 leaves, 5 steps):

$$\frac{3\,A\,\text{Sin}[c+d\,x]}{d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}}-\left(3\,B\,\left(b\,\text{Cos}[c+d\,x]\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{2},\frac{4}{3},\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(2\,b\,d\,\sqrt{\text{Sin}[c+d\,x]^2}\right)+\left(3\,\left(2\,A-C\right)\,\left(b\,\text{Cos}[c+d\,x]\right)^{5/3}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{11}{6},\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(5\,b^2\,d\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 779 leaves):

$$\left(\text{Cos}[c+d\,x]^2\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\left(-\frac{3\,\left(-4\,A+C+C\,\text{Cos}[2\,c]\right)\,\text{Csc}[c]\,\text{Sec}[c]}{2\,d}+\frac{6\,A\,\text{Sec}[c]\,\text{Sec}[c+d\,x]\,\text{Sin}[d\,x]}{d}\right)\right)\Big/\left(\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-\left(2\,B\,\text{Cos}[c+d\,x]^{4/3}\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right)\Big/\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\,\left(\text{Cos}[c]\,\text{Cos}[d\,x]-\text{Sin}[c]\,\text{Sin}[d\,x]\right)^{1/3}\,\left(\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right)^{1/3}\right)+$$

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

$$\left(2\,C\,\text{Cos}[c+d\,x]^{4/3}\,\text{Csc}[c]\,\left(B+C\,\text{Cos}[c+d\,x]+A\,\text{Sec}[c+d\,x]\right)\right.$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{6}\right\},\left\{\frac{5}{6}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

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

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

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

$$\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)$$

Problem 355: Result more than twice size of optimal antiderivative.

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

Optimal (type 5, 145 leaves, 5 steps):

$$\frac{3\,A\,b\,\text{Sin}[c+d\,x]}{4\,d\,\left(b\,\text{Cos}[c+d\,x]\right)^{4/3}}+\frac{3\,B\,\text{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{2},\frac{5}{6},\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]}{d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\sqrt{\text{Sin}[c+d\,x]^2}}-$$

$$\left(3\,\left(A+4\,C\right)\,\left(b\,\text{Cos}[c+d\,x]\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{1}{2},\frac{4}{3},\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/$$

$$\left(8\,b\,d\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 5, 699 leaves):

$$\left(\text{Cos}[c+d\,x]^3\,\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\,\left(\frac{6\,B\,\text{Csc}[c]\,\text{Sec}[c]}{d}+\right.\right.$$

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

$$\left(\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$

$$\left(A\,\text{Cos}[c+d\,x]^{7/3}\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right.$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{3}{2},\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\left.\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right)\Big/$$

$$\left(2\,d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right.$$

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

$$\left(2\,C\,\text{Cos}[c+d\,x]^{7/3}\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right.$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{2}{3},\,\frac{3}{2},\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\left.\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\,\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right)\Big/$$

$$\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right.$$

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

$$\left(4\,B\,\text{Cos}[c+d\,x]^{7/3}\,\text{Csc}[c]\,\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\right.$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},\,-\frac{1}{6}\right\},\,\left\{\frac{5}{6}\right\},\,\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

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

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

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

$$\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\,\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)$$

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

$$\int \frac{\left(A + B\,\text{Cos}[c + d\,x] + C\,\text{Cos}[c + d\,x]^2\right)\,\text{Sec}[c + d\,x]}{\left(b\,\text{Cos}[c + d\,x]\right)^{4/3}}\,dx$$

Optimal (type 5, 147 leaves, 5 steps):

$$\frac{3\,A\,\text{Sin}[c + d\,x]}{4\,d\,\left(b\,\text{Cos}[c + d\,x]\right)^{4/3}} + \frac{3\,B\,\text{Hypergeometric2F1}\left[-\frac{1}{6}, \frac{1}{2}, \frac{5}{6}, \text{Cos}[c + d\,x]^2\right]\,\text{Sin}[c + d\,x]}{b\,d\,\left(b\,\text{Cos}[c + d\,x]\right)^{1/3}\,\sqrt{\text{Sin}[c + d\,x]^2}} - \left(3\,(A + 4\,C)\,\left(b\,\text{Cos}[c + d\,x]\right)^{2/3}\,\text{Hypergeometric2F1}\left[\frac{1}{3}, \frac{1}{2}, \frac{4}{3}, \text{Cos}[c + d\,x]^2\right]\,\text{Sin}[c + d\,x]\right) \Big/ \left(8\,b^2\,d\,\sqrt{\text{Sin}[c + d\,x]^2}\right)$$

Result (type 5, 703 leaves):

$$\frac{1}{b}\left(\left(\text{Cos}[c+d\,x]^3\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\left(\frac{6\,B\,\text{Csc}[c]\,\text{Sec}[c]}{d}+\right.\right.\right.$$

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

$$\left(\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)-$$

$$\left(A\,\text{Cos}[c+d\,x]^{7/3}\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right.$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\left.\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right)\Big/$$

$$\left(2\,d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right.$$

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

$$\left(2\,C\,\text{Cos}[c+d\,x]^{7/3}\,\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right.$$

$$\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{2}{3},\frac{3}{2},\text{Cos}[d\,x-\text{ArcTan}[\text{Cot}[c]]]^2\right]$$

$$\left.\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\text{Sin}[d\,x-\text{ArcTan}[\text{Cot}[c]]]\right)\Big/$$

$$\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right.$$

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

$$\left(4\,B\,\text{Cos}[c+d\,x]^{7/3}\,\text{Csc}[c]\,\left(C+B\,\text{Sec}[c+d\,x]+A\,\text{Sec}[c+d\,x]^2\right)\right.$$

$$\left(\left(\text{HypergeometricPFQ}\left[\left\{-\frac{1}{2},-\frac{1}{6}\right\},\left\{\frac{5}{6}\right\},\text{Cos}[d\,x+\text{ArcTan}[\text{Tan}[c]]]^2\right]\right.\right.$$

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

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

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

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

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

$$\left.\left(d\,\left(b\,\text{Cos}[c+d\,x]\right)^{1/3}\left(2\,A+C+2\,B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[2\,c+2\,d\,x]\right)\right)\right)$$

Problem 366: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

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

Optimal (type 5, 229 leaves, 5 steps):

$$\frac{3 C \text{Cos}[c+d x]^{1+m} \text{Sin}[c+d x]}{d (5+3 m) (b \text{Cos}[c+d x])^{1/3}}-\left(3 (C (2+3 m)+A (5+3 m)) \text{Cos}[c+d x]^{1+m} \text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6} (2+3 m),\frac{1}{6} (8+3 m),\text{Cos}[c+d x]^2\right] \text{Sin}[c+d x]\right)\Big/\left(d (2+3 m) (5+3 m) (b \text{Cos}[c+d x])^{1/3} \sqrt{\text{Sin}[c+d x]^2}\right)-\left(3 B \text{Cos}[c+d x]^{2+m} \text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6} (5+3 m),\frac{1}{6} (11+3 m),\text{Cos}[c+d x]^2\right] \text{Sin}[c+d x]\right)\Big/\left(d (5+3 m) (b \text{Cos}[c+d x])^{1/3} \sqrt{\text{Sin}[c+d x]^2}\right)$$

Result (type 6, 7630 leaves):

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

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

$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

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

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

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.\right.$$

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

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

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

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

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.\right.$$

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

$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

$$2\left((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

$$\left.(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$

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

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

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

$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

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

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

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg) + \Bigg(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.$$

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

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

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

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

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg) - \Bigg(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.$$

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

$$\Bigg(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\,\Bigg((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$

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

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

$$\Bigg(\Bigg(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)\Bigg/$$

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

$$2\,\Bigg(-(8+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg) + \Bigg(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)\Bigg/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\,\Bigg(-(8+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$(1-3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg) - \Bigg(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^4\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$2\left(\left(8+3\,m\right)\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-1+3\,m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big)-$$

$$\frac{2}{5}\left(\frac{8}{3}+m\right)\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^{-\frac{1}{3}+m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{\frac{11}{3}+m}$$

$$\Big(\Big(45\left(A+B+C\right)\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\Big)\Big/$$

$$\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$2\left(-\left(8+3\,m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left.\left(1-3\,m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)+\Big(50\left(A-C\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$2\left(-\left(8+3\,m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left.\left(1-3\,m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)-\Big(21\left(A-B+C\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^4\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$2\left(\left(8+3\,m\right)\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-1+3\,m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big)+$$

$$\frac{2}{5}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{1}{3}+m}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{\frac{8}{3}+m}$$

$$\Bigg(\Bigg(45\,(A+B+C)\Bigg(-\frac{1}{3}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{3}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$2\Bigg(-(8+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+\Bigg(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg/$$
$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$2\Bigg(-(8+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(1-3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)+\Bigg(50\,(A-C)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$
$$\Bigg(-\frac{3}{5}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Bigg)\Bigg)\Bigg/$$
$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$2\Bigg(-(8+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(1-3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Bigg)$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)-\Bigg(42\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^3\Bigg)\Bigg/$$

$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\left(21\,(A-B+C)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\right.$$
$$\left(-\frac{5}{7}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/$$
$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-$$
$$\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left(2\left(-(8+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.\right.$$
$$\left.(1-3\,m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+9\left(-\frac{1}{3}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{1}{3}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-(8+3\,m)\left(-\frac{3}{5}\left(\frac{11}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{14}{3}+m,\right.\right.\right.$$
$$\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\Big[$$
$$\frac{1}{2}(c+d\,x)\Big]+\frac{3}{5}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$(1-3\,m)\left(-\frac{3}{5}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{3}{5}\left(\frac{4}{3}-m\right)\mathrm{AppellF1}\Big[\frac{5}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(9\,\mathrm{AppellF1}\Big[\frac{1}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]+$$
$$2\Big(-(8+3m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]+(1-3m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big)^2-$$
$$\Big(50\,(A-C)\,\mathrm{AppellF1}\Big[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\Big(2\Big(-(8+3m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]+$$
$$(1-3m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\Big)$$
$$\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+15\Big(-\frac{3}{5}\left(\frac{8}{3}+m\right)\mathrm{AppellF1}\Big[\frac{5}{2},\frac{1}{3}-m,$$
$$\frac{11}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{3}{5}\left(\frac{1}{3}-m\right)\mathrm{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},$$
$$\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)+$$
$$2\,\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big(-(8+3m)\Big(-\frac{5}{7}\left(\frac{11}{3}+m\right)\mathrm{AppellF1}\Big[\frac{7}{2},\frac{1}{3}-m,\frac{14}{3}+m,$$
$$\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\Big[$$
$$\frac{1}{2}(c+dx)\Big]+\frac{5}{7}\left(\frac{1}{3}-m\right)\mathrm{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)+$$
$$(1-3m)\Big(-\frac{5}{7}\left(\frac{8}{3}+m\right)\mathrm{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{5}{7}\left(\frac{4}{3}-m\right)\mathrm{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2,$$
$$-\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Big]\,\mathrm{Sec}\left[\frac{1}{2}(c+dx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+dx)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left(-(8+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(1-3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2+$$
$$\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4$$
$$\left(2\left((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.\right.$$
$$(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-21\left(-\frac{5}{7}\left(\frac{8}{3}+m\right)\right.$$
$$\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((8+3\,m)\left(-\frac{7}{9}\left(\frac{11}{3}+m\right)\text{AppellF1}\left[\frac{9}{2},\frac{1}{3}-m,\frac{14}{3}+m,\right.\right.\right.$$
$$\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}$$
$$(c+d\,x)\right]+\frac{7}{9}\left(\frac{1}{3}-m\right)\text{AppellF1}\left[\frac{9}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$(-1+3\,m)\left(-\frac{7}{9}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{9}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{7}{9}\left(\frac{4}{3}-m\right)\text{AppellF1}\left[\frac{9}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$
$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$2\left((8+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\;\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)^2\Big)\Big)\Big)$$

Problem 367: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{\text{Cos}[c+d\,x]^m\left(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)}{(b\,\text{Cos}[c+d\,x])^{2/3}}\,dx$$

Optimal (type 5, 227 leaves, 5 steps):

$$\frac{3\,C\,\text{Cos}[c+d\,x]^{1+m}\,\text{Sin}[c+d\,x]}{d\,(4+3\,m)\,(b\,\text{Cos}[c+d\,x])^{2/3}}-\Big(3\,(C+3\,C\,m+A\,(4+3\,m))\,\text{Cos}[c+d\,x]^{1+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6}(1+3\,m),\frac{1}{6}(7+3\,m),\text{Cos}[c+d\,x]^2\right]\text{Sin}[c+d\,x]\Big)\Big/\Big(d\,(1+3\,m)\,(4+3\,m)\,(b\,\text{Cos}[c+d\,x])^{2/3}\sqrt{\text{Sin}[c+d\,x]^2}\Big)-\Big(3\,B\,\text{Cos}[c+d\,x]^{2+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6}(4+3\,m),\frac{1}{6}(10+3\,m),\text{Cos}[c+d\,x]^2\right]\text{Sin}[c+d\,x]\Big)\Big/\Big(d\,(4+3\,m)\,(b\,\text{Cos}[c+d\,x])^{2/3}\sqrt{\text{Sin}[c+d\,x]^2}\Big)$$

Result (type 6, 7613 leaves):

$$\Big(2\,\text{Cos}[c+d\,x]^{2/3}\Big(\frac{1}{2}B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Cos}[2\,(c+d\,x)]-\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[2\,(c+d\,x)]+\text{Sec}[c+d\,x]\Big(\Big(A\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}+\frac{1}{2}C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\Big)\text{Cos}[2\,(c+d\,x)]^2-\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Cos}[3\,(c+d\,x)]\,\text{Sin}[2\,(c+d\,x)]-\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Cos}[4\,(c+d\,x)]\,\text{Sin}[2\,(c+d\,x)]+\frac{1}{2}B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[c+d\,x]\,\text{Sin}[2\,(c+d\,x)]+\Big(A\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}+\frac{1}{2}C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\Big)\text{Sin}[2\,(c+d\,x)]^2+\text{Cos}[2\,(c+d\,x)]\Big(\frac{1}{4}C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}+\frac{1}{2}B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Cos}[3\,(c+d\,x)]+\frac{1}{4}C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Cos}[4\,(c+d\,x)]+\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[c+d\,x]+\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[3\,(c+d\,x)]+\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[4\,(c+d\,x)]\Big)+\text{Sin}[2\,(c+d\,x)]\Big(-\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}+\frac{1}{2}B\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[3\,(c+d\,x)]+\frac{1}{4}C\,\text{Cos}[c+d\,x]^{\frac{1}{3}+m}\,\text{Sin}[4\,(c+d\,x)]\Big)\Big)\Big)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\left(1-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{-\frac{2}{3}+m}\left(\frac{1}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{\frac{7}{3}+m}$$

$$\left(\left(45(A+B+C)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left((7+3m)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-2+3m)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+\left(50(A-C)\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\right.\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(15\,\mathrm{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left((7+3m)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-2+3m)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(21(A-B+C)\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\right.\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^4\right)\Big/$$

$$\left(-21\,\mathrm{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$2\left((7+3m)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-2+3m)\,\mathrm{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\left.\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right)\Big/\left(5\,d\,(b\,\mathrm{Cos}[c+d x])^{2/3}\right.$$

$$\left(-\frac{2}{5}\left(-\frac{2}{3}+m\right)\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\left(1-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{-\frac{5}{3}+m}\right.$$

$$\left(\frac{1}{1+\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{\frac{7}{3}+m}$$

$$\left(\left(45(A+B+C)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left(\left(7+3m\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3m\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)+\Big(50\left(A-C\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big/$$
$$\Big(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]-$$
$$2\left(\left(7+3m\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3m\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)-\Big(21\left(A-B+C\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^4\Big)\Big/$$
$$\Big(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$
$$2\left(\left(7+3m\right)\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left(-2+3m\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big)+$$

$$\frac{1}{5}\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right)^{-\frac{2}{3}+m}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2}\right)^{\frac{7}{3}+m}$$
$$\Big(\Big(45\left(A+B+C\right)\text{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\Big)\Big/$$
$$\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]-$$
$$2\left(\left(7+3m\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3m\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\right)$$
$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)+\Big(50\left(A-C\right)\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)\Big/$$
$$\Big(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]-$$
$$2\left(\left(7+3m\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Bigg)-\Bigg(21\,\left(A-B+C\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^4\Bigg)\Bigg/$$

$$\Bigg(-21\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$2\,\Bigg(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Bigg)\Bigg)-$$

$$\frac{2}{5}\,\left(\frac{7}{3}+m\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{2}{3}+m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{10}{3}+m}$$

$$\Bigg(\Bigg(45\,\left(A+B+C\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Bigg)\Bigg/$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-$$

$$2\,\Bigg(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Bigg)+\Bigg(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Bigg)\Bigg/$$

$$\Bigg(15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-$$

$$2\,\Bigg(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Bigg)-\Bigg(21\,\left(A-B+C\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^4\Bigg)\Bigg/$$

$$\Bigg(-21\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$2\,\Bigg(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+$$

$$\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)+$$

$$\frac{2}{5}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{2}{3}+m}\,\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{7}{3}+m}$$

$$\left(\left(\left(45\,\left(A+B+C\right)\right.\right.\right.$$
$$\left(-\frac{1}{3}\,\left(\frac{7}{3}+m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+\frac{1}{3}\,\left(\frac{2}{3}-m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\right)\Big/$$
$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$
$$2\,\left(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+\left(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$
$$2\,\left(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+\left(50\,\left(A-C\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right.$$
$$\left(-\frac{3}{5}\,\left(\frac{7}{3}+m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+\frac{3}{5}\,\left(\frac{2}{3}-m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$
$$2\,\left(\left(7+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(-2+3\,m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-\Bigg(42(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^3\Bigg)\Big/$$

$$\Bigg(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\Bigg((7+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-2+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-\Bigg(21(A-B+C)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^4$$

$$\Bigg(-\frac{5}{7}\left(\frac{7}{3}+m\right)\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{5}{7}\left(\frac{2}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Big/$$

$$\Bigg(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+2\Bigg((7+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-2+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-$$

$$\Bigg(45(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\Bigg(-2\Bigg((7+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-2+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+9\Bigg(-\frac{1}{3}\left(\frac{7}{3}+m\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{2}{3}-m\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)-$$

$$2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg((7+3m)\left(-\frac{3}{5}\left(\frac{10}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{13}{3}+m,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{3}{5}\left(\frac{2}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{3}-m,\frac{10}{3}+m,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Big)+$$

$$(-2+3\,m)\,\left(-\frac{3}{5}\,\left(\frac{7}{3}+m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{3}{5}\,\left(\frac{5}{3}-m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{8}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\right)\right)\Big/$$

$$\Big(9\,\text{AppellF1}\left[\frac{1}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]-$$

$$2\,\Big((7+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$

$$(-2+3\,m)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big)^2-$$

$$\Big(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{2}{3}-m,\,\frac{7}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$

$$\Big(-2\,\Big((7+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$

$$(-2+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\Big)\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+15\,\Big(-\frac{3}{5}\,\left(\frac{7}{3}+m\right)$$

$$\text{AppellF1}\left[\frac{5}{2},\,\frac{2}{3}-m,\,\frac{10}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+\frac{3}{5}\,\left(\frac{2}{3}-m\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{3}-m,\,\frac{7}{3}+m,\,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\Big)-$$

$$2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\Big((7+3\,m)\,\left(-\frac{5}{7}\,\left(\frac{10}{3}+m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{2}{3}-m,\,\frac{13}{3}+m,\right.\right.$$

$$\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\,(c+d\,x)\Big]+\frac{5}{7}\,\left(\frac{2}{3}-m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{3}-m,\,\frac{10}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+$$

$$(-2+3\,m)\,\left(-\frac{5}{7}\,\left(\frac{7}{3}+m\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{3}-m,\,\frac{10}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]+$$

$$\frac{5}{7}\left(\frac{5}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{8}{3}-m,\frac{7}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$
$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-\right.$$
$$2\left((7+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-2+3\,m)\,\text{AppellF1}\left[\frac{5}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2+$$
$$\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4$$
$$\left(2\left((7+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.\right.$$
$$(-2+3\,m)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-21\left(-\frac{5}{7}\left(\frac{7}{3}+m\right)\right.$$
$$\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{2}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((7+3\,m)\left(-\frac{7}{9}\left(\frac{10}{3}+m\right)\text{AppellF1}\left[\frac{9}{2},\frac{2}{3}-m,\frac{13}{3}+m,\right.\right.\right.$$
$$\left.\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}\right.$$
$$\left.(c+d\,x)\right]+\frac{7}{9}\left(\frac{2}{3}-m\right)\text{AppellF1}\left[\frac{9}{2},\frac{5}{3}-m,\frac{10}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+$$
$$(-2+3\,m)\left(-\frac{7}{9}\left(\frac{7}{3}+m\right)\text{AppellF1}\left[\frac{9}{2},\frac{5}{3}-m,\frac{10}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{7}{9}\left(\frac{5}{3}-m\right)\text{AppellF1}\left[\frac{9}{2},\frac{8}{3}-m,\frac{7}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$
$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{2}{3}-m,\frac{7}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$

$$2\left((7+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{2}{3}-m,\frac{10}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$(-2+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{3}-m,\frac{7}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\Bigg)\Bigg)$$

Problem 368: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{Cos}[c+d x]^m\left(A+B\,\text{Cos}[c+d x]+C\,\text{Cos}[c+d x]^2\right)}{\left(b\,\text{Cos}[c+d x]\right)^{4/3}}\,dx$$

Optimal (type 5, 235 leaves, 5 steps):

$$\frac{3\,C\,\text{Cos}[c+d x]^m\,\text{Sin}[c+d x]}{b\,d\,(2+3m)\,\left(b\,\text{Cos}[c+d x]\right)^{1/3}}-\left(3\,\left(C\,(1-3m)-A\,(2+3m)\right)\,\text{Cos}[c+d x]^m\right.$$
$$\left.\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6}(-1+3m),\frac{1}{6}(5+3m),\text{Cos}[c+d x]^2\right]\text{Sin}[c+d x]\right)\Big/$$
$$\left(b\,d\,(1-3m)\,(2+3m)\,\left(b\,\text{Cos}[c+d x]\right)^{1/3}\sqrt{\text{Sin}[c+d x]^2}\right)-$$
$$\left(3\,B\,\text{Cos}[c+d x]^{1+m}\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{6}(2+3m),\frac{1}{6}(8+3m),\text{Cos}[c+d x]^2\right]\text{Sin}[c+d x]\right)\Big/$$
$$\left(b\,d\,(2+3m)\,\left(b\,\text{Cos}[c+d x]\right)^{1/3}\sqrt{\text{Sin}[c+d x]^2}\right)$$

Result (type 6, 7623 leaves):

$$\left(2\,\text{Cos}[c+d x]^{4/3}\right.$$
$$\left(\text{Sec}[c+d x]\left(\frac{1}{2}B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Cos}[2(c+d x)]-\frac{1}{2}i\,B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Sin}[2(c+d x)]\right)+\right.$$
$$\text{Sec}[c+d x]^2\left(\left(\left(A\,\text{Cos}[c+d x]^{\frac{2}{3}+m}+\frac{1}{2}C\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\right)\text{Cos}[2(c+d x)]^2-\right.\right.$$
$$\frac{1}{2}i\,B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Cos}[3(c+d x)]\,\text{Sin}[2(c+d x)]-$$
$$\frac{1}{4}i\,C\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Cos}[4(c+d x)]\,\text{Sin}[2(c+d x)]+\frac{1}{2}B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Sin}[c+d x]$$
$$\text{Sin}[2(c+d x)]+\left(A\,\text{Cos}[c+d x]^{\frac{2}{3}+m}+\frac{1}{2}C\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\right)\text{Sin}[2(c+d x)]^2+$$
$$\text{Cos}[2(c+d x)]\left(\frac{1}{4}C\,\text{Cos}[c+d x]^{\frac{2}{3}+m}+\frac{1}{2}B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Cos}[3(c+d x)]+\right.$$
$$\frac{1}{4}C\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Cos}[4(c+d x)]+\frac{1}{2}i\,B\,\text{Cos}[c+d x]^{\frac{2}{3}+m}\,\text{Sin}[c+d x]+$$

$$\frac{1}{2}\,\mathrm{i}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\mathrm{Sin}\big[3\,(c+d\,x)\big]+\frac{1}{4}\,\mathrm{i}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\mathrm{Sin}\big[4\,(c+d\,x)\big]\Big)+$$

$$\mathrm{Sin}\big[2\,(c+d\,x)\big]\,\Big(-\frac{1}{4}\,\mathrm{i}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{2}{3}+m}+\frac{1}{2}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\mathrm{Sin}\big[3\,(c+d\,x)\big]+$$

$$\frac{1}{4}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{2}{3}+m}\,\mathrm{Sin}\big[4\,(c+d\,x)\big]\Big)\Big)\Big)$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\,\Big(1-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)^{-\frac{4}{3}+m}\,\left(\frac{1}{1+\mathrm{Tan}\big[\frac{1}{2}\,(c+d\,x)\big]^2}\right)^{\frac{5}{3}+m}$$

$$\Big(\Big(45\,(A+B+C)\,\mathrm{AppellF1}\Big[\frac{1}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\Big/$$

$$\Big(9\,\mathrm{AppellF1}\Big[\frac{1}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{3}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]-$$

$$2\,\Big((5+3\,m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$(-4+3\,m)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)+\Big(50\,(A-C)\,\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)\Big/$$

$$\Big(15\,\mathrm{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]-$$

$$2\,\Big((5+3\,m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{7}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$(-4+3\,m)\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)-\Big(21\,(A-B+C)\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^4\Big)\Big/$$

$$\Big(-21\,\mathrm{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$2\,\Big((5+3\,m)\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{9}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$(-4+3\,m)\,\mathrm{AppellF1}\Big[\frac{7}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{9}{2},\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)$$

$$\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)\Big)\Big/\Big(5\,d\,\big(b\,\mathrm{Cos}[c+d\,x]\big)^{4/3}$$

$$\Big(-\frac{2}{5}\,\Big(-\frac{4}{3}+m\Big)\,\mathrm{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\Big(1-\mathrm{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)^{-\frac{7}{3}+m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{\frac{5}{3}+m}$$

$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left((5+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-4+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big/$$

$$\left(15\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left((5+3m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-4+3m)\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\Big)\Big/$$

$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$2\left((5+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$(-4+3m)\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)+$$

$$\frac{1}{5}\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{-\frac{4}{3}+m}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{\frac{5}{3}+m}$$

$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\Big/\right.$$

$$\left(9\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$

$$2\left((5+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left.(-4+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]-$$

$$2\,\Big((5+3\,m)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]+$$

$$(-4+3\,m)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)-\Big(21\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]+$$

$$2\,\Big((5+3\,m)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]+$$

$$(-4+3\,m)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big)-$$

$$\frac{2}{5}\left(\frac{5}{3}+m\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{4}{3}+m}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{\frac{8}{3}+m}$$

$$\Big(\Big(45\,(A+B+C)\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\Big/$$

$$\Big(9\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]-$$

$$2\,\Big((5+3\,m)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]+$$

$$(-4+3\,m)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)+\Big(50\,(A-C)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]-$$

$$2\,\Big((5+3\,m)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{8}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]+$$

$$(-4+3\,m)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)-\Big(21\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{4}{3}-m,\,\frac{5}{3}+m,\,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$2\,\Big(\left(5+3\,m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\left(-4+3\,m\right)\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)\Big)+$$

$$\frac{2}{5}\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{4}{3}+m}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{\frac{5}{3}+m}$$

$$\Big(\Big(45\,(A+B+C)$$

$$\Big(-\frac{1}{3}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{3}\left(\frac{4}{3}-m\right)\text{AppellF1}\Big[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big/$$

$$\Big(9\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-$$

$$2\,\Big(\left(5+3\,m\right)\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\left(-4+3\,m\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)+\Big(50\,(A-C)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-$$

$$2\,\Big(\left(5+3\,m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$

$$\left(-4+3\,m\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big)+\Big(50\,(A-C)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\Big(-\frac{3}{5}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{4}{3}-m\right)\text{AppellF1}\Big[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]-$$

$$2\Big(\big(5+3\,m\big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\big(-4+3\,m\big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-\Big(42\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^3\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$2\Big(\big(5+3\,m\big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\big(-4+3\,m\big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-\Big(21\,(A-B+C)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4$$

$$\Big(-\frac{5}{7}\Big(\frac{5}{3}+m\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{5}{7}\Big(\frac{4}{3}-m\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big)\Big/$$

$$\Big(-21\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$2\Big(\big(5+3\,m\big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\big(-4+3\,m\big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-$$

$$\Big(45\,(A+B+C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$

$$\Big(-2\Big(\big(5+3\,m\big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\big(-4+3\,m\big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+9$$

$$\Big(-\frac{1}{3}\Big(\frac{5}{3}+m\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{1}{3}\Big(\frac{4}{3}-m\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)-$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((5+3m)\left(-\frac{3}{5}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{4}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+(-4+3m)\left(-\frac{3}{5}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{7}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{10}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(9\,\text{AppellF1}\left[\frac{1}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]-2\left((5+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-4+3m)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Bigg)^2-$$

$$\Bigg(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2$$

$$\Bigg(-2\left((5+3m)\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-4+3m)\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+15\left(-\frac{3}{5}\left(\frac{5}{3}+m\right)\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{4}{3}-m\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)-$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left((5+3m)\left(-\frac{5}{7}\left(\frac{8}{3}+m\right)\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{11}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{4}{3}-m\right)\text{AppellF1}\left[\frac{7}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)+$$

$$(-4+3 m)\left(-\frac{5}{7}\left(\frac{5}{3}+m\right)\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{5}{7}\left(\frac{7}{3}-m\right)\text{AppellF1}\Big[\frac{7}{2},\frac{10}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big)\Big)\Big)\Big/$$

$$\Big(15\,\text{AppellF1}\Big[\frac{3}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]-$$

$$2\Big((5+3 m)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$

$$(-4+3 m)\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2+$$

$$\Big(21\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^4$$

$$\Big(2\Big((5+3 m)\,\text{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$

$$(-4+3 m)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]-21$$

$$\left(-\frac{5}{7}\left(\frac{5}{3}+m\right)\text{AppellF1}\Big[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\right.$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{5}{7}\left(\frac{4}{3}-m\right)\text{AppellF1}\Big[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+$$

$$2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big((5+3 m)\left(-\frac{7}{9}\left(\frac{8}{3}+m\right)\text{AppellF1}\Big[\frac{9}{2},\frac{4}{3}-m,\frac{11}{3}+m,\right.$$

$$\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}(c+d x)\Big]+\frac{7}{9}\left(\frac{4}{3}-m\right)\text{AppellF1}\Big[\frac{9}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+$$

$$(-4+3 m)\left(-\frac{7}{9}\left(\frac{5}{3}+m\right)\text{AppellF1}\Big[\frac{9}{2},\frac{7}{3}-m,\frac{8}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{7}{9}\left(\frac{7}{3}-m\right)\text{AppellF1}\left[\frac{9}{2},\frac{10}{3}-m,\frac{5}{3}+m,\frac{11}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)\right)\Big/$$
$$\left(-21\,\text{AppellF1}\left[\frac{5}{2},\frac{4}{3}-m,\frac{5}{3}+m,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$2\left((5+3 m)\,\text{AppellF1}\left[\frac{7}{2},\frac{4}{3}-m,\frac{8}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$(-4+3 m)\,\text{AppellF1}\left[\frac{7}{2},\frac{7}{3}-m,\frac{5}{3}+m,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\right)\right)$$

Problem 369: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a\,\text{Cos}[c+d x])^m\,(b\,\text{Cos}[c+d x])^n\,\left(A+B\,\text{Cos}[c+d x]+C\,\text{Cos}[c+d x]^2\right)\,dx$$

Optimal (type 5, 227 leaves, 5 steps):

$$\frac{C\,(a\,\text{Cos}[c+d x])^{1+m}\,(b\,\text{Cos}[c+d x])^n\,\text{Sin}[c+d x]}{a\,d\,(2+m+n)}-$$
$$\left((C\,(1+m+n)+A\,(2+m+n))\,(a\,\text{Cos}[c+d x])^{1+m}\,(b\,\text{Cos}[c+d x])^n\right.$$
$$\left.\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}(1+m+n),\frac{1}{2}(3+m+n),\text{Cos}[c+d x]^2\right]\text{Sin}[c+d x]\right)\Big/$$
$$\left(a\,d\,(1+m+n)\,(2+m+n)\,\sqrt{\text{Sin}[c+d x]^2}\right)-$$
$$\left(B\,(a\,\text{Cos}[c+d x])^{2+m}\,(b\,\text{Cos}[c+d x])^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}(2+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}(4+m+n),\text{Cos}[c+d x]^2\right]\text{Sin}[c+d x]\right)\Big/\left(a^2\,d\,(2+m+n)\,\sqrt{\text{Sin}[c+d x]^2}\right)$$

Result (type 5, 545 leaves):

$$\frac{1}{4\,d} C \,\mathrm{Cos}[c+d\,x]^{-m-n}\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n$$
$$\left(\frac{1}{2+m+n} i\,2^{-m-n}\,e^{-2\,i\,(c+d\,x)}\,\left(e^{-i\,(c+d\,x)}+e^{i\,(c+d\,x)}\right)^{m+n}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{-m-n}\right.$$
$$\mathrm{Hypergeometric2F1}\left[-m-n,\,-1-\frac{m}{2}-\frac{n}{2},\,-\frac{m}{2}-\frac{n}{2},\,-e^{2\,i\,(c+d\,x)}\right]+$$
$$\frac{1}{-2+m+n} i\,2^{-m-n}\,e^{2\,i\,(c+d\,x)}\,\left(e^{-i\,(c+d\,x)}+e^{i\,(c+d\,x)}\right)^{m+n}\,\left(1+e^{2\,i\,(c+d\,x)}\right)^{-m-n}$$
$$\left.\mathrm{Hypergeometric2F1}\left[-m-n,\,1-\frac{m}{2}-\frac{n}{2},\,2-\frac{m}{2}-\frac{n}{2},\,-e^{2\,i\,(c+d\,x)}\right]\right)-$$
$$\left(A\,\mathrm{Cos}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}\,(3+m+n),\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\bigg/\left(d\,(1+m+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)-$$
$$\left(C\,\mathrm{Cos}[c+d\,x]\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(1+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}\,(3+m+n),\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\bigg/\left(2\,d\,(1+m+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)-$$
$$\left(B\,\mathrm{Cos}[c+d\,x]^2\,(a\,\mathrm{Cos}[c+d\,x])^m\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{1}{2}\,(2+m+n),\right.\right.$$
$$\left.\left.\frac{1}{2}\,(4+m+n),\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\bigg/\left(d\,(2+m+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Problem 370: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \mathrm{Cos}[c+d\,x]^2\,(b\,\mathrm{Cos}[c+d\,x])^n\,\left(A+B\,\mathrm{Cos}[c+d\,x]+C\,\mathrm{Cos}[c+d\,x]^2\right)\,dx$$

Optimal (type 5, 187 leaves, 5 steps):

$$\frac{C\,(b\,\mathrm{Cos}[c+d\,x])^{3+n}\,\mathrm{Sin}[c+d\,x]}{b^3\,d\,(4+n)}-$$
$$\left((C\,(3+n)+A\,(4+n))\,(b\,\mathrm{Cos}[c+d\,x])^{3+n}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{3+n}{2},\,\frac{5+n}{2},\,\mathrm{Cos}[c+d\,x]^2\right]\right.$$
$$\left.\mathrm{Sin}[c+d\,x]\right)\bigg/\left(b^3\,d\,(3+n)\,(4+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)-$$
$$\left(B\,(b\,\mathrm{Cos}[c+d\,x])^{4+n}\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{4+n}{2},\,\frac{6+n}{2},\,\mathrm{Cos}[c+d\,x]^2\right]\,\mathrm{Sin}[c+d\,x]\right)\bigg/$$
$$\left(b^4\,d\,(4+n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Result (type 6, 29 753 leaves): Display of huge result suppressed!

Problem 372: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (b \operatorname{Cos}[c+d x])^n \left(A+B \operatorname{Cos}[c+d x]+C \operatorname{Cos}[c+d x]^2\right) dx$$

Optimal (type 5, 187 leaves, 4 steps):

$$\frac{C\,(b \operatorname{Cos}[c+d x])^{1+n} \operatorname{Sin}[c+d x]}{b\,d\,(2+n)}-\left((C\,(1+n)+A\,(2+n))\,(b \operatorname{Cos}[c+d x])^{1+n} \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right)\Big/\left(b\,d\,(1+n)\,(2+n)\sqrt{\operatorname{Sin}[c+d x]^2}\right)-\left(B\,(b \operatorname{Cos}[c+d x])^{2+n} \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\frac{2+n}{2},\frac{4+n}{2},\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right)\Big/\left(b^2\,d\,(2+n)\sqrt{\operatorname{Sin}[c+d x]^2}\right)$$

Result (type 5, 441 leaves):

$$\frac{1}{4 d} C \operatorname{Cos}[c+d x]^{-n} (b \operatorname{Cos}[c+d x])^n \left(\frac{1}{2+n} i\, 2^{-n} e^{-2 i (c+d x)} \left(e^{-i (c+d x)}+e^{i (c+d x)}\right)^n \left(1+e^{2 i (c+d x)}\right)^{-n} \operatorname{Hypergeometric2F1}\left[-1-\frac{n}{2},-n,-\frac{n}{2},-e^{2 i (c+d x)}\right]+\frac{1}{-2+n} i\, 2^{-n} e^{2 i (c+d x)} \left(e^{-i (c+d x)}+e^{i (c+d x)}\right)^n \left(1+e^{2 i (c+d x)}\right)^{-n} \operatorname{Hypergeometric2F1}\left[1-\frac{n}{2},-n,2-\frac{n}{2},-e^{2 i (c+d x)}\right]\right)-\left(A \operatorname{Cos}[c+d x]\,(b \operatorname{Cos}[c+d x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right)\Big/\left(d\,(1+n)\sqrt{\operatorname{Sin}[c+d x]^2}\right)-\left(C \operatorname{Cos}[c+d x]\,(b \operatorname{Cos}[c+d x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+n}{2},\frac{3+n}{2},\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right)\Big/\left(2\,d\,(1+n)\sqrt{\operatorname{Sin}[c+d x]^2}\right)-\left(B \operatorname{Cos}[c+d x]^2\,(b \operatorname{Cos}[c+d x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2},\frac{2+n}{2},\frac{4+n}{2},\operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right)\Big/\left(d\,(2+n)\sqrt{\operatorname{Sin}[c+d x]^2}\right)$$

Problem 379: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(b \operatorname{Cos}[c+d x])^n \left(A+B \operatorname{Cos}[c+d x]+C \operatorname{Cos}[c+d x]^2\right)}{\sqrt{\operatorname{Cos}[c+d x]}} dx$$

Optimal (type 5, 221 leaves, 5 steps):

$$\frac{2\,C\,\sqrt{\text{Cos}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Sin}[c+d\,x]}{d\,(3+2\,n)}-\left(2\,\left(C+2\,C\,n+A\,(3+2\,n)\right)\,\sqrt{\text{Cos}[c+d\,x]}\,\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}\,(1+2\,n),\frac{1}{4}\,(5+2\,n),\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(d\,(1+2\,n)\,(3+2\,n)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)-\left(2\,B\,\text{Cos}[c+d\,x]^{3/2}\,\left(b\,\text{Cos}[c+d\,x]\right)^n\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}\,(3+2\,n),\frac{1}{4}\,(7+2\,n),\text{Cos}[c+d\,x]^2\right]\,\text{Sin}[c+d\,x]\right)\Big/\left(d\,(3+2\,n)\,\sqrt{\text{Sin}[c+d\,x]^2}\right)$$

Result (type 6, 7602 leaves):

$$\Bigg(2\,\text{Cos}[c+d\,x]^{-n}\,\left(b\,\text{Cos}[c+d\,x]\right)^n$$

$$\Bigg(\frac{1}{2}\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[2\,(c+d\,x)]-\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[2\,(c+d\,x)]+\text{Sec}[c+d\,x]\,\Bigg(\left(A\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\right)\,\text{Cos}[2\,(c+d\,x)]^2-\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[3\,(c+d\,x)]\,\text{Sin}[2\,(c+d\,x)]-\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[4\,(c+d\,x)]\,\text{Sin}[2\,(c+d\,x)]+\frac{1}{2}\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[c+d\,x]\,\text{Sin}[2\,(c+d\,x)]+\left(A\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\right)\,\text{Sin}[2\,(c+d\,x)]^2+\text{Cos}[2\,(c+d\,x)]\,\left(\frac{1}{4}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[3\,(c+d\,x)]+\frac{1}{4}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Cos}[4\,(c+d\,x)]+\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[c+d\,x]+\frac{1}{2}\,i\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[3\,(c+d\,x)]+\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[4\,(c+d\,x)]\right)+\text{Sin}[2\,(c+d\,x)]\,\left(-\frac{1}{4}\,i\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,B\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[3\,(c+d\,x)]+\frac{1}{4}\,C\,\text{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\text{Sin}[4\,(c+d\,x)]\right)\Bigg)\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\,\left(1-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^{-\frac{1}{2}+n}\,\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{\frac{5}{2}+n}$$

$$\Bigg(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\Big/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$

$$\Bigg(-(5+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+$$

$$(1-2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)+\Bigg(50(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg/$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\Bigg(-(5+2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$(1-2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)-\Bigg(21(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^4\Bigg)\Bigg/$$

$$\Bigg(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\Bigg((5+2n)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$(-1+2n)\,\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(15\,d\,\Bigg(-\frac{2}{15}\left(-\frac{1}{2}+n\right)\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)^{-\frac{3}{2}+n}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\right)^{\frac{5}{2}+n}$$

$$\Bigg(\Bigg(45(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)\Bigg/$$

$$\Bigg(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\Bigg(-(5+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$(1-2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\Bigg)$$

$$\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)+\Bigg(50(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\Bigg)\Bigg/$$

$$\Bigg(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+$$

$$\left(-(5+2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left.(1-2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^4\right)\Big/$$

$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left(\left((5+2n)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.\right.$$

$$(-1+2n)\,\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\right)+$$

$$\frac{1}{15}\,\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)^{-\frac{1}{2}+n}\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2}\right)^{\frac{5}{2}+n}$$

$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\Big/\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left(-(5+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left.(1-2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left(-(5+2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left.(1-2n)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+dx)\right]^4\right)\Big/$$

$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$

$$\left(\left((5+2n)\,\text{AppellF1}\left[\frac{7}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)-$$

$$\frac{2}{15}\,\left(\frac{5}{2}+n\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{1}{2}+n}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{7}{2}+n}$$

$$\left(\left(45\,\left(A+B+C\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\right/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left(-\left(5+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{7}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(1-2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+\left(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left(-\left(5+2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{2}-n,\,\frac{7}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left.\left(1-2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)-\left(21\,\left(A-B+C\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^4\right)\right/$$
$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\,\frac{1}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left(\left(5+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{1}{2}-n,\,\frac{7}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$
$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)+$$

$$\frac{2}{15}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{1}{2}+n}\,\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{5}{2}+n}$$

$$\left(\left(45\,\left(A+B+C\right)\right.\right.$$

$$\left(-\frac{1}{3}\left(\frac{5}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left(-(5+2n)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left.(1-2n)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)+\left(50(A-C)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\Big/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left(-(5+2n)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left.(1-2n)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)+\left(50(A-C)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right.$$
$$\left(-\frac{3}{5}\left(\frac{5}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{3}{5}\left(\frac{1}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left(-(5+2n)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left.(1-2n)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-\left(42(A-B+C)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]^3\right)\Big/$$
$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left((5+2n)\text{AppellF1}\left[\frac{7}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left.(-1+2n)\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) - \Big(21 (A-B+C) \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^4$$

$$\Big(-\frac{5}{7}\left(\frac{5}{2}+n\right) \mathrm{AppellF1}\left[\frac{7}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{9}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right] + \frac{5}{7}\left(\frac{1}{2}-n\right) \mathrm{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big) \Big/$$

$$\Big(-7 \mathrm{AppellF1}\left[\frac{5}{2}, \frac{1}{2}-n, \frac{5}{2}+n, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\Big((5+2 n) \mathrm{AppellF1}\left[\frac{7}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{9}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$(-1+2 n) \mathrm{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big) \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) -$$

$$\Big(45 (A+B+C) \mathrm{AppellF1}\left[\frac{1}{2}, \frac{1}{2}-n, \frac{5}{2}+n, \frac{3}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\Big(\Big(-(5+2 n) \mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$(1-2 n) \mathrm{AppellF1}\left[\frac{3}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)$$

$$\mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right] + 3\Big(-\frac{1}{3}\left(\frac{5}{2}+n\right) \mathrm{AppellF1}\left[\frac{3}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{5}{2},\right.$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right] +$$

$$\frac{1}{3}\left(\frac{1}{2}-n\right) \mathrm{AppellF1}\left[\frac{3}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{5}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big) +$$

$$\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \Big(-(5+2 n) \Big(-\frac{3}{5}\left(\frac{7}{2}+n\right) \mathrm{AppellF1}\left[\frac{5}{2}, \frac{1}{2}-n, \frac{9}{2}+n,\right.$$

$$\left.\frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\Big[$$

$$\frac{1}{2}(c+d x)\Big] + \frac{3}{5}\left(\frac{1}{2}-n\right) \mathrm{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{7}{2}+n, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big) +$$

$$(1-2 n) \Big(-\frac{3}{5}\left(\frac{5}{2}+n\right) \mathrm{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{7}{2}+n, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right] +$$

$$\frac{3}{5}\left(\frac{3}{2}-n\right) \mathrm{AppellF1}\left[\frac{5}{2}, \frac{5}{2}-n, \frac{5}{2}+n, \frac{7}{2}, \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \mathrm{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \mathrm{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big) \Big/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-(5+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(1-2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2-\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\left(-(5+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(1-2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+5\left(-\frac{3}{5}\left(\frac{5}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{3}{5}\left(\frac{1}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(-(5+2\,n)\left(-\frac{5}{7}\left(\frac{7}{2}+n\right)\text{AppellF1}\left[\frac{7}{2},\frac{1}{2}-n,\frac{9}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{1}{2}-n\right)\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)+(1-2\,n)\left(-\frac{5}{7}\left(\frac{5}{2}+n\right)\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{7}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\right)\right)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left(-(5+2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{7}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(1-2\,n)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2+\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\right.\right.$$

$$\frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^4$$

$$\Bigg(\Bigg(\Bigg((5+2 n) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+ (-1+2 n) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg) \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]-7 \Bigg(-\frac{5}{7}\left(\frac{5}{2}+n\right) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{5}{7}\left(\frac{1}{2}-n\right) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$

$$\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2 \Bigg((5+2 n)\Bigg(-\frac{7}{9}\left(\frac{7}{2}+n\right) \operatorname{AppellF1}\left[\frac{9}{2}, \frac{1}{2}-n, \frac{9}{2}+n, \frac{11}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{7}{9}\left(\frac{1}{2}-n\right) \operatorname{AppellF1}\left[\frac{9}{2}, \frac{3}{2}-n, \frac{7}{2}+n, \frac{11}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)+$$

$$(-1+2 n)\Bigg(-\frac{7}{9}\left(\frac{5}{2}+n\right) \operatorname{AppellF1}\left[\frac{9}{2}, \frac{3}{2}-n, \frac{7}{2}+n, \frac{11}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+ \frac{7}{9}\left(\frac{3}{2}-n\right) \operatorname{AppellF1}\left[\frac{9}{2}, \frac{5}{2}-n, \frac{5}{2}+n, \frac{11}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg)\Bigg)\Bigg) \Big/$$

$$\Bigg(-7 \operatorname{AppellF1}\left[\frac{5}{2}, \frac{1}{2}-n, \frac{5}{2}+n, \frac{7}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+ \Bigg((5+2 n) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{1}{2}-n, \frac{7}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+ (-1+2 n) \operatorname{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg) \operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2\Bigg)\Bigg)$$

Problem 380: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(b \operatorname{Cos}[c+d x])^n\left(A+B \operatorname{Cos}[c+d x]+C \operatorname{Cos}[c+d x]^2\right)}{\operatorname{Cos}[c+d x]^{3/2}} \, dx$$

Optimal (type 5, 217 leaves, 5 steps):

$$\frac{2\,C\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Sin}[c+d\,x]}{d\,(1+2\,n)\,\sqrt{\mathrm{Cos}[c+d\,x]}}+\left(2\,(A-C\,(1-2\,n)+2\,A\,n)\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}\,(-1+2\,n),\frac{1}{4}\,(3+2\,n),\mathrm{Cos}[c+d\,x]^2\right]\mathrm{Sin}[c+d\,x]\right)\bigg/\left(d\,(1-4\,n^2)\,\sqrt{\mathrm{Cos}[c+d\,x]}\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)-\left(2\,B\,\sqrt{\mathrm{Cos}[c+d\,x]}\,(b\,\mathrm{Cos}[c+d\,x])^n\,\mathrm{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{4}\,(1+2\,n),\frac{1}{4}\,(5+2\,n),\mathrm{Cos}[c+d\,x]^2\right]\mathrm{Sin}[c+d\,x]\right)\bigg/\left(d\,(1+2\,n)\,\sqrt{\mathrm{Sin}[c+d\,x]^2}\right)$$

Result (type 6, 7612 leaves):

$$\left(2\,\mathrm{Cos}[c+d\,x]^{-n}\,(b\,\mathrm{Cos}[c+d\,x])^n\right.$$

$$\left(\mathrm{Sec}[c+d\,x]\left(\frac{1}{2}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Cos}[2\,(c+d\,x)]-\frac{1}{2}\,i\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[2\,(c+d\,x)]\right)+\mathrm{Sec}[c+d\,x]^2\left(\left(A\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\right)\mathrm{Cos}[2\,(c+d\,x)]^2-\frac{1}{2}\,i\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Cos}[3\,(c+d\,x)]\,\mathrm{Sin}[2\,(c+d\,x)]-\frac{1}{4}\,i\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Cos}[4\,(c+d\,x)]\,\mathrm{Sin}[2\,(c+d\,x)]+\frac{1}{2}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[c+d\,x]\,\mathrm{Sin}[2\,(c+d\,x)]+\left(A\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\right)\mathrm{Sin}[2\,(c+d\,x)]^2+\mathrm{Cos}[2\,(c+d\,x)]\left(\frac{1}{4}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Cos}[3\,(c+d\,x)]+\frac{1}{4}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Cos}[4\,(c+d\,x)]+\frac{1}{2}\,i\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[c+d\,x]+\frac{1}{2}\,i\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[3\,(c+d\,x)]+\frac{1}{4}\,i\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[4\,(c+d\,x)]\right)+\mathrm{Sin}[2\,(c+d\,x)]\left(-\frac{1}{4}\,i\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}+\frac{1}{2}\,B\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[3\,(c+d\,x)]+\frac{1}{4}\,C\,\mathrm{Cos}[c+d\,x]^{\frac{1}{2}+n}\,\mathrm{Sin}[4\,(c+d\,x)]\right)\right)\right)$$

$$\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\left(1-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^{-\frac{3}{2}+n}\left(\frac{1}{1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2}\right)^{\frac{3}{2}+n}$$

$$\left(\left(45\,(A+B+C)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)\right/$$

$$\left(3\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{3}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]-\right.$$

$$\left(\left(3+2\,n\right)\mathrm{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Big)+\left(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Big)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Big)-\left(21\,\left(A-B+C\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^4\Big)\Big/$$

$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)\Bigg)\Big/$$

$$\left(15\,d\,\left(-\frac{2}{15}\,\left(-\frac{3}{2}+n\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{5}{2}+n}\right.\right.$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{3}{2}+n}$$

$$\left(\left(45\,\left(A+B+C\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\Big/\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Big)+\left(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\Big)\Big/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$

$$\left(\left(3+2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{5}{2}-n, \frac{3}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)-\left(21\left(A-B+C\right) \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{7}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right] \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^4\right)\Big/$$
$$\left(-7 \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left(\left(3+2 n\right) \text{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left(-3+2 n\right) \text{AppellF1}\left[\frac{7}{2}, \frac{5}{2}-n, \frac{3}{2}+n, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right) \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\right)+$$
$$\frac{1}{15} \text{Sec}\left[\frac{1}{2}\left(c+d x\right)\right]^2 \left(1-\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)^{-\frac{3}{2}+n} \left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2}\right)^{\frac{3}{2}+n}$$
$$\left(\left(45\left(A+B+C\right) \text{AppellF1}\left[\frac{1}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)\Big/\right.$$
$$\left(3 \text{AppellF1}\left[\frac{1}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]-\right.$$
$$\left(\left(3+2 n\right) \text{AppellF1}\left[\frac{3}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right) \text{AppellF1}\left[\frac{3}{2}, \frac{5}{2}-n, \frac{3}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)+\left(50\left(A-C\right) \text{AppellF1}\left[\frac{3}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right] \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)\Big/$$
$$\left(5 \text{AppellF1}\left[\frac{3}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]-\right.$$
$$\left(\left(3+2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{5}{2}-n, \frac{3}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right)-\left(21\left(A-B+C\right) \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{7}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right] \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^4\right)\Big/$$
$$\left(-7 \text{AppellF1}\left[\frac{5}{2}, \frac{3}{2}-n, \frac{3}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$
$$\left(\left(3+2 n\right) \text{AppellF1}\left[\frac{7}{2}, \frac{3}{2}-n, \frac{5}{2}+n, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2, -\text{Tan}\left[\frac{1}{2}\left(c+d x\right)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)-$$

$$\frac{2}{15}\,\left(\frac{3}{2}+n\right)\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{3}{2}+n}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{5}{2}+n}$$

$$\left(\left(45\,\left(A+B+C\right)\,\text{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\right/$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left.\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+\left(50\,\left(A-C\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right/$$

$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]-\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left.\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)-\left(21\,\left(A-B+C\right)\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^4\right)\right/$$

$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(\left(3+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{7}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)+$$

$$\frac{2}{15}\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^{-\frac{3}{2}+n}\,\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{3}{2}+n}$$

$$\left(\left(45\,\left(A+B+C\right)\right.\right.$$

$$\left(-\frac{1}{3}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$
$$\left(\left(3+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$
$$\left(\left(3+2 n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+\left(50\,(A-C)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right.$$
$$\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$
$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]-\right.$$
$$\left(\left(3+2 n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-\left(42\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\right.\right.$$
$$\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]^3\right)\Big/$$
$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left(\left(3+2 n\right)\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$
$$\left.\left(-3+2 n\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)$$

$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big) - \Big(21\,(A-B+C)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4$$
$$\Big(-\frac{5}{7}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{5}{7}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{7}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{9}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big/$$
$$\Big(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$\Big((3+2\,n)\,\text{AppellF1}\left[\frac{7}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(-3+2\,n)\,\text{AppellF1}\left[\frac{7}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big) -$$
$$\Big(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\Big(-\Big((3+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+$$
$$(-3+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+3$$
$$\Big(-\frac{1}{3}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]$$
$$\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big) -$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big((3+2\,n)\left(-\frac{3}{5}\left(\frac{5}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{7}{2}+n,\frac{7}{2},\right.\right.$$
$$\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\Big[$$
$$\frac{1}{2}(c+d\,x)\Big]+\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)+$$
$$(-3+2\,n)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+$$
$$\frac{3}{5}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Bigg(3\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{3}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]-$$

$$\Big(\left(3+2\,n\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{5}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Bigg)^2-$$

$$\Bigg(50\,(A-C)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2$$

$$\Bigg(-\Big(\left(3+2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+5\,\Big(-\frac{3}{5}\,\Big(\frac{3}{2}+n\Big)$$

$$\text{AppellF1}\Big[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]$$

$$\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\frac{3}{5}\,\Big(\frac{3}{2}-n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)-$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\Bigg(\left(3+2\,n\right)\,\Big(-\frac{5}{7}\,\Big(\frac{5}{2}+n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{3}{2}-n,\,\frac{7}{2}+n,\,\frac{9}{2},$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\,(c+d\,x)\Big]+\frac{5}{7}\,\Big(\frac{3}{2}-n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{5}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)+$$

$$\left(-3+2\,n\right)\,\Big(-\frac{5}{7}\,\Big(\frac{3}{2}+n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{5}{2}-n,\,\frac{5}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+$$

$$\frac{5}{7}\,\Big(\frac{5}{2}-n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{2}-n,\,\frac{3}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(5\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]-$$

$$\Big(\left(3+2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{3}{2}-n,\,\frac{5}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2]) \,\text{Tan}[\tfrac{1}{2}(c+d x)]^2)^2 +$$

$$(21\,(A-B+C)\,\text{AppellF1}[\tfrac{5}{2}, \tfrac{3}{2}-n, \tfrac{3}{2}+n, \tfrac{7}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^4$$

$$(((3+2 n)\,\text{AppellF1}[\tfrac{7}{2}, \tfrac{3}{2}-n, \tfrac{5}{2}+n, \tfrac{9}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] +$$

$$(-3+2 n)\,\text{AppellF1}[\tfrac{7}{2}, \tfrac{5}{2}-n, \tfrac{3}{2}+n, \tfrac{9}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)] - 7\,(-\tfrac{5}{7}(\tfrac{3}{2}+n)$$

$$\text{AppellF1}[\tfrac{7}{2}, \tfrac{3}{2}-n, \tfrac{5}{2}+n, \tfrac{9}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]$$

$$\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)] + \tfrac{5}{7}(\tfrac{3}{2}-n)\,\text{AppellF1}[\tfrac{7}{2}, \tfrac{5}{2}-n, \tfrac{3}{2}+n, \tfrac{9}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)]) +$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2\,((3+2 n)\,(-\tfrac{7}{9}(\tfrac{5}{2}+n)\,\text{AppellF1}[\tfrac{9}{2}, \tfrac{3}{2}-n, \tfrac{7}{2}+n, \tfrac{11}{2},$$

$$\text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[$$

$$\tfrac{1}{2}(c+d x)] + \tfrac{7}{9}(\tfrac{3}{2}-n)\,\text{AppellF1}[\tfrac{9}{2}, \tfrac{5}{2}-n, \tfrac{5}{2}+n, \tfrac{11}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)]) +$$

$$(-3+2 n)\,(-\tfrac{7}{9}(\tfrac{3}{2}+n)\,\text{AppellF1}[\tfrac{9}{2}, \tfrac{5}{2}-n, \tfrac{5}{2}+n, \tfrac{11}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)] +$$

$$\tfrac{7}{9}(\tfrac{5}{2}-n)\,\text{AppellF1}[\tfrac{9}{2}, \tfrac{7}{2}-n, \tfrac{3}{2}+n, \tfrac{11}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2]\,\text{Sec}[\tfrac{1}{2}(c+d x)]^2\,\text{Tan}[\tfrac{1}{2}(c+d x)])))))\Big/$$

$$(-7\,\text{AppellF1}[\tfrac{5}{2}, \tfrac{3}{2}-n, \tfrac{3}{2}+n, \tfrac{7}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] +$$

$$((3+2 n)\,\text{AppellF1}[\tfrac{7}{2}, \tfrac{3}{2}-n, \tfrac{5}{2}+n, \tfrac{9}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2, -\text{Tan}[\tfrac{1}{2}(c+d x)]^2] +$$

$$(-3+2 n)\,\text{AppellF1}[\tfrac{7}{2}, \tfrac{5}{2}-n, \tfrac{3}{2}+n, \tfrac{9}{2}, \text{Tan}[\tfrac{1}{2}(c+d x)]^2,$$

$$-\text{Tan}[\tfrac{1}{2}(c+d x)]^2])\,\text{Tan}[\tfrac{1}{2}(c+d x)]^2)^2))$$

Problem 381: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{(b \cos[c+d x])^n \left(A+B \cos[c+d x]+C \cos[c+d x]^2\right)}{\cos[c+d x]^{5/2}} \, dx$$

Optimal (type 5, 221 leaves, 5 steps):

$$-\frac{2 C (b \cos[c+d x])^n \sin[c+d x]}{d (1-2 n) \cos[c+d x]^{3/2}}+\left(2 (A+C (3-2 n)-2 A n) (b \cos[c+d x])^n \text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4} (-3+2 n), \frac{1}{4} (1+2 n), \cos[c+d x]^2\right] \sin[c+d x]\right) \Big/ \left(d (1-2 n) (3-2 n) \cos[c+d x]^{3/2} \sqrt{\sin[c+d x]^2}\right)+\left(2 B (b \cos[c+d x])^n \text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4} (-1+2 n), \frac{1}{4} (3+2 n), \cos[c+d x]^2\right] \sin[c+d x]\right) \Big/ \left(d (1-2 n) \sqrt{\cos[c+d x]} \sqrt{\sin[c+d x]^2}\right)$$

Result (type 6, 14 740 leaves):

$$-\Bigg(\Bigg(6 \cos[c+d x]^{-n} (b \cos[c+d x])^n \left(\sec[c+d x]^2 \left(\frac{1}{2} B \cos[c+d x]^{\frac{1}{2}+n} \cos[2 (c+d x)]-\frac{1}{2} i B \cos[c+d x]^{\frac{1}{2}+n} \sin[2 (c+d x)]\right)+\sec[c+d x]^3 \left(\left(A \cos[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} C \cos[c+d x]^{\frac{1}{2}+n}\right) \cos[2 (c+d x)]^2-\frac{1}{2} i B \cos[c+d x]^{\frac{1}{2}+n} \cos[3 (c+d x)] \sin[2 (c+d x)]-\frac{1}{4} i C \cos[c+d x]^{\frac{1}{2}+n} \cos[4 (c+d x)] \sin[2 (c+d x)]+\frac{1}{2} B \cos[c+d x]^{\frac{1}{2}+n} \sin[c+d x] \sin[2 (c+d x)]+\left(A \cos[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} C \cos[c+d x]^{\frac{1}{2}+n}\right) \sin[2 (c+d x)]^2+\cos[2 (c+d x)] \left(\frac{1}{4} C \cos[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} B \cos[c+d x]^{\frac{1}{2}+n} \cos[3 (c+d x)]+\frac{1}{4} C \cos[c+d x]^{\frac{1}{2}+n} \cos[4 (c+d x)]+\frac{1}{2} i B \cos[c+d x]^{\frac{1}{2}+n} \sin[c+d x]+\frac{1}{2} i B \cos[c+d x]^{\frac{1}{2}+n} \sin[3 (c+d x)]+\frac{1}{4} i C \cos[c+d x]^{\frac{1}{2}+n} \sin[4 (c+d x)]\right)+\sin[2 (c+d x)] \left(-\frac{1}{4} i C \cos[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} B \cos[c+d x]^{\frac{1}{2}+n} \sin[3 (c+d x)]+\frac{1}{4} C \cos[c+d x]^{\frac{1}{2}+n} \sin[4 (c+d x)]\right)\right)\right) \tan\left[\frac{1}{2} (c+d x)\right]$$

$$\left(\frac{1-\tan\left[\frac{1}{2} (c+d x)\right]^2}{1+\tan\left[\frac{1}{2} (c+d x)\right]^2}\right)^{\frac{1}{2}+n} \Bigg(\Bigg(A \,\text{AppellF1}\left[\frac{1}{2}, \frac{1}{2}-n, \frac{1}{2}+n, \frac{3}{2}, \tan\left[\frac{1}{2} (c+d x)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left.\left(-1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-\Bigg(\mathrm{B}\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left.\left(-1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)+\Bigg(\mathrm{C}\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left.\left(-1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)+\Bigg(4\,\mathrm{A}\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left.\left(-3+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\right)$$

$$\left.\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)-\Bigg(2\,\mathrm{B}\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\right.$$

$$-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]\,\left(-1+\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right)\Bigg)\Bigg/$$

$$\left(-3\,\mathrm{AppellF1}\left[\frac{1}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\mathrm{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2,\,-\mathrm{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right]+\right.$$

$$\left(-3+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+$$

$$\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\,\frac{5}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{5}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{5}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left.\left(-5+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)\right)\Big/\left(d\,\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^3\right.$$

$$\left(-\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^4}\,18\,\text{Sec}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right.$$

$$\left(\frac{1-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}{1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2}\right)^{\frac{1}{2}+n}\,\left(\left(\left(A\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\right.\right.\right.\right.$$

$$\left.\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^2\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)-\left(B\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^2\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(\left(1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{1}{2}-n,\,\frac{3}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]+\right.$$

$$\left(-1+2\,n\right)\,\text{AppellF1}\left[\frac{3}{2},\,\frac{3}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\right)\,\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)+\left(C\,\text{AppellF1}\left[\frac{1}{2},\,\frac{1}{2}-n,\,\frac{1}{2}+n,\,\frac{3}{2},\right.\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right]\,\left(-1+\text{Tan}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]^2\right)^2\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$

$$\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+(-5+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)-$$

$$\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^3}\,3\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\frac{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{\frac{1}{2}+n}$$

$$\Bigg(\Bigg(A\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)\Big/\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\Big(\big(1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\big(-1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,$$
$$\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)-$$
$$\Big(B\, \text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Big)\Big/\Big(-3\, \text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\Big(\big(1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\big(-1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,$$
$$\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)+$$
$$\Big(C\, \text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Big)\Big/\Big(-3\, \text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\Big(\big(1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\big(-1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,$$
$$\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)+$$
$$\Big(4\, A\, \text{AppellF1}\Big[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big)\Big/\Big(-3\, \text{AppellF1}\Big[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\Big(\big(1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\big(-3+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}-n,$$
$$\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)-$$
$$\Big(2\, B\, \text{AppellF1}\Big[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big)\Big/\Big(-3\, \text{AppellF1}\Big[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\Big(\big(1+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\big(-3+2 n\big) \text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}-n,$$
$$\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)+$$

$$\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left((1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-5+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)-$$

$$\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^3}\,6\left(\frac{1}{2}+n\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(\frac{1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{-\frac{1}{2}+n}$$
$$\left(-\left(\left(\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Big/\right.\right.$$
$$\left.\left.\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)-\frac{\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)$$
$$\left(\left(A\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.\right.$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\Big/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left((1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-$$
$$\left(B\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\right)\Big/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left((1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$(-1+2\,n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$
$$\left(C\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^2\Bigg)\Bigg/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$
$$\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-3+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-$$
$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right.$$
$$\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\Bigg/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-3+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+$$
$$\left(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Bigg/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-5+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Bigg)-$$

$$\frac{1}{\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^3} 6\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(\frac{1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{\frac{1}{2}+n}$$

$$\left(\left(\left(2\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.\right.\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(\left(1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(\left(1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+$$

$$\left(2\,C\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right.$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\right/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(\left(1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(-1+2n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+$$

$$\left(A\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\Bigg(\left(1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\left(-1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-$$

$$\Bigg(B\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\Bigg(\left(1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\left(-1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+$$

$$\Bigg(C\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\Bigg(\left(1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\left(-1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Bigg)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+$$

$$\Bigg(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)+$$

$$\left(4\,A\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(-3+2 n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)-$$

$$\left(2\,B\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)\right)\Big/$$

$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\right.$$

$$\left(\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.\right.$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)+$$
$$\left(4\,A\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{1}{3}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\Big/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$(-5+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)-$$
$$\left(A\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)^2$$
$$\left(\left(\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.\right.\right.$$
$$(-1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]-$$
$$3\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\left((1+2n)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{3}{5}\left(\frac{1}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)+(-1+2 n)$$

$$\Big(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(-3\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$

$$\Big((1+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+(-1+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2+$$

$$\Big(B\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2$$

$$\Big(\Big((1+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$

$$(-1+2 n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-$$

$$3\Big(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$

$$\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\Big((1+2 n)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{3}{5}\left(\frac{1}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+(-1+2 n)$$

$$\Big(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$
$$\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big)\Big/$$
$$\Big(-3\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$
$$\Big((1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},$$
$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2-$$
$$\Big(C\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^2$$
$$\Big(\Big(\Big((1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+$$
$$(-1+2n)\,\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-$$
$$3\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{1}{2}-n\right)$$
$$\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$
$$\Big((1+2n)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{1}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$
$$\frac{3}{5}\left(\frac{1}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+(-1+2n)$$
$$\left(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$
$$\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{1}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\Big(\left(1+2 n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{1}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]+\left(-1+2 n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)^2-$$

$$\Bigg(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)$$

$$\Bigg(\Big(\Big(\left(1+2 n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\left(-3+2 n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]-$$

$$3\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\Bigg(\left(1+2 n\right)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)+\left(-3+2 n\right)$$

$$\left(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]+$$

$$\frac{3}{5}\left(\frac{5}{2}-n\right)\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d x)\right]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+$$

$$\left(\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\right.$$
$$\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)^2+$$
$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right.$$
$$\left(-1+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right)$$
$$\left(\left(\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.\right.\right.$$
$$(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\right)\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]-$$
$$3\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+\frac{1}{3}\left(\frac{3}{2}-n\right)$$
$$\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]$$
$$\left.\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2$$
$$\left(\left((1+2n)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{3}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{3}{5}\left(\frac{3}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)+(-3+2n)$$
$$\left(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.$$
$$\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]+$$
$$\frac{3}{5}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]\text{Sec}\left[\frac{1}{2}(c+dx)\right]^2\text{Tan}\left[\frac{1}{2}(c+dx)\right]\right)\right)\right)\right)\right)\Big/$$
$$\left(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{3}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+\right.$$
$$\left((1+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{3}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2,\right.\right.$$
$$-\text{Tan}\left[\frac{1}{2}(c+dx)\right]^2\right]+(-3+2n)\,\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{5}{2},$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\ -\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\Bigg)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)^2-$$

$$\Bigg(4\,A\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]$$

$$\Bigg(\Bigg(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$\left(-5+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\Bigg)\ \text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]-$$

$$3\left(-\frac{1}{3}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{1}{3}\left(\frac{5}{2}-n\right)$$

$$\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\Bigg(\left(1+2\,n\right)\left(-\frac{3}{5}\left(\frac{3}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{5}{2}-n,\frac{5}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{3}{5}\left(\frac{5}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+\left(-5+2\,n\right)$$

$$\left(-\frac{3}{5}\left(\frac{1}{2}+n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{3}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{3}{5}\left(\frac{7}{2}-n\right)\text{AppellF1}\left[\frac{5}{2},\frac{9}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(-3\,\text{AppellF1}\left[\frac{1}{2},\frac{5}{2}-n,\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+$$

$$\Bigg(\left(1+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{5}{2}-n,\frac{3}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]+\left(-5+2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\right.$$

$$\left.\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\right]\Bigg)\ \text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Problem 382: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{(b \operatorname{Cos}[c+d x])^n \left(A+B \operatorname{Cos}[c+d x]+C \operatorname{Cos}[c+d x]^2\right)}{\operatorname{Cos}[c+d x]^{7/2}} \, dx$$

Optimal (type 5, 223 leaves, 5 steps):

$$-\frac{2 C (b \operatorname{Cos}[c+d x])^n \operatorname{Sin}[c+d x]}{d (3-2 n) \operatorname{Cos}[c+d x]^{5/2}}+$$
$$\left(2 (A (3-2 n)+C (5-2 n)) (b \operatorname{Cos}[c+d x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4} (-5+2 n), \frac{1}{4} (-1+2 n), \operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right) \Big/ \left(d (3-2 n) (5-2 n) \operatorname{Cos}[c+d x]^{5/2} \sqrt{\operatorname{Sin}[c+d x]^2}\right)+$$
$$\left(2 B (b \operatorname{Cos}[c+d x])^n \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1}{4} (-3+2 n), \frac{1}{4} (1+2 n), \operatorname{Cos}[c+d x]^2\right] \operatorname{Sin}[c+d x]\right) \Big/ \left(d (3-2 n) \operatorname{Cos}[c+d x]^{3/2} \sqrt{\operatorname{Sin}[c+d x]^2}\right)$$

Result (type 6, 7597 leaves):

$$\Bigg(2 \operatorname{Cos}[c+d x]^{-n} (b \operatorname{Cos}[c+d x])^n$$
$$\left(\operatorname{Sec}[c+d x]^3 \left(\frac{1}{2} B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Cos}[2 (c+d x)]-\frac{1}{2} i B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[2 (c+d x)]\right)+\right.$$
$$\operatorname{Sec}[c+d x]^4 \left(\left(A \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}\right) \operatorname{Cos}[2 (c+d x)]^2-\right.$$
$$\frac{1}{2} i B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Cos}[3 (c+d x)] \operatorname{Sin}[2 (c+d x)]-$$
$$\frac{1}{4} i C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Cos}[4 (c+d x)] \operatorname{Sin}[2 (c+d x)]+\frac{1}{2} B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[c+d x]$$
$$\operatorname{Sin}[2 (c+d x)]+\left(A \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}\right) \operatorname{Sin}[2 (c+d x)]^2+$$
$$\operatorname{Cos}[2 (c+d x)] \left(\frac{1}{4} C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Cos}[3 (c+d x)]+\right.$$
$$\frac{1}{4} C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Cos}[4 (c+d x)]+\frac{1}{2} i B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[c+d x]+$$
$$\left.\frac{1}{2} i B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[3 (c+d x)]+\frac{1}{4} i C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[4 (c+d x)]\right)+$$
$$\operatorname{Sin}[2 (c+d x)] \left(-\frac{1}{4} i C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n}+\frac{1}{2} B \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[3 (c+d x)]+\right.$$
$$\left.\left.\left.\frac{1}{4} C \operatorname{Cos}[c+d x]^{\frac{1}{2}+n} \operatorname{Sin}[4 (c+d x)]\right)\right)\right)$$
$$\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right] \left(1-\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right)^{-\frac{7}{2}+n} \left(\frac{1}{1+\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2}\right)^{-\frac{1}{2}+n}$$
$$\left(\left(45 (A+B+C) \operatorname{AppellF1}\left[\frac{1}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{3}{2}, \operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2, -\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]^2\right]\right) \Big/\right.$$

$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1-2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.\left(7-2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\Big/$$
$$\left(5\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1-2\,n\right)\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.\left(7-2\,n\right)\text{AppellF1}\left[\frac{5}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)-\left(21\,(A-B+C)\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\right.\right.$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^4\right)\Big/$$
$$\left(-7\,\text{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(-1+2\,n\right)\text{AppellF1}\left[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(-7+2\,n\right)\text{AppellF1}\left[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)\right)\right)\Big/$$

$$\left(15\,d\left(-\frac{2}{15}\left(-\frac{7}{2}+n\right)\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]^2\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\left(1-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)^{-\frac{9}{2}+n}\right.\right.$$
$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{-\frac{1}{2}+n}$$
$$\left(\left(45\,(A+B+C)\,\text{AppellF1}\left[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)\Big/\right.$$
$$\left(3\,\text{AppellF1}\left[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left(\left(1-2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]+\right.$$
$$\left.\left(7-2\,n\right)\text{AppellF1}\left[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2,-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right]\right)$$
$$\left.\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)+\left(50\,(A-C)\,\text{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\right.\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) \Big/$$

$$\Big(5\,\text{AppellF1}\left[\frac{3}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\Big(\left(1-2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{7}{2}-n, \frac{1}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\left(7-2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{9}{2}-n, -\frac{1}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) - \Big(21\left(A-B+C\right) \text{AppellF1}\left[\frac{5}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\Big) \Big/$$

$$\Big(-7\,\text{AppellF1}\left[\frac{5}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\Big(\left(-1+2 n\right) \text{AppellF1}\left[\frac{7}{2}, \frac{7}{2}-n, \frac{1}{2}+n, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\left(-7+2 n\right) \text{AppellF1}\left[\frac{7}{2}, \frac{9}{2}-n, -\frac{1}{2}+n, \frac{9}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2,\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big) \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)\Big) +$$

$$\frac{1}{15} \text{Sec}\left[\frac{1}{2}(c+d x)\right]^2 \left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{-\frac{7}{2}+n} \left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{-\frac{1}{2}+n}$$

$$\Big(\Big(45\left(A+B+C\right) \text{AppellF1}\left[\frac{1}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big) \Big/$$

$$\Big(3\,\text{AppellF1}\left[\frac{1}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{3}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\Big(\left(1-2 n\right) \text{AppellF1}\left[\frac{3}{2}, \frac{7}{2}-n, \frac{1}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\left(7-2 n\right) \text{AppellF1}\left[\frac{3}{2}, \frac{9}{2}-n, -\frac{1}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) + \Big(50\left(A-C\right) \text{AppellF1}\left[\frac{3}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{5}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) \Big/$$

$$\Big(5\,\text{AppellF1}\left[\frac{3}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{5}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\Big(\left(1-2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{7}{2}-n, \frac{1}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] +$$

$$\left(7-2 n\right) \text{AppellF1}\left[\frac{5}{2}, \frac{9}{2}-n, -\frac{1}{2}+n, \frac{7}{2}, \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\Big)$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big) - \Big(21\left(A-B+C\right) \text{AppellF1}\left[\frac{5}{2}, \frac{7}{2}-n, -\frac{1}{2}+n, \frac{7}{2},\right.$$

$$\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2, -\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right] \text{Tan}\left[\frac{1}{2}(c+d x)\right]^4\Big) \Big/$$

$$\Big(-7\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(\Big(-1+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(-7+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big)-$$

$$\frac{2}{15}\Big(-\frac{1}{2}+n\Big)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\Big(1-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)^{-\frac{7}{2}+n}$$

$$\left(\frac{1}{1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2}\right)^{\frac{1}{2}+n}$$

$$\Big(\Big(45\,(A+B+C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(\Big(1-2\,n\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(7-2\,n\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)+\Big(50\,(A-C)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big/$$

$$\Big(5\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(\Big(1-2\,n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(7-2\,n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-\Big(21\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},$$

$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4\Big)\Big/$$

$$\Big(-7\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(\Big(-1+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$

$$\Big(-7+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)\Big)+$$

$$\frac{2}{15}\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\left(1-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right)^{-\frac{7}{2}+n}\left(\frac{1}{1+\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2}\right)^{-\frac{1}{2}+n}$$

$$\Bigg(\Bigg(45 (A+B+C)\left(-\frac{1}{3}\left(-\frac{1}{2}+n\right)\operatorname{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{1}{3}\left(\frac{7}{2}-n\right)\operatorname{AppellF1}\left[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)\Bigg/$$

$$\Bigg(3\operatorname{AppellF1}\left[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1-2n)\operatorname{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(7-2n)\operatorname{AppellF1}\left[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+\Bigg(50 (A-C)\operatorname{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\Bigg)\Bigg/$$

$$\Bigg(5\operatorname{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1-2n)\operatorname{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(7-2n)\operatorname{AppellF1}\left[\frac{5}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)+\Bigg(50 (A-C)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2$$

$$\left(-\frac{3}{5}\left(-\frac{1}{2}+n\right)\operatorname{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]+\frac{3}{5}\left(\frac{7}{2}-n\right)\operatorname{AppellF1}\left[\frac{5}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)\Bigg/$$

$$\Bigg(5\operatorname{AppellF1}\left[\frac{3}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+\left((1-2n)\operatorname{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]+(7-2n)\operatorname{AppellF1}\left[\frac{5}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\right)\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Bigg)-\Bigg(42 (A-B+C)\operatorname{AppellF1}\left[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2,-\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^2\right]\operatorname{Sec}\left[\frac{1}{2}(c+d x)\right]^2\operatorname{Tan}\left[\frac{1}{2}(c+d x)\right]^3\Bigg)\Bigg/$$

$$\Big(-7\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\Big(\Big(-1+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\Big(-7+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-\Big(21\,(A-B+C)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^4$$
$$\Big(-\frac{5}{7}\Big(-\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{5}{7}\Big(\frac{7}{2}-n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)\Big)\Big/$$
$$\Big(-7\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\Big(\Big(-1+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\Big(-7+2\,n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{9}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big)-$$
$$\Big(45\,(A+B+C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{7}{2}-n,-\frac{1}{2}+n,\frac{3}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$
$$\Big(\Big(\Big(1-2\,n\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]+$$
$$\Big(7-2\,n\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+3\,\Big(-\frac{1}{3}\Big(-\frac{1}{2}+n\Big)$$
$$\text{AppellF1}\Big[\frac{3}{2},\frac{7}{2}-n,\frac{1}{2}+n,\frac{5}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]$$
$$\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]+\frac{1}{3}\Big(\frac{7}{2}-n\Big)\,\text{AppellF1}\Big[\frac{3}{2},\frac{9}{2}-n,-\frac{1}{2}+n,\frac{5}{2},$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)+$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\Big(\Big(1-2\,n\Big)\,\Big(-\frac{3}{5}\Big(\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{7}{2}-n,\frac{3}{2}+n,\frac{7}{2},$$
$$\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[$$
$$\frac{1}{2}(c+d\,x)\Big]+\frac{3}{5}\Big(\frac{7}{2}-n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{9}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$
$$-\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]\Big)+$$
$$\Big(7-2\,n\Big)\,\Big(-\frac{3}{5}\Big(-\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{5}{2},\frac{9}{2}-n,\frac{1}{2}+n,\frac{7}{2},\text{Tan}\Big[\frac{1}{2}(c+d\,x)\Big]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{3}{5}\left(\frac{9}{2}-n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{11}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(3\,\text{AppellF1}\Big[\frac{1}{2},\,\frac{7}{2}-n,\,-\frac{1}{2}+n,\,\frac{3}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]+$$

$$\Big(\left(1-2\,n\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]+$$

$$\left(7-2\,n\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\Big)\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big)^2-$$

$$\Big(50\,\left(A-C\right)\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{7}{2}-n,\,-\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2$$

$$\Big(\Big(\left(1-2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]+$$

$$\left(7-2\,n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\Big)\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+5\,\Big(-\frac{3}{5}\left(-\frac{1}{2}+n\right)$$

$$\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+\frac{3}{5}\left(\frac{7}{2}-n\right)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Big)+$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\Big(\left(1-2\,n\right)\,\Big(-\frac{5}{7}\left(\frac{1}{2}+n\right)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{2}-n,\,\frac{3}{2}+n,\,\frac{9}{2},$$

$$\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,\,-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\left(c+d\,x\right)\Big]+\frac{5}{7}\left(\frac{7}{2}-n\right)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{9}{2}-n,\,\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Big)+$$

$$\left(7-2\,n\right)\,\Big(-\frac{5}{7}\left(-\frac{1}{2}+n\right)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{9}{2}-n,\,\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]+$$

$$\frac{5}{7}\left(\frac{9}{2}-n\right)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{11}{2}-n,\,-\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2,$$

$$-\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\Big]\,\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]^2\,\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(5\,\text{AppellF1}\Big[\frac{3}{2},\,\frac{7}{2}-n,\,-\frac{1}{2}+n,\,\frac{5}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\Big(\big(1-2\,n\big)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\big(7-2\,n\big)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big)^2+$$

$$\Big(21\,(A-B+C)\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^4$$

$$\Big(\Big(\big(-1+2\,n\big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\big(-7+2\,n\big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\Big)\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]-7\,\Big(-\frac{5}{7}\,\Big(-\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\frac{5}{7}\,\Big(\frac{7}{2}-n\Big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)+$$

$$\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\Big(\big(-1+2\,n\big)\,\Big(-\frac{7}{9}\,\Big(\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{9}{2},\,\frac{7}{2}-n,\,\frac{3}{2}+n,\,\frac{11}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\frac{7}{9}\,\Big(\frac{7}{2}-n\Big)\,\text{AppellF1}\Big[\frac{9}{2},\,\frac{9}{2}-n,\,\frac{1}{2}+n,\,\frac{11}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)+$$

$$\big(-7+2\,n\big)\,\Big(-\frac{7}{9}\,\Big(-\frac{1}{2}+n\Big)\,\text{AppellF1}\Big[\frac{9}{2},\,\frac{9}{2}-n,\,\frac{1}{2}+n,\,\frac{11}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]+\frac{7}{9}\,\Big(\frac{9}{2}-n\Big)\,\text{AppellF1}\Big[\frac{9}{2},\,\frac{11}{2}-n,\,-\frac{1}{2}+n,\,\frac{11}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]\,\text{Sec}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]\Big)\Big)\Big)\Big)\Big/$$

$$\Big(-7\,\text{AppellF1}\Big[\frac{5}{2},\,\frac{7}{2}-n,\,-\frac{1}{2}+n,\,\frac{7}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\Big(\big(-1+2\,n\big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{7}{2}-n,\,\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,\,-\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2\Big]+\big(-7+2\,n\big)\,\text{AppellF1}\Big[\frac{7}{2},\,\frac{9}{2}-n,\,-\frac{1}{2}+n,\,\frac{9}{2},\,\text{Tan}\Big[\frac{1}{2}\,(c+d\,x)\Big]^2,$$

$$-\text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big]\Big)\ \text{Tan}\left[\frac{1}{2}(c+d x)\right]^2\Big)^2\Big)\Big)\Big)$$

Problem 383: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (a+a\,\text{Cos}[e+f x])^m \left(A+B\,\text{Cos}[e+f x]+C\,\text{Cos}[e+f x]^2\right) dx$$

Optimal (type 5, 183 leaves, 4 steps):

$$-\frac{(C-B(2+m))\,(a+a\,\text{Cos}[e+f x])^m\,\text{Sin}[e+f x]}{f(1+m)(2+m)}+\frac{C\,(a+a\,\text{Cos}[e+f x])^{1+m}\,\text{Sin}[e+f x]}{a f(2+m)}+$$
$$\frac{1}{f(1+m)(2+m)}2^{\frac{1}{2}+m}\left(B m(2+m)+C\left(1+m+m^2\right)+A\left(2+3m+m^2\right)\right)(1+\text{Cos}[e+f x])^{-\frac{1}{2}-m}$$
$$(a+a\,\text{Cos}[e+f x])^m\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1}{2}-m,\frac{3}{2},\frac{1}{2}(1-\text{Cos}[e+f x])\right]\text{Sin}[e+f x]$$

Result (type 5, 376 leaves):

$$\frac{1}{f}\,i\,4^{-1-m}\,e^{i f m x}\left(1+e^{i(e+f x)}\right)^{-2m}$$
$$\left(e^{-\frac{1}{2}i(e+f x)}\left(1+e^{i(e+f x)}\right)\right)^{2m}\text{Cos}\left[\frac{1}{2}(e+f x)\right]^{-2m}(a(1+\text{Cos}[e+f x]))^m$$
$$\left(\frac{1}{2+m}C\,e^{-i(2e+f(2+m)x)}\,\text{Hypergeometric2F1}\left[-2-m,-2m,-1-m,-e^{i(e+f x)}\right]+\right.$$
$$\frac{2B\,e^{-i(e+f(1+m)x)}\,\text{Hypergeometric2F1}\left[-1-m,-2m,-m,-e^{i(e+f x)}\right]}{1+m}+$$
$$\frac{2B\,e^{i(e-f(-1+m)x)}\,\text{Hypergeometric2F1}\left[1-m,-2m,2-m,-e^{i(e+f x)}\right]}{-1+m}+$$
$$\frac{C\,e^{2ie-if(-2+m)x}\,\text{Hypergeometric2F1}\left[2-m,-2m,3-m,-e^{i(e+f x)}\right]}{-2+m}+$$
$$\frac{4A\,e^{-ifmx}\,\text{Hypergeometric2F1}\left[-2m,-m,1-m,-e^{i(e+f x)}\right]}{m}+$$
$$\left.\frac{2C\,e^{-ifmx}\,\text{Hypergeometric2F1}\left[-2m,-m,1-m,-e^{i(e+f x)}\right]}{m}\right)$$

Problem 384: Result unnecessarily involves imaginary or complex numbers.

$$\int (a+a\,\text{Cos}[c+d x])^{2/3}\left(A+B\,\text{Cos}[c+d x]+C\,\text{Cos}[c+d x]^2\right) dx$$

Optimal (type 5, 144 leaves, 4 steps):

$$\frac{3\,(8\,B-3\,C)\,(a+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sin}[c+d\,x]}{40\,d}+\frac{3\,C\,(a+a\,\text{Cos}[c+d\,x])^{5/3}\,\text{Sin}[c+d\,x]}{8\,a\,d}+$$
$$\left((40\,A+16\,B+19\,C)\,(a+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Hypergeometric2F1}\left[-\frac{1}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x])\right]\right.$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(10\times 2^{5/6}\,d\,(1+\text{Cos}[c+d\,x])^{7/6}\right)$$

Result (type 5, 137 leaves) :

$$\frac{1}{320\,d}3\,\left(a\,(1+\text{Cos}[c+d\,x])\right)^{2/3}\,\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]^2$$
$$\left(-2\,\mathrm{i}\,(40\,A+16\,B+19\,C)\,\text{Hypergeometric2F1}\left[\frac{1}{3},\frac{2}{3},\frac{4}{3},-e^{\mathrm{i}\,(c+d\,x)}\right]\right.$$
$$(1+\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x])^{2/3}+$$
$$\left.2\,(40\,A+32\,B+28\,C+2\,(8\,B+7\,C)\,\text{Cos}[c+d\,x]+5\,C\,\text{Cos}[2\,(c+d\,x)])\,\text{Sin}[c+d\,x]\right)$$

Problem 385: Unable to integrate problem.

$$\int(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\left(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)\,dx$$

Optimal (type 5, 144 leaves, 4 steps) :

$$\frac{3\,(7\,B-3\,C)\,(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\text{Sin}[c+d\,x]}{28\,d}+\frac{3\,C\,(a+a\,\text{Cos}[c+d\,x])^{4/3}\,\text{Sin}[c+d\,x]}{7\,a\,d}+$$
$$\left((28\,A+7\,B+13\,C)\,(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\text{Hypergeometric2F1}\left[\frac{1}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x])\right]\right.$$
$$\left.\text{Sin}[c+d\,x]\right)\Big/\left(14\times 2^{1/6}\,d\,(1+\text{Cos}[c+d\,x])^{5/6}\right)$$

Result (type 8, 37 leaves) :

$$\int(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\left(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2\right)\,dx$$

Problem 386: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2}{(a+a\,\text{Cos}[c+d\,x])^{1/3}}\,dx$$

Optimal (type 5, 144 leaves, 4 steps) :

$$\frac{3\,(5\,B-3\,C)\,\text{Sin}[c+d\,x]}{10\,d\,(a+a\,\text{Cos}[c+d\,x])^{1/3}}+\frac{3\,C\,(a+a\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sin}[c+d\,x]}{5\,a\,d}+$$
$$\left((10\,A-5\,B+7\,C)\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{6},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x])\right]\,\text{Sin}[c+d\,x]\right)\Big/$$
$$\left(5\times 2^{5/6}\,d\,(1+\text{Cos}[c+d\,x])^{1/6}\,(a+a\,\text{Cos}[c+d\,x])^{1/3}\right)$$

Result (type 5, 105 leaves) :

$$\Big(-3\,\mathrm{i}\,(10\,A-5\,B+7\,C)\,\text{Hypergeometric2F1}\Big[\frac{1}{3},\frac{2}{3},\frac{4}{3},-e^{\mathrm{i}\,(c+d\,x)}\Big]\,(1+\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x])^{2/3}+3\,(5\,B-C+2\,C\,\text{Cos}[c+d\,x])\,\text{Sin}[c+d\,x]\Big)\Big/\Big(10\,d\,(a\,(1+\text{Cos}[c+d\,x]))^{1/3}\Big)$$

Problem 387: Unable to integrate problem.

$$\int\frac{A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2}{(a+a\,\text{Cos}[c+d\,x])^{2/3}}\,dx$$

Optimal (type 5, 144 leaves, 4 steps):

$$\frac{3\,(A-B+C)\,\text{Sin}[c+d\,x]}{d\,(a+a\,\text{Cos}[c+d\,x])^{2/3}}+\frac{3\,C\,(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\text{Sin}[c+d\,x]}{4\,a\,d}-\Big((4\,A-8\,B+7\,C)\,(a+a\,\text{Cos}[c+d\,x])^{1/3}\,\text{Hypergeometric2F1}\Big[\frac{1}{6},\frac{1}{2},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x])\Big]\,\text{Sin}[c+d\,x]\Big)\Big/\Big(2\times 2^{1/6}\,a\,d\,(1+\text{Cos}[c+d\,x])^{5/6}\Big)$$

Result (type 8, 37 leaves):

$$\int\frac{A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2}{(a+a\,\text{Cos}[c+d\,x])^{2/3}}\,dx$$

Problem 388: Result more than twice size of optimal antiderivative.

$$\int(a+b\,\text{Cos}[c+d\,x])^{2/3}\,(A+B\,\text{Cos}[c+d\,x]+C\,\text{Cos}[c+d\,x]^2)\,dx$$

Optimal (type 6, 290 leaves, 8 steps):

$$\frac{3\,C\,(a+b\,\text{Cos}[c+d\,x])^{5/3}\,\text{Sin}[c+d\,x]}{8\,b\,d}+\Big((a+b)\,(8\,b\,B-3\,a\,C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},-\frac{5}{3},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x]),\frac{b\,(1-\text{Cos}[c+d\,x])}{a+b}\Big]\,(a+b\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sin}[c+d\,x]\Big)\Big/\Big(4\,\sqrt{2}\,b^2\,d\,\sqrt{1+\text{Cos}[c+d\,x]}\,\Big(\frac{a+b\,\text{Cos}[c+d\,x]}{a+b}\Big)^{2/3}\Big)+\Big((8\,A\,b^2-8\,a\,b\,B+3\,a^2\,C+5\,b^2\,C)\,\text{AppellF1}\Big[\frac{1}{2},\frac{1}{2},-\frac{2}{3},\frac{3}{2},\frac{1}{2}\,(1-\text{Cos}[c+d\,x]),\frac{b\,(1-\text{Cos}[c+d\,x])}{a+b}\Big]\,(a+b\,\text{Cos}[c+d\,x])^{2/3}\,\text{Sin}[c+d\,x]\Big)\Big/\Big(4\,\sqrt{2}\,b^2\,d\,\sqrt{1+\text{Cos}[c+d\,x]}\,\Big(\frac{a+b\,\text{Cos}[c+d\,x]}{a+b}\Big)^{2/3}\Big)$$

Result (type 6, 1607 leaves):

$$-\frac{1}{2\,b\,d}3\,a\,A\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Csc}[c+d\,x]-$$

$$\frac{1}{5\,d}3\,B\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Csc}[c+d\,x]-$$

$$\frac{1}{80\,b\,d}57\,a\,C\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Csc}[c+d\,x]+$$

$$\frac{1}{d}A\,b\left(\frac{1}{2\,b^2}3\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Csc}[c+d\,x]-\frac{1}{5\,b^2}3\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{5/3}\text{Csc}[c+d\,x]\right)+$$

$$\frac{1}{5\,d}2\,a\,B\left(\frac{1}{2\,b^2}3\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{2/3}\text{Csc}[c+d\,x]-\frac{1}{5\,b^2}3\,\text{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\,\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\,\left(a+b\,\text{Cos}[c+d\,x]\right)^{5/3}\text{Csc}[c+d\,x]\right)-$$

$$\frac{1}{20\,b\,d}3\,a^2\,C\left(\frac{1}{2\,b^2}3\,a\,\text{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\right.$$

$$\sqrt{\frac{-b-b\,\mathrm{Cos}[c+d\,x]}{a-b}}\ \sqrt{\frac{b-b\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{2/3}\mathrm{Csc}[c+d\,x]-$$

$$\frac{1}{5\,b^2}3\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]$$

$$\left.\sqrt{\frac{-b-b\,\mathrm{Cos}[c+d\,x]}{a-b}}\ \sqrt{\frac{b-b\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{5/3}\mathrm{Csc}[c+d\,x]\right)+$$

$$\frac{1}{8\,d}5\,b\,C\left(\frac{1}{2\,b^2}3\,a\,\mathrm{AppellF1}\left[\frac{2}{3},\frac{1}{2},\frac{1}{2},\frac{5}{3},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\right.$$

$$\sqrt{\frac{-b-b\,\mathrm{Cos}[c+d\,x]}{a-b}}\ \sqrt{\frac{b-b\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{2/3}\mathrm{Csc}[c+d\,x]-$$

$$\frac{1}{5\,b^2}3\,\mathrm{AppellF1}\left[\frac{5}{3},\frac{1}{2},\frac{1}{2},\frac{8}{3},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\mathrm{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]$$

$$\left.\sqrt{\frac{-b-b\,\mathrm{Cos}[c+d\,x]}{a-b}}\ \sqrt{\frac{b-b\,\mathrm{Cos}[c+d\,x]}{a+b}}\ \left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{5/3}\mathrm{Csc}[c+d\,x]\right)+$$

$$\frac{\left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{2/3}\left(\frac{3\,(4\,b\,B+a\,C)\,\mathrm{Sin}[c+d\,x]}{20\,b}+\frac{3}{16}C\,\mathrm{Sin}\left[2\,(c+d\,x)\right]\right)}{d}$$

Problem 389: Result more than twice size of optimal antiderivative.

$$\int \left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\left(A+B\,\mathrm{Cos}[c+d\,x]+C\,\mathrm{Cos}[c+d\,x]^2\right)\,dx$$

Optimal (type 6, 290 leaves, 8 steps):

$$\frac{3\,C\,\left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{4/3}\mathrm{Sin}[c+d\,x]}{7\,b\,d}+$$

$$\left(\sqrt{2}\,(a+b)\,(7\,b\,B-3\,a\,C)\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{4}{3},\frac{3}{2},\frac{1}{2}\left(1-\mathrm{Cos}[c+d\,x]\right),\frac{b\,\left(1-\mathrm{Cos}[c+d\,x]\right)}{a+b}\right]\right.$$

$$\left.\left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\mathrm{Sin}[c+d\,x]\right)\Big/\left(7\,b^2\,d\,\sqrt{1+\mathrm{Cos}[c+d\,x]}\,\left(\frac{a+b\,\mathrm{Cos}[c+d\,x]}{a+b}\right)^{1/3}\right)+$$

$$\left(\sqrt{2}\,\left(7\,A\,b^2-7\,a\,b\,B+3\,a^2\,C+4\,b^2\,C\right)\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-\frac{1}{3},\frac{3}{2},\frac{1}{2}\left(1-\mathrm{Cos}[c+d\,x]\right),\right.\right.$$

$$\left.\left.\frac{b\,\left(1-\mathrm{Cos}[c+d\,x]\right)}{a+b}\right]\left(a+b\,\mathrm{Cos}[c+d\,x]\right)^{1/3}\mathrm{Sin}[c+d\,x]\right)\Big/$$

$$\left(7\,b^2\,d\,\sqrt{1+\mathrm{Cos}[c+d\,x]}\,\left(\frac{a+b\,\mathrm{Cos}[c+d\,x]}{a+b}\right)^{1/3}\right)$$

Result (type 6, 1597 leaves):

$$-\frac{1}{b\,d}3\,a\,A\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-$$

$$\frac{1}{4\,d}3\,B\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-$$

$$\frac{1}{28\,b\,d}39\,a\,C\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]+$$

$$\frac{1}{d}A\,b\left(\frac{1}{b^2}3\,a\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-\frac{1}{4\,b^2}3\,\text{AppellF1}\left[\frac{4}{3},\frac{1}{2},\frac{1}{2},\frac{7}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{4/3}\text{Csc}[c+d\,x]\right)+$$

$$\frac{1}{4\,d}a\,B\left(\frac{1}{b^2}3\,a\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-\frac{1}{4\,b^2}3\,\text{AppellF1}\left[\frac{4}{3},\frac{1}{2},\frac{1}{2},\frac{7}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{4/3}\text{Csc}[c+d\,x]\right)-$$

$$\frac{1}{28\,b\,d}3\,a^2\,C\left(\frac{1}{b^2}3\,a\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\right.$$
$$\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-$$
$$\frac{1}{4\,b^2}3\,\text{AppellF1}\left[\frac{4}{3},\frac{1}{2},\frac{1}{2},\frac{7}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]$$
$$\left.\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{4/3}\text{Csc}[c+d\,x]\right)+$$
$$\frac{1}{7\,d}4\,b\,C\left(\frac{1}{b^2}3\,a\,\text{AppellF1}\left[\frac{1}{3},\frac{1}{2},\frac{1}{2},\frac{4}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]\right.$$
$$\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\text{Csc}[c+d\,x]-$$
$$\frac{1}{4\,b^2}3\,\text{AppellF1}\left[\frac{4}{3},\frac{1}{2},\frac{1}{2},\frac{7}{3},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(1-\frac{a}{b}\right)b},-\frac{a+b\,\text{Cos}[c+d\,x]}{\left(-1-\frac{a}{b}\right)b}\right]$$
$$\left.\sqrt{\frac{-b-b\,\text{Cos}[c+d\,x]}{a-b}}\sqrt{\frac{b-b\,\text{Cos}[c+d\,x]}{a+b}}\left(a+b\,\text{Cos}[c+d\,x]\right)^{4/3}\text{Csc}[c+d\,x]\right)+$$
$$\frac{\left(a+b\,\text{Cos}[c+d\,x]\right)^{1/3}\left(\frac{3\,(7\,b\,B+a\,C)\,\text{Sin}[c+d\,x]}{28\,b}+\frac{3}{14}C\,\text{Sin}\left[2\left(c+d\,x\right)\right]\right)}{d}$$

Problem 392: Unable to integrate problem.

$$\int\left(a+b\,\text{Cos}[e+f\,x]\right)^m\left(A+\left(A+C\right)\text{Cos}[e+f\,x]+C\,\text{Cos}[e+f\,x]^2\right)dx$$

Optimal (type 6, 215 leaves, 7 steps):

$$\left(4\sqrt{2}\,C\,\text{AppellF1}\left[\frac{1}{2},-\frac{3}{2},-m,\frac{3}{2},\frac{1}{2}\left(1-\text{Cos}[e+f\,x]\right),\frac{b\left(1-\text{Cos}[e+f\,x]\right)}{a+b}\right]\right.$$
$$\left.\left(a+b\,\text{Cos}[e+f\,x]\right)^m\left(\frac{a+b\,\text{Cos}[e+f\,x]}{a+b}\right)^{-m}\text{Sin}[e+f\,x]\right)\Big/\left(f\sqrt{1+\text{Cos}[e+f\,x]}\right)+$$
$$\left(2\sqrt{2}\left(A-C\right)\text{AppellF1}\left[\frac{1}{2},-\frac{1}{2},-m,\frac{3}{2},\frac{1}{2}\left(1-\text{Cos}[e+f\,x]\right),\frac{b\left(1-\text{Cos}[e+f\,x]\right)}{a+b}\right]\right.$$
$$\left.\left(a+b\,\text{Cos}[e+f\,x]\right)^m\left(\frac{a+b\,\text{Cos}[e+f\,x]}{a+b}\right)^{-m}\text{Sin}[e+f\,x]\right)\Big/\left(f\sqrt{1+\text{Cos}[e+f\,x]}\right)$$

Result (type 8, 37 leaves):

$$\int (a+b\,\mathrm{Cos}[e+f\,x])^m\,(A+(A+C)\,\mathrm{Cos}[e+f\,x]+C\,\mathrm{Cos}[e+f\,x]^2)\,dx$$

Problem 393: Result more than twice size of optimal antiderivative.

$$\int (a+b\,\mathrm{Cos}[e+f\,x])^m\,(A+B\,\mathrm{Cos}[e+f\,x]+C\,\mathrm{Cos}[e+f\,x]^2)\,dx$$

Optimal (type 6, 303 leaves, 8 steps):

$$\frac{C\,(a+b\,\mathrm{Cos}[e+f\,x])^{1+m}\,\mathrm{Sin}[e+f\,x]}{b\,f\,(2+m)}-\left(\sqrt{2}\,(a+b)\,(a\,C-b\,B\,(2+m))\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-1-m,\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Cos}[e+f\,x]),\frac{b\,(1-\mathrm{Cos}[e+f\,x])}{a+b}\right]\,(a+b\,\mathrm{Cos}[e+f\,x])^m\,\left(\frac{a+b\,\mathrm{Cos}[e+f\,x]}{a+b}\right)^{-m}\,\mathrm{Sin}[e+f\,x]\right)\Big/\left(b^2\,f\,(2+m)\,\sqrt{1+\mathrm{Cos}[e+f\,x]}\right)+\left(\sqrt{2}\,(a^2\,C+b^2\,C\,(1+m)+A\,b^2\,(2+m)-a\,b\,B\,(2+m))\,\mathrm{AppellF1}\left[\frac{1}{2},\frac{1}{2},-m,\frac{3}{2},\frac{1}{2}\,(1-\mathrm{Cos}[e+f\,x]),\frac{b\,(1-\mathrm{Cos}[e+f\,x])}{a+b}\right]\,(a+b\,\mathrm{Cos}[e+f\,x])^m\,\left(\frac{a+b\,\mathrm{Cos}[e+f\,x]}{a+b}\right)^{-m}\,\mathrm{Sin}[e+f\,x]\right)\Big/\left(b^2\,f\,(2+m)\,\sqrt{1+\mathrm{Cos}[e+f\,x]}\right)$$

Result (type 6, 16 189 leaves):

$$\left(6\,(a+b)\,\left(A\,(a+b\,\mathrm{Cos}[e+f\,x])^m+\frac{1}{2}\,C\,(a+b\,\mathrm{Cos}[e+f\,x])^m+B\,\mathrm{Cos}[e+f\,x]\,(a+b\,\mathrm{Cos}[e+f\,x])^m+\frac{1}{2}\,C\,(a+b\,\mathrm{Cos}[e+f\,x])^m\,\mathrm{Cos}[2\,(e+f\,x)]\right)\right.$$
$$\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\,\left(a+\frac{b-b\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}\right)^m\,\left(\left(A\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\left(1+\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\right)\Big/\right.$$
$$\left(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+2\right.$$
$$\left((a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-\right.$$
$$(a+b)\,(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Bigg)-$$

$$\Bigg(\mathrm{B\,AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]+2$$

$$\Bigg((a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]-$$

$$(a+b)\,(1+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},2+m,-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(\mathrm{C\,AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]+2$$

$$\Bigg((a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]-$$

$$(a+b)\,(1+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},2+m,-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(2\,\mathrm{B\,AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\Bigg)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+2\right.$$
$$\left(\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-\right.$$
$$(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)-$$
$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$
$$\left.\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\Big/$$
$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+2\right.$$
$$\left(\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-\right.$$
$$(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+$$
$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\Big/$$
$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+2\right.$$
$$\left(\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-\right.$$
$$(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$
$$\left.\left.\left.\left.\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\right)\right)\Big/$$

$$\Bigg(f\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^3\Bigg(\frac{1}{\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^3}6(a+b)\,m\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]$$

$$\left(-\frac{b\,\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]}{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}-\left(\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\right.\right.$$

$$\left.\left.\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\left(b-b\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\right)\Big/\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)$$

$$\left(a+\frac{b-b\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}\right)^{-1+m}\Bigg(\Bigg(\Bigg(A\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Big/$$

$$\left(3(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)-$$

$$\left(B\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right.$$

$$\left.\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\right)\Big/$$

$$\left(3(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\mathrm{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.\right.$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)(1+m)\,\mathrm{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(C\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(2\,B\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)-$$

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)\Bigg)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)+$$

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\right.$$

$$\left.\left.\left.\left.-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)\right)-$$

$$\frac{1}{\left(1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^4}\,18\,(a+b)\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2$$

$$\left(a+\frac{b-b\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}\right)^m$$

$$\left(\left(\left(A\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]\right.\right.\right.$$

$$\left.\left(1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\right)^2\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\right.\right.$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)-$$

$$\Bigg(\text{B AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,\text{m AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(\text{C AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,\text{m AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)+$$

$$\Bigg(2\,\text{B AppellF1}\Big[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-$$

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+$$

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},\right.$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)\Bigg) +$$

$$\frac{1}{\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^3}\,3\,(a+b)\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\left(a+\frac{b-b\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}\right)^m$$

$$\Bigg(\Bigg(\text{A AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] +$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) -$$

$$\Bigg(\text{B AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right] +$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big] - (a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg) +$$

$$\Bigg(\text{C AppellF1}\left[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2, -\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)^2\Bigg)\Bigg/$$

$$\Bigg(3\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

$$\left.-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]-\left(a+b\right)\left(1+m\right)\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Bigg)+$$

$$\Bigg(2\,B\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

$$\left.-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]-\left(a+b\right)\left(2+m\right)\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\Bigg)-$$

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3\left(a+b\right)\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]+$$

$$2\Bigg(\left(a-b\right)m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,\right.$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]-(a+b)\,(2+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},$$

$$-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$

$$\left(4\,C\,\mathrm{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\right)\Big/$$

$$\Bigg(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},3+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]-(a+b)\,(3+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},4+m,-m,\frac{5}{2},$$

$$-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)\Bigg)+$$

$$\frac{1}{\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^3}\,6\,(a+b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\left(a+\frac{b-b\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}\right)^m$$

$$\Bigg(\Bigg(2\,A\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\mathrm{Sec}\left[\frac{1}{2}(e+fx)\right]^2\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]\left(1+\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\mathrm{AppellF1}\Big[\frac{3}{2},1+m,1-m,\frac{5}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,$$

$$-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\mathrm{AppellF1}\Big[\frac{3}{2},2+m,-m,\frac{5}{2},$$

$$-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\Big]\Bigg)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)-$$

$$\Bigg(2\,B\,\mathrm{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$

$$\Bigg(2\,C\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2 \text{Tan}\left[\frac{1}{2}(e+fx)\right]\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)\Bigg)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]+$$

$$2\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]-(a+b)(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\Bigg)\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\Bigg)+$$

$$\Bigg(A\Bigg(\frac{1}{3(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]-\frac{1}{3}(1+m)$$

$$\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}(e+fx)\right]^2\text{Tan}\left[\frac{1}{2}(e+fx)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(e+fx)\right]^2\right)^2\Bigg)\Bigg/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)-$$

$$\left(B\left(\frac{1}{3\,(a+b)}\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{3}\,(1+m)$$

$$\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+$$

$$\left(C\left(\frac{1}{3\,(a+b)}\,(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{3}\,(1+m)$$

$$\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left.\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\,\left(1+\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)^2\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)+$$

$$\left(2\,B\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\right.$$

$$\left.\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\right)-$$

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)\Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\,\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]-(a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+$$

$$\Bigg(2\,B\,\Bigg(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{1}{3}(2+m)$$

$$\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]-(a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-$$

$$\Bigg(4\,C\,\Bigg(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{1}{3}(2+m)$$

$$\text{AppellF1}\Big[\frac{3}{2},3+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]\Bigg)\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)\Bigg)\Big/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\Big]+$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)+$$

$$\Bigg(4\,C\left(\frac{1}{3(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{1}{3}(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\Bigg)\Bigg/$$

$$\Bigg(3(a+b)\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\Bigg)-$$

$$\Bigg(A\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\left(1+\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2\Bigg(2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]+$$

$$3\,(a+b)\,\left(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{1}{3}(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\left((a-b)\,m\left(-\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2},1+m,2-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{3}{5}(1+m)\,\text{AppellF1}\left[\frac{5}{2},2+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)-(a+b)\,(1+m)\left(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},2+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]-\frac{3}{5}(2+m)\,\text{AppellF1}\left[\frac{5}{2},3+m,-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}(e+f x)\right]^2\text{Tan}\left[\frac{1}{2}(e+f x)\right]\right)\right)\right)\right)\Bigg/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},1+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]+2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},1+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]-(a+b)\,(1+m)\,\text{AppellF1}\left[\frac{3}{2},2+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}(e+f x)\right]^2\right)^2+$$

$$\Bigg(\text{B AppellF1}\Big[\frac{1}{2}, 1+m, -m, \frac{3}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]$$

$$\Big(1+\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\Big)^2\Bigg(2\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m,$$

$$\frac{5}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big] -$$

$$(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]\Bigg)\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big] +$$

$$3\,(a+b)\,\Bigg(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2}, 1+m, 1-m, \frac{5}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big] - \frac{1}{3}\,(1+m)$$

$$\text{AppellF1}\Big[\frac{3}{2}, 2+m, -m, \frac{5}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]$$

$$\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]\Bigg) + 2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2\,\Bigg((a-b)\,m$$

$$\Bigg(-\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\Big[\frac{5}{2}, 1+m, 2-m, \frac{7}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big] -$$

$$\frac{3}{5}\,(1+m)\,\text{AppellF1}\Big[\frac{5}{2}, 2+m, 1-m, \frac{7}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]\Bigg) -$$

$$(a+b)\,(1+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\Big[\frac{5}{2}, 2+m, 1-m, \frac{7}{2},$$

$$-\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2, -\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}(e+fx)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}(e+fx)\Big]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}(e+fx)\Big] - \frac{3}{5}\,(2+m)\,\text{AppellF1}\Big[\frac{5}{2}, 3+m, -m, \frac{7}{2}, -\text{Tan}\Big[\frac{1}{2}(e+fx)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\Big)\Big)\Big)\Big)\Big)\Big/$$

$$\Big(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]+$$

$$2\,\Big(\,(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\Big)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)^2-$$

$$\Big(C\,\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]$$

$$\Big(1+\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\Big)^2\,\Big(2\,\Big(\,(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,$$

$$\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]-$$

$$(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\Big)\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]+$$

$$3\,(a+b)\,\Big(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]-\frac{1}{3}\,(1+m)$$

$$\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]$$

$$\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]\Big)+2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2\,\Big(\,(a-b)\,m$$

$$\Big(-\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\Big[\frac{5}{2},\,1+m,\,2-m,\,\frac{7}{2},\,-\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}(e+f\,x)\right]-$$

$$\frac{3}{5}\,(1+m)\,\text{AppellF1}\Big[\frac{5}{2},\,2+m,\,1-m,\,\frac{7}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]\Bigg)-$$

$$(a+b)\,(1+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\Big[\frac{5}{2},\,2+m,\,1-m,\,\frac{7}{2},$$

$$-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,\,-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\,(e+f\,x)\Big]-\frac{3}{5}\,(2+m)\,\text{AppellF1}\Big[\frac{5}{2},\,3+m,\,-m,\,\frac{7}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,1+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,\,-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]+$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,1+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]-(a+b)\,(1+m)\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,\,-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]\Bigg)\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Bigg)^2-$$

$$\Bigg(2\,B\,\text{AppellF1}\Big[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,\,-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]$$

$$\Big(1+\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\Big)\,\Bigg(2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,1-m,$$

$$\frac{5}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,\,-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]-$$

$$(a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\big[\frac{1}{2}\,(e+f\,x)\big]^2}{a+b}\Big]\Bigg)\,\text{Sec}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2\,\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]+$$

$$3\,(a+b)\,\Bigg(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\Big[\frac{1}{2}\,(e+f\,x)\Big]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{3}\,(2+m)$$

$$\text{AppellF1}\left[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\Bigg((a-b)\,m$$

$$\Bigg(-\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2},\,2+m,\,2-m,\,\frac{7}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-$$

$$\frac{3}{5}\,(2+m)\,\text{AppellF1}\left[\frac{5}{2},\,3+m,\,1-m,\,\frac{7}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)-$$

$$(a+b)\,(2+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\left[\frac{5}{2},\,3+m,\,1-m,\,\frac{7}{2},\right.$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\,(e+f\,x)\Big]-\frac{3}{5}\,(3+m)\,\text{AppellF1}\left[\frac{5}{2},\,4+m,\,-m,\,\frac{7}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+$$

$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},\,2+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,-m,\,\frac{5}{2},$$

$$\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)^2+$$

$$\Bigg(4\,C\,\text{AppellF1}\left[\frac{1}{2},\,2+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left(1+\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\right)\left(2\left(\left(a-b\right) m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]-\left(a+b\right)\left(2+m\right)\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]+3\left(a+b\right)\left(\frac{1}{3\left(a+b\right)}\left(a-b\right) m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]-\frac{1}{3}\left(2+m\right)\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2\left(\left(a-b\right) m\left(-\frac{1}{5\left(a+b\right)}3\left(a-b\right)\left(1-m\right)\text{AppellF1}\left[\frac{5}{2},2+m,2-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]-\frac{3}{5}\left(2+m\right)\text{AppellF1}\left[\frac{5}{2},3+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)-\left(a+b\right)\left(2+m\right)\left(\frac{1}{5\left(a+b\right)}3\left(a-b\right) m\,\text{AppellF1}\left[\frac{5}{2},3+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]-\frac{3}{5}\left(3+m\right)\text{AppellF1}\left[\frac{5}{2},4+m,-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2,-\frac{\left(a-b\right)\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\left(e+f x\right)\right]^2\text{Tan}\left[\frac{1}{2}\left(e+f x\right)\right]\right)\right)\right)\right) \Big/$$

$$\left(3\,(a+b)\,\text{AppellF1}\left[\frac{1}{2},2+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]+\right.$$

$$2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},2+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-(a+b)\,(2+m)\,\text{AppellF1}\left[\frac{3}{2},3+m,-m,\frac{5}{2},\right.$$

$$\left.\left.-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big)^2-$$

$$\left(4\,C\,\text{AppellF1}\left[\frac{1}{2},3+m,-m,\frac{3}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right.$$

$$\left(2\left((a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},\right.\right.\right.$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]-$$

$$(a+b)\,(3+m)\,\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$\left.\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\right)\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]+$$

$$3\,(a+b)\left(\frac{1}{3\,(a+b)}(a-b)\,m\,\text{AppellF1}\left[\frac{3}{2},3+m,1-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-\frac{1}{3}\,(3+m)$$

$$\text{AppellF1}\left[\frac{3}{2},4+m,-m,\frac{5}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]$$

$$\left.\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\right)+2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Big((a-b)\,m$$

$$\left(-\frac{1}{5\,(a+b)}3\,(a-b)\,(1-m)\,\text{AppellF1}\left[\frac{5}{2},3+m,2-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.\right.$$

$$\left.-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\right]\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]-$$

$$\frac{3}{5}\,(3+m)\,\text{AppellF1}\left[\frac{5}{2},4+m,1-m,\frac{7}{2},-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\right.$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)-$$

$$(a+b)\,(3+m)\,\Bigg(\frac{1}{5\,(a+b)}3\,(a-b)\,m\,\text{AppellF1}\Big[\frac{5}{2},\,4+m,\,1-m,\,\frac{7}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\Big[$$

$$\frac{1}{2}\,(e+f\,x)\Big]-\frac{3}{5}\,(4+m)\,\text{AppellF1}\Big[\frac{5}{2},\,5+m,\,-m,\,\frac{7}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\,\text{Sec}\left[\frac{1}{2}\,(e+f\,x)\right]^2\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]\Bigg)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,(a+b)\,\text{AppellF1}\Big[\frac{1}{2},\,3+m,\,-m,\,\frac{3}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]+$$

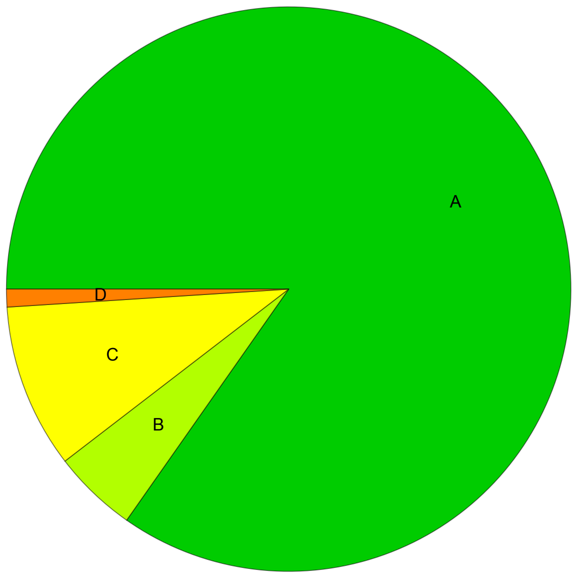
$$2\,\Bigg((a-b)\,m\,\text{AppellF1}\Big[\frac{3}{2},\,3+m,\,1-m,\,\frac{5}{2},\,-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,$$

$$-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]-(a+b)\,(3+m)\,\text{AppellF1}\Big[\frac{3}{2},\,4+m,\,-m,\,\frac{5}{2},$$

$$-\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2,\,-\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2}{a+b}\Big]\Bigg)\,\text{Tan}\left[\frac{1}{2}\,(e+f\,x)\right]^2\Bigg)^2\Bigg)\Bigg)\Bigg)$$

Summary of Integration Test Results

393 integration problems



A - 333 optimal antiderivatives

B - 19 more than twice size of optimal antiderivatives

C - 37 unnecessarily complex antiderivatives

D - 4 unable to integrate problems

E - 0 integration timeouts