Mathematica 11.3 Integration Test Results

Test results for the 96 problems in "1.2.3.3 (d+e x^n)^q (a+b x^n+c x^(2 n))^p.m"

Problem 5: Result is not expressed in closed-form.

$$\int \frac{d + e\,x^4}{d^2 + b\,x^4 + e^2\,x^8}\,dx$$

Optimal (type 3, 791 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}} - \frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}} +$$

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}} + \frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}} -$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}} +$$

$$\frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{-b+2de}}} -$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}} + \frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{-b+2de}}}$$

Result (type 7, 67 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[d^2 + b\,\#1^4 + e^2\,\#1^8\,\&,\ \frac{d\,\text{Log}[x-\#1] + e\,\text{Log}[x-\#1]\,\#1^4}{b\,\#1^3 + 2\,e^2\,\#1^7}\,\&\right]$$

Problem 6: Result is not expressed in closed-form.

$$\int \frac{d + e\,x^4}{d^2 + f\,x^4 + e^2\,x^8}\,dx$$

Optimal (type 3, 791 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}-\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}+$$

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}-$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}+\frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de-f}}}-$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}+\frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de-f}}}$$

Result (type 7, 67 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[d^2+f\,\#1^4+e^2\,\#1^8\&,\ \frac{d\,\text{Log}[x-\#1]+e\,\text{Log}[x-\#1]\,\#1^4}{f\,\#1^3+2\,e^2\,\#1^7}\&\right]$$

Problem 7: Result is not expressed in closed-form.

$$\int\frac{d+e\,x^4}{d^2-b\,x^4+e^2\,x^8}\,dx$$

Optimal (type 3, 349 leaves, 7 steps):

$$-\frac{\sqrt{e}\,\text{ArcTan}\left[\frac{\sqrt{2}\,\sqrt{e}\,x}{\sqrt{\sqrt{b-2de}-\sqrt{b+2de}}}\right]}{\sqrt{2}\,\sqrt{b-2de}\,\sqrt{\sqrt{b-2de}-\sqrt{b+2de}}}-\frac{\sqrt{e}\,\text{ArcTan}\left[\frac{\sqrt{2}\,\sqrt{e}\,x}{\sqrt{\sqrt{b-2de}+\sqrt{b+2de}}}\right]}{\sqrt{2}\,\sqrt{b-2de}\,\sqrt{\sqrt{b-2de}+\sqrt{b+2de}}}-$$

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

Result (type 7, 69 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[d^2-b\,\#1^4+e^2\,\#1^8\&,\ \frac{d\,\text{Log}[x-\#1]+e\,\text{Log}[x-\#1]\,\#1^4}{-b\,\#1^3+2\,e^2\,\#1^7}\&\right]$$

Problem 8: Result is not expressed in closed-form.

$$\int\frac{d+e\,x^4}{d^2-f\,x^4+e^2\,x^8}\,dx$$

Optimal (type 3, 751 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}-\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}-2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}+$$

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}+2\sqrt{e}\,x}{\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}\right]}{4\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}-$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}+\frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}-\sqrt{2de+f}}}-$$

$$\frac{\text{Log}\left[\sqrt{d}-\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}+\frac{\text{Log}\left[\sqrt{d}+\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}\,x+\sqrt{e}\,x^2\right]}{8\sqrt{d}\sqrt{2\sqrt{d}\sqrt{e}+\sqrt{2de+f}}}$$

Result (type 7, 69 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[d^2-f\,\#1^4+e^2\,\#1^8\&,\ \frac{d\,\text{Log}[x-\#1]+e\,\text{Log}[x-\#1]\,\#1^4}{-f\,\#1^3+2\,e^2\,\#1^7}\&\right]$$

Problem 9: Result is not expressed in closed-form.

$$\int\frac{1+x^4}{1+b\,x^4+x^8}\,dx$$

Optimal (type 3, 411 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{2-b}}-2x}{\sqrt{2+\sqrt{2-b}}}\right]}{4\sqrt{2+\sqrt{2-b}}}-\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{2-b}}-2x}{\sqrt{2-\sqrt{2-b}}}\right]}{4\sqrt{2-\sqrt{2-b}}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{2-b}}+2x}{\sqrt{2+\sqrt{2-b}}}\right]}{4\sqrt{2+\sqrt{2-b}}}+$$

$$\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{2-b}}+2x}{\sqrt{2-\sqrt{2-b}}}\right]}{4\sqrt{2-\sqrt{2-b}}}-\frac{\text{Log}\left[1-\sqrt{2-\sqrt{2-b}}\,x+x^2\right]}{8\sqrt{2-\sqrt{2-b}}}+\frac{\text{Log}\left[1+\sqrt{2-\sqrt{2-b}}\,x+x^2\right]}{8\sqrt{2-\sqrt{2-b}}}-$$

$$\frac{\text{Log}\left[1-\sqrt{2+\sqrt{2-b}}\,x+x^2\right]}{8\sqrt{2+\sqrt{2-b}}}+\frac{\text{Log}\left[1+\sqrt{2+\sqrt{2-b}}\,x+x^2\right]}{8\sqrt{2+\sqrt{2-b}}}$$

Result (type 7, 55 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[1+b\,\#1^4+\#1^8\&,\ \frac{\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{b\,\#1^3+2\,\#1^7}\&\right]$$

Problem 10: Result is not expressed in closed-form.

$$\int\frac{1+x^4}{1+3\,x^4+x^8}\,dx$$

Optimal (type 3, 451 leaves, 19 steps):

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

Result (type 7, 55 leaves):

$$\frac{1}{4}\text{RootSum}\left[1+3\,\text{\#1}^4+\text{\#1}^8\,\&,\ \frac{\text{Log}\left[x-\text{\#1}\right]+\text{Log}\left[x-\text{\#1}\right]\text{\#1}^4}{3\,\text{\#1}^3+2\,\text{\#1}^7}\,\&\right]$$

Problem 12: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1+x^4}{1+x^4+x^8}\,dx$$

Optimal (type 3, 140 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{1-2x}{\sqrt{3}}\right]}{4\sqrt{3}}-\frac{1}{4}\text{ArcTan}\left[\sqrt{3}-2x\right]+\frac{\text{ArcTan}\left[\frac{1+2x}{\sqrt{3}}\right]}{4\sqrt{3}}+\frac{1}{4}\text{ArcTan}\left[\sqrt{3}+2x\right]-$$
$$\frac{1}{8}\text{Log}\left[1-x+x^2\right]+\frac{1}{8}\text{Log}\left[1+x+x^2\right]-\frac{\text{Log}\left[1-\sqrt{3}\,x+x^2\right]}{8\sqrt{3}}+\frac{\text{Log}\left[1+\sqrt{3}\,x+x^2\right]}{8\sqrt{3}}$$

Result (type 3, 135 leaves):

$$\frac{1}{48}\left(4\,i\,\sqrt{-6-6\,i\,\sqrt{3}}\,\text{ArcTan}\left[\frac{1}{2}\left(1-i\,\sqrt{3}\right)x\right]-4\,i\,\sqrt{-6+6\,i\,\sqrt{3}}\,\text{ArcTan}\left[\frac{1}{2}\left(1+i\,\sqrt{3}\right)x\right]+4\,\sqrt{3}\,\text{ArcTan}\left[\frac{-1+2\,x}{\sqrt{3}}\right]+4\,\sqrt{3}\,\text{ArcTan}\left[\frac{1+2\,x}{\sqrt{3}}\right]-6\,\text{Log}\left[1-x+x^2\right]+6\,\text{Log}\left[1+x+x^2\right]\right)$$

Problem 14: Result is not expressed in closed-form.

$$\int\frac{1+x^4}{1-x^4+x^8}\,dx$$

Optimal (type 3, 331 leaves, 19 steps):

$$-\frac{1}{4}\sqrt{2-\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{3}}-2\,x}{\sqrt{2+\sqrt{3}}}\right]-\frac{1}{4}\sqrt{2+\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}-2\,x}{\sqrt{2-\sqrt{3}}}\right]+\frac{1}{4}\sqrt{2-\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{3}}+2\,x}{\sqrt{2+\sqrt{3}}}\right]+\frac{1}{4}\sqrt{2+\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}+2\,x}{\sqrt{2-\sqrt{3}}}\right]-\frac{\text{Log}\left[1-\sqrt{2-\sqrt{3}}\,x+x^2\right]}{8\sqrt{2-\sqrt{3}}}+\frac{\text{Log}\left[1+\sqrt{2-\sqrt{3}}\,x+x^2\right]}{8\sqrt{2-\sqrt{3}}}-\frac{\text{Log}\left[1-\sqrt{2+\sqrt{3}}\,x+x^2\right]}{8\sqrt{2+\sqrt{3}}}+\frac{\text{Log}\left[1+\sqrt{2+\sqrt{3}}\,x+x^2\right]}{8\sqrt{2+\sqrt{3}}}$$

Result (type 7, 55 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[1-\#1^4+\#1^8\,\&,\,\frac{\text{Log}\left[x-\#1\right]+\text{Log}\left[x-\#1\right]\#1^4}{-\#1^3+2\,\#1^7}\,\&\right]$$

Problem 17: Result is not expressed in closed-form.

$$\int\frac{1+x^4}{1-4\,x^4+x^8}\,dx$$

Optimal (type 3, 157 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{2^{1/4}\,x}{\sqrt{-1+\sqrt{3}}}\right]}{2\times2^{1/4}\sqrt{-1+\sqrt{3}}}-\frac{\text{ArcTan}\left[\frac{2^{1/4}\,x}{\sqrt{1+\sqrt{3}}}\right]}{2\times2^{1/4}\sqrt{1+\sqrt{3}}}+\frac{\text{ArcTanh}\left[\frac{2^{1/4}\,x}{\sqrt{-1+\sqrt{3}}}\right]}{2\times2^{1/4}\sqrt{-1+\sqrt{3}}}-\frac{\text{ArcTanh}\left[\frac{2^{1/4}\,x}{\sqrt{1+\sqrt{3}}}\right]}{2\times2^{1/4}\sqrt{1+\sqrt{3}}}$$

Result (type 7, 53 leaves):

$$\frac{1}{8}\,\text{RootSum}\left[1-4\,\#1^4+\#1^8\,\&,\,\frac{\text{Log}\left[x-\#1\right]+\text{Log}\left[x-\#1\right]\#1^4}{-2\,\#1^3+\#1^7}\,\&\right]$$

Problem 18: Result is not expressed in closed-form.

$$\int \frac{1+x^4}{1-5\,x^4+x^8}\,dx$$

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

$$\frac{\text{ArcTan}\left[\sqrt{\frac{2}{-\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{6\left(-\sqrt{3}+\sqrt{7}\right)}}-\frac{\text{ArcTan}\left[\sqrt{\frac{2}{\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{6\left(\sqrt{3}+\sqrt{7}\right)}}+\frac{\text{ArcTanh}\left[\sqrt{\frac{2}{-\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{6\left(-\sqrt{3}+\sqrt{7}\right)}}-\frac{\text{ArcTanh}\left[\sqrt{\frac{2}{\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{6\left(\sqrt{3}+\sqrt{7}\right)}}$$

Result (type 7, 55 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[1-5\,\#1^4+\#1^8\,\&,\ \frac{\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{-5\,\#1^3+2\,\#1^7}\,\&\right]$$

Problem 20: Result is not expressed in closed-form.

$$\int \frac{1-x^4}{1+b\,x^4+x^8}\,dx$$

Optimal (type 3, 511 leaves, 19 steps):

$$-\frac{\sqrt{2+b}\ \text{ArcTan}\left[\frac{\sqrt{2-\sqrt{2-b}}-2\,x}{\sqrt{2+\sqrt{2-b}}}\right]}{4\sqrt{2-\sqrt{2-b}}\ \sqrt{2-b}}+\frac{\sqrt{2+b}\ \text{ArcTan}\left[\frac{\sqrt{2+\sqrt{2-b}}-2\,x}{\sqrt{2-\sqrt{2-b}}}\right]}{4\sqrt{2+\sqrt{2-b}}\ \sqrt{2-b}}+$$

$$\frac{\sqrt{2+b}\ \text{ArcTan}\left[\frac{\sqrt{2-\sqrt{2-b}}+2\,x}{\sqrt{2+\sqrt{2-b}}}\right]}{4\sqrt{2-\sqrt{2-b}}\ \sqrt{2-b}}-\frac{\sqrt{2+b}\ \text{ArcTan}\left[\frac{\sqrt{2+\sqrt{2-b}}+2\,x}{\sqrt{2-\sqrt{2-b}}}\right]}{4\sqrt{2+\sqrt{2-b}}\ \sqrt{2-b}}+$$

$$\frac{\sqrt{2-\sqrt{2-b}}\ \text{Log}\left[1-\sqrt{2-\sqrt{2-b}}\ x+x^2\right]}{8\sqrt{2-b}}-\frac{\sqrt{2-\sqrt{2-b}}\ \text{Log}\left[1+\sqrt{2-\sqrt{2-b}}\ x+x^2\right]}{8\sqrt{2-b}}-$$

$$\frac{\sqrt{2+\sqrt{2-b}}\ \text{Log}\left[1-\sqrt{2+\sqrt{2-b}}\ x+x^2\right]}{8\sqrt{2-b}}+\frac{\sqrt{2+\sqrt{2-b}}\ \text{Log}\left[1+\sqrt{2+\sqrt{2-b}}\ x+x^2\right]}{8\sqrt{2-b}}$$

Result (type 7, 57 leaves):

$$-\frac{1}{4}\,\text{RootSum}\left[1+b\,\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{b\,\#1^3+2\,\#1^7}\,\&\right]$$

Problem 21: Result is not expressed in closed-form.

$$\int \frac{1-x^4}{1+3\,x^4+x^8}\,dx$$

Optimal (type 3, 411 leaves, 19 steps):

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

Result (type 7, 57 leaves):

$$-\frac{1}{4}\text{RootSum}\left[1+3\,\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{3\,\#1^3+2\,\#1^7}\,\&\right]$$

Problem 23: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{1-x^4}{1+x^4+x^8}\,dx$$

Optimal (type 3, 140 leaves, 19 steps):

$$-\frac{1}{4}\sqrt{3}\,\text{ArcTan}\left[\frac{1-2x}{\sqrt{3}}\right]+\frac{1}{4}\text{ArcTan}\left[\sqrt{3}-2x\right]+\frac{1}{4}\sqrt{3}\,\text{ArcTan}\left[\frac{1+2x}{\sqrt{3}}\right]-\frac{1}{4}\text{ArcTan}\left[\sqrt{3}+2x\right]+$$
$$\frac{1}{8}\text{Log}\left[1-x+x^2\right]-\frac{1}{8}\text{Log}\left[1+x+x^2\right]-\frac{1}{8}\sqrt{3}\,\text{Log}\left[1-\sqrt{3}\,x+x^2\right]+\frac{1}{8}\sqrt{3}\,\text{Log}\left[1+\sqrt{3}\,x+x^2\right]$$

Result (type 3, 129 leaves):

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

Problem 25: Result is not expressed in closed-form.

$$\int \frac{1-x^4}{1-x^4+x^8}\,dx$$

Optimal (type 3, 355 leaves, 19 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{3}}-2x}{\sqrt{2+\sqrt{3}}}\right]}{4\sqrt{3\left(2-\sqrt{3}\right)}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}-2x}{\sqrt{2-\sqrt{3}}}\right]}{4\sqrt{3\left(2+\sqrt{3}\right)}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2-\sqrt{3}}+2x}{\sqrt{2+\sqrt{3}}}\right]}{4\sqrt{3\left(2-\sqrt{3}\right)}}-\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}+2x}{\sqrt{2-\sqrt{3}}}\right]}{4\sqrt{3\left(2+\sqrt{3}\right)}}+$$

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

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

Result (type 7, 57 leaves):

$$-\frac{1}{4}\,\text{RootSum}\left[1-\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{-\#1^3+2\,\#1^7}\,\&\right]$$

Problem 28: Result is not expressed in closed-form.

$$\int \frac{1-x^4}{1-4\,x^4+x^8}\,dx$$

Optimal (type 3, 165 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\frac{2^{1/4}x}{\sqrt{-1+\sqrt{3}}}\right]}{2\times 2^{1/4}\sqrt{3\left(-1+\sqrt{3}\right)}}+\frac{\text{ArcTan}\left[\frac{2^{1/4}x}{\sqrt{1+\sqrt{3}}}\right]}{2\times 2^{1/4}\sqrt{3\left(1+\sqrt{3}\right)}}+\frac{\text{ArcTanh}\left[\frac{2^{1/4}x}{\sqrt{-1+\sqrt{3}}}\right]}{2\times 2^{1/4}\sqrt{3\left(-1+\sqrt{3}\right)}}+\frac{\text{ArcTanh}\left[\frac{2^{1/4}x}{\sqrt{1+\sqrt{3}}}\right]}{2\times 2^{1/4}\sqrt{3\left(1+\sqrt{3}\right)}}$$

Result (type 7, 55 leaves):

$$-\frac{1}{8}\,\text{RootSum}\left[1-4\,\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{-2\,\#1^3+\#1^7}\,\&\right]$$

Problem 29: Result is not expressed in closed-form.

$$\int \frac{1-x^4}{1-5\,x^4+x^8}\,dx$$

Optimal (type 3, 169 leaves, 7 steps):

$$\frac{\text{ArcTan}\left[\sqrt{\frac{2}{-\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{14\left(-\sqrt{3}+\sqrt{7}\right)}}+\frac{\text{ArcTan}\left[\sqrt{\frac{2}{\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{14\left(\sqrt{3}+\sqrt{7}\right)}}+\frac{\text{ArcTanh}\left[\sqrt{\frac{2}{-\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{14\left(-\sqrt{3}+\sqrt{7}\right)}}+\frac{\text{ArcTanh}\left[\sqrt{\frac{2}{\sqrt{3}+\sqrt{7}}}\,x\right]}{\sqrt{14\left(\sqrt{3}+\sqrt{7}\right)}}$$

Result (type 7, 57 leaves):

$$-\frac{1}{4}\,\text{RootSum}\left[1-5\,\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4}{-5\,\#1^3+2\,\#1^7}\,\&\right]$$

Problem 31: Result is not expressed in closed-form.

$$\int\frac{-1+\sqrt{3}+2\,x^4}{1-x^4+x^8}\,dx$$

Optimal (type 3, 135 leaves, 9 steps):

$$-\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}-2\,x}{\sqrt{2-\sqrt{3}}}\right]}{\sqrt{2}}+\frac{\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}+2\,x}{\sqrt{2-\sqrt{3}}}\right]}{\sqrt{2}}-\frac{\text{Log}\left[1-\sqrt{2-\sqrt{3}}\,x+x^2\right]}{2\sqrt{2}}+\frac{\text{Log}\left[1+\sqrt{2-\sqrt{3}}\,x+x^2\right]}{2\sqrt{2}}$$

Result (type 7, 71 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[1-\#1^4+\#1^8\,\&,\ \frac{-\text{Log}[x-\#1]+\sqrt{3}\,\text{Log}[x-\#1]+2\,\text{Log}[x-\#1]\,\#1^4}{-\#1^3+2\,\#1^7}\,\&\right]$$

Problem 32: Result is not expressed in closed-form.

$$\int\frac{1+\left(1+\sqrt{3}\right)x^4}{1-x^4+x^8}\,dx$$

Optimal (type 3, 164 leaves, 9 steps):

$$-\frac{1}{2}\sqrt{2+\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}-2\,x}{\sqrt{2-\sqrt{3}}}\right]+\frac{1}{2}\sqrt{2+\sqrt{3}}\,\text{ArcTan}\left[\frac{\sqrt{2+\sqrt{3}}+2\,x}{\sqrt{2-\sqrt{3}}}\right]-$$
$$\frac{1}{4}\sqrt{2+\sqrt{3}}\,\text{Log}\left[1-\sqrt{2-\sqrt{3}}\,x+x^2\right]+\frac{1}{4}\sqrt{2+\sqrt{3}}\,\text{Log}\left[1+\sqrt{2-\sqrt{3}}\,x+x^2\right]$$

Result (type 7, 72 leaves):

$$\frac{1}{4}\,\text{RootSum}\left[1-\#1^4+\#1^8\,\&,\ \frac{\text{Log}[x-\#1]+\text{Log}[x-\#1]\,\#1^4+\sqrt{3}\,\text{Log}[x-\#1]\,\#1^4}{-\#1^3+2\,\#1^7}\,\&\right]$$

Problem 33: Result is not expressed in closed-form.

$$\int\frac{3-2\sqrt{3}+\left(-3+\sqrt{3}\right)x^4}{1-x^4+x^8}\,dx$$

Optimal (type 3, 180 leaves, 9 steps):

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

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

Result (type 7, 89 leaves):

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

Problem 39: Result is not expressed in closed-form.

$$\int\frac{d+\frac{e}{x^3}}{c+\frac{a}{x^6}+\frac{b}{x^3}}\,dx$$

Optimal (type 3, 716 leaves, 15 steps):

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

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

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

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

$$\left.\text{Log}\left[\left(b-\sqrt{b^2-4\,a\,c}\right)^{2/3}-2^{1/3}\,c^{1/3}\left(b-\sqrt{b^2-4\,a\,c}\right)^{1/3}x+2^{2/3}\,c^{2/3}\,x^2\right]\right)\Big/$$

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

$$\left.\text{Log}\left[\left(b+\sqrt{b^2-4\,a\,c}\right)^{2/3}-2^{1/3}\,c^{1/3}\left(b+\sqrt{b^2-4\,a\,c}\right)^{1/3}x+2^{2/3}\,c^{2/3}\,x^2\right]\right)\Big/$$

$$\left(6\times 2^{1/3}\,c^{4/3}\left(b+\sqrt{b^2-4\,a\,c}\right)^{2/3}\right)$$

Result (type 7, 88 leaves):

$$\frac{d\,x}{c}-\frac{\text{RootSum}\left[a+b\,\#1^3+c\,\#1^6\&,\;\frac{a\,d\,\text{Log}[x-\#1]+b\,d\,\text{Log}[x-\#1]\,\#1^3-c\,e\,\text{Log}[x-\#1]\,\#1^3}{b\,\#1^2+2\,c\,\#1^5}\&\right]}{3\,c}$$

Problem 41: Result is not expressed in closed-form.

$$\int\frac{d+\frac{e}{x^4}}{c+\frac{a}{x^8}+\frac{b}{x^4}}\,dx$$

Optimal (type 3, 433 leaves, 9 steps):

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

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

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

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

Result (type 7, 88 leaves):

$$\frac{d\,x}{c}-\frac{\text{RootSum}\left[a+b\,\#1^4+c\,\#1^8\&,\ \frac{a\,d\,\text{Log}[x-\#1]+b\,d\,\text{Log}[x-\#1]\,\#1^4-c\,e\,\text{Log}[x-\#1]\,\#1^4}{b\,\#1^3+2\,c\,\#1^7}\&\right]}{4\,c}$$

Problem 58: Unable to integrate problem.

$$\int\frac{1}{\left(d+e\,x^n\right)\sqrt{a+c\,x^{2\,n}}}\,\text{d}x$$

Optimal (type 6, 171 leaves, 6 steps):

$$\frac{x\sqrt{1+\frac{c\,x^{2\,n}}{a}}\ \text{AppellF1}\left[\frac{1}{2\,n},\frac{1}{2},1,\frac{1}{2}\left(2+\frac{1}{n}\right),-\frac{c\,x^{2\,n}}{a},\frac{e^2\,x^{2\,n}}{d^2}\right]}{d\sqrt{a+c\,x^{2\,n}}}-$$

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

Result (type 8, 25 leaves):

$$\int\frac{1}{\left(d+e\,x^n\right)\sqrt{a+c\,x^{2\,n}}}\,\text{d}x$$

Problem 63: Unable to integrate problem.

$$\int \frac{\left(a + c\,x^{2n}\right)^p}{d + e\,x^n}\,dx$$

Optimal (type 6, 167 leaves, 6 steps):

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

Result (type 8, 23 leaves):

$$\int \frac{\left(a + c\,x^{2n}\right)^p}{d + e\,x^n}\,dx$$

Problem 64: Unable to integrate problem.

$$\int \frac{\left(a + c\,x^{2n}\right)^p}{\left(d + e\,x^n\right)^2}\,dx$$

Optimal (type 6, 261 leaves, 8 steps):

$$\frac{1}{d^4\left(1+2n\right)}$$
$$e^2\,x^{1+2n}\left(a + c\,x^{2n}\right)^p\left(1 + \frac{c\,x^{2n}}{a}\right)^{-p}\text{AppellF1}\left[\frac{1}{2}\left(2 + \frac{1}{n}\right), -p, 2, \frac{1}{2}\left(4 + \frac{1}{n}\right), -\frac{c\,x^{2n}}{a}, \frac{e^2\,x^{2n}}{d^2}\right] +$$
$$\frac{1}{d^2}x\left(a + c\,x^{2n}\right)^p\left(1 + \frac{c\,x^{2n}}{a}\right)^{-p}\text{AppellF1}\left[\frac{1}{2n}, -p, 2, \frac{1}{2}\left(2 + \frac{1}{n}\right), -\frac{c\,x^{2n}}{a}, \frac{e^2\,x^{2n}}{d^2}\right] - \frac{1}{d^3\left(1+n\right)}$$
$$2\,e\,x^{1+n}\left(a + c\,x^{2n}\right)^p\left(1 + \frac{c\,x^{2n}}{a}\right)^{-p}\text{AppellF1}\left[\frac{1+n}{2n}, -p, 2, \frac{1}{2}\left(3 + \frac{1}{n}\right), -\frac{c\,x^{2n}}{a}, \frac{e^2\,x^{2n}}{d^2}\right]$$

Result (type 8, 23 leaves):

$$\int \frac{\left(a + c\,x^{2n}\right)^p}{\left(d + e\,x^n\right)^2}\,dx$$

Problem 65: Unable to integrate problem.

$$\int \frac{\left(a + c\,x^{2n}\right)^p}{\left(d + e\,x^n\right)^3}\,dx$$

Optimal (type 6, 357 leaves, 10 steps):

$$\frac{1}{d^5 (1+2n)} 3 e^2 x^{1+2n} (a+c x^{2n})^p \left(1+\frac{c x^{2n}}{a}\right)^{-p} \text{AppellF1}\left[\frac{1}{2}\left(2+\frac{1}{n}\right), -p, 3, \frac{1}{2}\left(4+\frac{1}{n}\right), -\frac{c x^{2n}}{a}, \frac{e^2 x^{2n}}{d^2}\right] - \frac{1}{d^6 (1+3n)}$$
$$e^3 x^{1+3n} (a+c x^{2n})^p \left(1+\frac{c x^{2n}}{a}\right)^{-p} \text{AppellF1}\left[\frac{1}{2}\left(3+\frac{1}{n}\right), -p, 3, \frac{1}{2}\left(5+\frac{1}{n}\right), -\frac{c x^{2n}}{a}, \frac{e^2 x^{2n}}{d^2}\right] +$$
$$\frac{1}{d^3} x (a+c x^{2n})^p \left(1+\frac{c x^{2n}}{a}\right)^{-p} \text{AppellF1}\left[\frac{1}{2n}, -p, 3, \frac{1}{2}\left(2+\frac{1}{n}\right), -\frac{c x^{2n}}{a}, \frac{e^2 x^{2n}}{d^2}\right] - \frac{1}{d^4 (1+n)}$$
$$3 e x^{1+n} (a+c x^{2n})^p \left(1+\frac{c x^{2n}}{a}\right)^{-p} \text{AppellF1}\left[\frac{1+n}{2n}, -p, 3, \frac{1}{2}\left(3+\frac{1}{n}\right), -\frac{c x^{2n}}{a}, \frac{e^2 x^{2n}}{d^2}\right]$$

Result (type 8, 23 leaves):

$$\int \frac{(a+c x^{2n})^p}{(d+e x^n)^3} \, dx$$

Problem 73: Result more than twice size of optimal antiderivative.

$$\int \frac{1}{(d+e x^n)^2 (a+b x^n+c x^{2n})} \, dx$$

Optimal (type 5, 368 leaves, 7 steps):

$$-\left(\left(c\left(2c^2d^2+b\left(b+\sqrt{b^2-4ac}\right)e^2-2ce\left(bd+\sqrt{b^2-4ac}\,d+ae\right)\right) x \,\text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{2cx^n}{b-\sqrt{b^2-4ac}}\right]\right) \Big/ \left(\left(b^2-4ac-b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^2\right)\right) -$$
$$\left(c\left(2c^2d^2+b\left(b-\sqrt{b^2-4ac}\right)e^2-2ce\left(bd-\sqrt{b^2-4ac}\,d+ae\right)\right) x \,\text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{2cx^n}{b+\sqrt{b^2-4ac}}\right]\right) \Big/$$
$$\left(\left(b^2-4ac+b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^2\right) +$$
$$\frac{e^2(2cd-be) x \,\text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{ex^n}{d}\right]}{d\left(cd^2-bde+ae^2\right)^2} +$$
$$\frac{e^2 x \,\text{Hypergeometric2F1}\left[2, \frac{1}{n}, 1+\frac{1}{n}, -\frac{ex^n}{d}\right]}{d^2\left(cd^2-bde+ae^2\right)}$$

Result (type 5, 2302 leaves):

$$\frac{\left(ae^2-cd^2n+bden-ae^2n\right) x}{ad^2\left(cd^2-bde+ae^2\right)n} +$$
$$\frac{\left(-ae^2+cd^2n-bden+ae^2n\right) x}{ad^2\left(cd^2-bde+ae^2\right)n} + \frac{e^2 x}{d\left(cd^2-bde+ae^2\right)n\left(d+ex^n\right)} +$$

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

$$\left.\left.\left.\frac{-1+n}{n}, -\frac{-b-\sqrt{b^2-4 a c}}{2 c \left(-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]\right) \Big/ \left(\frac{b \left(-b-\sqrt{b^2-4 a c}\right)}{2 c}+\frac{\left(-b-\sqrt{b^2-4 a c}\right)^2}{2 c}\right) + \left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n} \text{Hypergeometric2F1}\left[-\frac{1}{n}, -\frac{1}{n}, \frac{-1+n}{n},\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(cd^2-bde+ae^2\right)^2+\Bigg(2bcdex\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.$$

$$\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.$$

$$\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(cd^2-bde+ae^2\right)^2-\Bigg(b^2e^2x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.$$

$$\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.$$

$$\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

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

Problem 74: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(d+e\,x^n\right)^3\left(a+b\,x^n+c\,x^{2\,n}\right)}\,\mathbb{d}x$$

Optimal (type 5, 552 leaves, 8 steps):

$$-\left(\left(c\left(2c^3d^3-b^2\left(b+\sqrt{b^2-4ac}\right)e^3-3c^2de\left(bd+\sqrt{b^2-4ac}\,d+2ae\right)+ce^2\left(3b^2d+a\sqrt{b^2-4ac}\,e+3b\left(\sqrt{b^2-4ac}\,d+ae\right)\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b-\sqrt{b^2-4ac}}\right]\right)\Big/\left(\left(b^2-4ac-b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^3\right)\right)-\left(c\left(2c^3d^3-b^2\left(b-\sqrt{b^2-4ac}\right)e^3-3c^2de\left(bd-\sqrt{b^2-4ac}\,d+2ae\right)+ce^2\left(3b^2d-3b\sqrt{b^2-4ac}\,d+3abe-a\sqrt{b^2-4ac}\,e\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}}\right]\right)\Big/\left(\left(b^2-4ac+b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^3\right)+\left(e^2\left(3c^2d^2+b^2e^2-ce\left(3bd+ae\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]\right)\Big/\left(d\left(cd^2-bde+ae^2\right)^3\right)+\frac{e^2\left(2cd-be\right)x\,\text{Hypergeometric2F1}\left[2,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]}{d^2\left(cd^2-bde+ae^2\right)^2}+\frac{e^2x\,\text{Hypergeometric2F1}\left[3,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]}{d^3\left(cd^2-bde+ae^2\right)}$$

Result (type 5, 4111 leaves):

$$\left(\left(-acd^2e^2+abde^3-a^2e^4+7acd^2e^2n-5abde^3n+3a^2e^4n-2c^2d^4n^2+4bcd^3en^2-2b^2d^2e^2n^2-4acd^2e^2n^2+4abde^3n^2-2a^2e^4n^2\right)x\right)\Big/\left(2ad^3\left(cd^2-bde+ae^2\right)^2n^2\right)+\left(\left(acd^2e^2-abde^3+a^2e^4-7acd^2e^2n+5abde^3n-3a^2e^4n+2c^2d^4n^2-4bcd^3en^2+2b^2d^2e^2n^2+4acd^2e^2n^2-4abde^3n^2+2a^2e^4n^2\right)x\right)\Big/\left(2ad^3\left(cd^2-bde+ae^2\right)^2n^2\right)+\frac{e^2x}{2d\left(cd^2-bde+ae^2\right)n\left(d+ex^n\right)^2}+\frac{\left(-cd^2e^2+bde^3-ae^4+6cd^2e^2n-4bde^3n+2ae^4n\right)x}{2d^2\left(cd^2-bde+ae^2\right)^2n^2\left(d+ex^n\right)}+\left(\left(c^2d^4e^2-2bcd^3e^3+b^2d^2e^4+2acd^2e^4-2abde^5+a^2e^6-7c^2d^4e^2n+12bcd^3e^3n-5b^2d^2e^4n-10acd^2e^4n+8abde^5n-3a^2e^6n+12c^2d^4e^2n^2-16bcd^3e^3n^2+6b^2d^2e^4n^2+6acd^2e^4n^2-6abde^5n^2+2a^2e^6n^2\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]\right)\Big/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(c\,d^2-b\,d\,e+a\,e^2\right)^3-\Bigg(c^3\,d^3\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg/$$

$$\left(c\,d^2-b\,d\,e+a\,e^2\right)^3+\Bigg(3\,b\,c^2\,d^2\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(cd^2-bde+ae^2\right)^3-\Bigg(3b^2cde^2x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(cd^2-bde+ae^2\right)^3+\Bigg(3ac^2de^2x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg)\Bigg/$$

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

Problem 75: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(d+e\,x^n\right)^3}{\left(a+b\,x^n+c\,x^{2n}\right)^2}\,dx$$

Optimal (type 5, 750 leaves, 9 steps):

$$\frac{\left(x\left(b^2 c d^3-2 a c d\left(c d^2-3 a e^2\right)-a b e\left(3 c d^2+a e^2\right)-\left(a b^2 e^3+2 a c e\left(3 c d^2-a e^2\right)-b c d\left(c d^2+3 a e^2\right)\right)x^n\right)\right)/\left(a c\left(b^2-4 a c\right) n\left(a+b\,x^n+c\,x^{2n}\right)\right)+\frac{e^2\left(e+\frac{6 c d-3 b e}{\sqrt{b^2-4 a c}}\right) x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]}{c\left(b-\sqrt{b^2-4 a c}\right)}+\left(\left(\left(a b^2 e^3+2 a c e\left(3 c d^2-a e^2\right)-b c d\left(c d^2+3 a e^2\right)\right)(1-n)+\frac{1}{\sqrt{b^2-4 a c}}\left(b^2 c d\left(3 a e^2(1-3 n)-c d^2(1-n)\right)-a b^3 e^3(1-3 n)+4 a c^2 d\left(c d^2-3 a e^2\right)(1-2 n)+2 a b c e\left(a e^2(2-5 n)+3 c d^2 n\right)\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/\left(a c\left(b^2-4 a c\right)\left(b-\sqrt{b^2-4 a c}\right) n\right)+\frac{e^2\left(e-\frac{3(2 c d-b e)}{\sqrt{b^2-4 a c}}\right) x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]}{c\left(b+\sqrt{b^2-4 a c}\right)}+\left(\left(\left(a b^2 e^3+2 a c e\left(3 c d^2-a e^2\right)-b c d\left(c d^2+3 a e^2\right)\right)(1-n)-\frac{1}{\sqrt{b^2-4 a c}}\left(b^2 c d\left(3 a e^2(1-3 n)-c d^2(1-n)\right)-a b^3 e^3(1-3 n)+4 a c^2 d\left(c d^2-3 a e^2\right)(1-2 n)+2 a b c e\left(a e^2(2-5 n)+3 c d^2 n\right)\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/\left(a c\left(b^2-4 a c\right)\left(b+\sqrt{b^2-4 a c}\right) n\right)$$

Result (type 5, 5537 leaves):

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\frac{1}{-b^2+4\,a\,c}2\,a\,e^3\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\frac{1}{a\left(-b^2+4ac\right)n}bcd^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]-$$

$$\frac{1}{\left(-b^2+4ac\right)n}6cd^2ex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4ac\right)n}3bde^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)\,n}2\,a\,e^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]-$$

$$\frac{1}{c\,\left(-b^2+4\,a\,c\right)\,n}b^2\,e^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[\right.$$

$$-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big]+\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+\frac{1}{a\,\left(-b^2+4\,a\,c\right)}b^2\,d^3\,x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

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

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\frac{1}{\left(-b^2+4ac\right)n}3bd^2ex$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)-\frac{1}{\left(-b^2+4ac\right)n}6adе^2x$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)$$

Problem 76: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(d+e\,x^n\right)^2}{\left(a+b\,x^n+c\,x^{2n}\right)^2}\,dx$$

Optimal (type 5, 543 leaves, 9 steps):

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

$$\frac{2 e^2 x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]}{b^2-4 a c-b\sqrt{b^2-4 a c}}-$$

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

$$\left.\left.\left(b^2\left(a e^2(1-3 n)-c d^2(1-n)\right)+4 a c\left(c d^2-a e^2\right)(1-2 n)+4 a b c d e n\right)\right) x$$

$$\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\Bigg)\Big/\left(a\left(b^2-4 a c\right)\left(b-\sqrt{b^2-4 a c}\right) n\right)-$$

$$\frac{2 e^2 x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]}{b^2-4 a c+b\sqrt{b^2-4 a c}}-$$

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

$$\left.\left.\left(b^2\left(a e^2(1-3 n)-c d^2(1-n)\right)+4 a c\left(c d^2-a e^2\right)(1-2 n)+4 a b c d e n\right)\right) x$$

$$\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\Bigg)\Big/\left(a\left(b^2-4 a c\right)\left(b+\sqrt{b^2-4 a c}\right) n\right)$$

Result (type 5, 4177 leaves):

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

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

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

$$\frac{1}{a\left(-b^2+4 a c\right)} b c d^2 x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4 a c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4 a c}}{2 c\left(-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4 a c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4 a c}}{2 c\left(-\frac{-b+\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)n}b\,e^2\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+\frac{1}{a\left(-b^2+4\,a\,c\right)}b^2\,d^2\,x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)$$

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

$$\int\frac{d+e\,x^n}{\left(a+b\,x^n+c\,x^{2\,n}\right)^2}\,dx$$

Optimal (type 5, 362 leaves, 4 steps):

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

$$\left(c\left(2 a\left(2 c d\left(1-2 n\right)+\sqrt{b^2-4 a c}\ e\left(1-n\right)\right)-b^2\left(d-d n\right)-b\left(\sqrt{b^2-4 a c}\ d\left(1-n\right)-2 a e n\right)\right)\right.$$

$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/$$

$$\left(a\left(b^2-4 a c\right)\left(b^2-4 a c-b\sqrt{b^2-4 a c}\right) n\right)-$$

$$\left(c\left(2 a\left(c d\left(2-4 n\right)-\sqrt{b^2-4 a c}\ e\left(1-n\right)\right)-b^2 d\left(1-n\right)+b\left(\sqrt{b^2-4 a c}\ d\left(1-n\right)+2 a e n\right)\right)\right.$$

$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/$$

$$\left(a\left(b^2-4 a c\right)\left(b^2-4 a c+b\sqrt{b^2-4 a c}\right) n\right)$$

Result (type 5, 3152 leaves):

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

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

$$\frac{1}{a\left(-b^2+4 a c\right)} b c d x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4 a c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4 a c}}{2 c\left(-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4 a c}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4 a c}}{2 c\left(-\frac{-b+\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]\right)+$$

$$\frac{1}{-b^2+4 a c} 2 c e x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4 a c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4 a c}}{2 c\left(-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4 a c}}\right.$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

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

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)-$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)n}2\,c\,e\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\right.\left[\right.$$

$$\left.-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+\frac{1}{a\left(-b^2+4\,a\,c\right)}b^2\,d\,x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)$$

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

$$\int\frac{1}{\left(d+e\,x^n\right)\,\left(a+b\,x^n+c\,x^{2\,n}\right)^2}\,\mathbb{d}x$$

Optimal (type 5, 726 leaves, 10 steps):

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

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

$$\left(\left(b^2-4 a c-b \sqrt{b^2-4 a c}\right)\left(c d^2-b d e+a e^2\right)^2\right)-$$

$$\left(c\left(\frac{2 a b c e(2-3 n)-4 a c^2 d(1-2 n)+b^2 c d(1-n)-b^3 e(1-n)}{\sqrt{b^2-4 a c}}+\left(b c d-b^2 e+2 a c e\right)(1-n)\right)\right.$$

$$\left.x \text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/$$

$$\left(a\left(b^2-4 a c\right)\left(b-\sqrt{b^2-4 a c}\right)\left(c d^2-b d e+a e^2\right) n\right)-$$

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

$$\left(\left(b^2-4 a c+b \sqrt{b^2-4 a c}\right)\left(c d^2-b d e+a e^2\right)^2\right)+$$

$$\left(c\left(b c\left(2 a e(2-3 n)-\sqrt{b^2-4 a c}\, d(1-n)\right)-2 a c\left(2 c d(1-2 n)+\sqrt{b^2-4 a c}\, e(1-n)\right)-\right.\right.$$

$$\left.\left.b^3 e(1-n)+b^2\left(c d+\sqrt{b^2-4 a c}\, e\right)(1-n)\right)\right.$$

$$\left.x \text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/$$

$$\left(a\left(b^2-4 a c\right)\left(b^2-4 a c+b \sqrt{b^2-4 a c}\right)\left(c d^2-b d e+a e^2\right) n\right)+$$

$$\frac{e^4 x \text{Hypergeometric2F1}\left[1, \frac{1}{n}, 1+\frac{1}{n}, -\frac{e x^n}{d}\right]}{d\left(c d^2-b d e+a e^2\right)^2}$$

Result (type 5, 11 767 leaves) :

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2\right)+$$

$$\Bigg(bc^2de^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2\right)+\Bigg(2b^2ce^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2\right)-\Bigg(6ac^2e^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2\Bigg)+\Bigg(bc^3d^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)-$$

$$\Bigg(2b^2c^2d^2ex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)+$$

$$\Bigg(2c^3d^2ex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)+$$

$$\left(b^3cde^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)-$$

$$\left(bc^2de^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)-\left(b^2ce^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)+$$

$$\left(2ac^2e^3x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg)\Bigg/$$

$$\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2n\right)+$$

$$\left(b^2c^2d^3x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$\left.\left.\left.\left.-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2\right)-\left(4c^3d^3x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)-$$

$$\left(2\,b^3\,c\,d^2\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)+\left(8\,b\,c^2\,d^2\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)+$$

$$\left(b^4\,d\,e^2\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.\right.\right.$$

$$\left.\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right)\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)-$$

$$\left(8\,a\,c^2\,d\,e^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\right)+$$

$$\left(8\,a\,b\,c\,e^3\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2 n\right)+$$

$$\left(2\,c^3\,d^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2 n\right)-$$

$$\left(5\,b\,c^2\,d^2\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2 n\right)+$$

$$\left(2\,b^2\,c\,d\,e^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2 n\right)+$$

$$\left(b^3\,e^3\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)\Bigg/\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^2 n\right)$$

Problem 79: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(d+ex^n\right)^2\left(a+bx^n+cx^{2n}\right)^2}\,dx$$

Optimal (type 5, 1129 leaves, 11 steps):

$$-\left(\left(x\left(2b^3cde-6abc^2de-b^4e^2-b^2c\left(cd^2-4ae^2\right)+2ac^2\left(cd^2-ae^2\right)+c\left(2b^2cde-4ac^2de-b^3e^2-bc\left(cd^2-3ae^2\right)\right)x^n\right)\right)\Big/\left(a\left(b^2-4ac\right)\left(cd^2-bde+ae^2\right)^2n\left(a+bx^n+cx^{2n}\right)\right)\right)-\left(\left(2ce^2\left(3c^2d^2+b\left(b+\sqrt{b^2-4ac}\right)e^2-ce\left(3bd+2\sqrt{b^2-4ac}\,d+ae\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b-\sqrt{b^2-4ac}}\right]\right)\Big/\left(\left(b^2-4ac-b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^3\right)+\frac{1}{a\left(b^2-4ac\right)\left(b^2-4ac-b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^2n}c\left(4ac^2\left(e\left(ae\left(1-2n\right)+\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-cd^2\left(1-2n\right)\right)-b^2c\left(e\left(ae\left(5-7n\right)+2\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-cd^2\left(1-n\right)\right)+bc\left(cd\left(4ae\left(2-3n\right)+\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-3a\sqrt{b^2-4ac}\,e^2\left(1-n\right)\right)+b^4e^2\left(1-n\right)-b^3e\left(2cd-\sqrt{b^2-4ac}\,e\right)\left(1-n\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b-\sqrt{b^2-4ac}}\right]-\left(\left(2ce^2\left(3c^2d^2+b\left(b-\sqrt{b^2-4ac}\right)e^2-ce\left(3bd-2\sqrt{b^2-4ac}\,d+ae\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}}\right]\right)\Big/\left(\left(b^2-4ac+b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^3\right)+\frac{1}{a\left(b^2-4ac\right)\left(b^2-4ac+b\sqrt{b^2-4ac}\right)\left(cd^2-bde+ae^2\right)^2n}c\left(4ac^2\left(e\left(ae\left(1-2n\right)-\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-cd^2\left(1-2n\right)\right)-b^2c\left(e\left(ae\left(5-7n\right)-2\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-cd^2\left(1-n\right)\right)+bc\left(cd\left(4ae\left(2-3n\right)-\sqrt{b^2-4ac}\,d\left(1-n\right)\right)+3a\sqrt{b^2-4ac}\,e^2\left(1-n\right)\right)+b^4e^2\left(1-n\right)-b^3e\left(2cd+\sqrt{b^2-4ac}\,e\right)\left(1-n\right)\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}}\right]+\frac{2e^4\left(2cd-be\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]}{d\left(cd^2-bde+ae^2\right)^3}+\frac{e^4x\,\text{Hypergeometric2F1}\left[2,\frac{1}{n},1+\frac{1}{n},-\frac{ex^n}{d}\right]}{d^2\left(cd^2-bde+ae^2\right)^2}$$

Result (type 5, 16 855 leaves) :

$$\left(\left(-b^2c^2d^4+2ac^3d^4+2b^3cd^3e-6abc^2d^3e-b^4d^2e^2+4ab^2cd^2e^2-2a^2c^2d^2e^2-a^2b^2e^4+4a^3ce^4+b^2c^2d^4n-4ac^3d^4n-2b^3cd^3en+8abc^2d^3en+b^4d^2e^2n-\right.\right.$$

$$2\,a\,b^2\,c\,d^2\,e^2\,n - 8\,a^2\,c^2\,d^2\,e^2\,n - 2\,a\,b^3\,d\,e^3\,n + 8\,a^2\,b\,c\,d\,e^3\,n + a^2\,b^2\,e^4\,n - 4\,a^3\,c\,e^4\,n\Big)\,x\Big) \Big/ \Big(a^2\,\left(-b^2+4\,a\,c\right)\,d^2\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\,n\Big) +$$

$$\Big(\left(b^2\,c^2\,d^4 - 2\,a\,c^3\,d^4 - 2\,b^3\,c\,d^3\,e + 6\,a\,b\,c^2\,d^3\,e + b^4\,d^2\,e^2 - 4\,a\,b^2\,c\,d^2\,e^2 + 2\,a^2\,c^2\,d^2\,e^2 + a^2\,b^2\,e^4 - 4\,a^3\,c\,e^4 - b^2\,c^2\,d^4\,n + 4\,a\,c^3\,d^4\,n + 2\,b^3\,c\,d^3\,e\,n - 8\,a\,b\,c^2\,d^3\,e\,n - b^4\,d^2\,e^2\,n + 2\,a\,b^2\,c\,d^2\,e^2\,n + 8\,a^2\,c^2\,d^2\,e^2\,n + 2\,a\,b^3\,d\,e^3\,n - 8\,a^2\,b\,c\,d\,e^3\,n - a^2\,b^2\,e^4\,n + 4\,a^3\,c\,e^4\,n\right)\,x\Big) \Big/ \Big(a^2\,\left(-b^2+4\,a\,c\right)\,d^2\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\,n\Big) + \frac{e^4\,x}{d\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\,n\,\left(d+e\,x^n\right)} +$$

$$\Big(-b^2\,c^2\,d^2\,x + 2\,a\,c^3\,d^2\,x + 2\,b^3\,c\,d\,e\,x - 6\,a\,b\,c^2\,d\,e\,x - b^4\,e^2\,x + 4\,a\,b^2\,c\,e^2\,x - 2\,a^2\,c^2\,e^2\,x - b\,c^3\,d^2\,x^{1+n} + 2\,b^2\,c^2\,d\,e\,x^{1+n} - 4\,a\,c^3\,d\,e\,x^{1+n} - b^3\,c\,e^2\,x^{1+n} + 3\,a\,b\,c^2\,e^2\,x^{1+n}\Big) \Big/ \Big(a\,\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\,n\,\left(a+b\,x^n+c\,x^{2\,n}\right)\Big) +$$

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

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

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

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(a\,\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right)\Big/$$

$$\left(a\,\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right)\Big/$$

$$\left(\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-\left(20\,a\,c^3\,d\,e^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\right.$$

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right)\Big/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+\left(11\,a\,b\,c^2\,e^4\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\right.$$

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(a\,\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)\,-$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(a\,\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)\,+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)\,+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\left(-b^2+4\,a\,c\right)\,\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-$$

$$\left(3\,a\,b\,c^2\,e^4\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-$$

$$\left(4\,c^4\,d^4\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$

$$\left(12\,b\,c^3\,d^3\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-$$

$$\left(9\,b^2\,c^2\,d^2\,e^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-$$

$$\left(b^5\,d\,e^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$

$$\left(24\,a\,b\,c^2\,d\,e^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-$$

$$\left(14\,a\,b^2\,c\,e^4\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

$$\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+\left(8\,a^2\,c^2\,e^4\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)-$$

$$\left(b^2\,c^3\,d^4\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+$$

$$\left(3\,b^3\,c^2\,d^3\,e\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-\left(8\,b\,c^3\,d^3\,e\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-$$

$$\left(3\,b^4\,c\,d^2\,e^2\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

$$\left(a\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+\left(9\,b^2\,c^2\,d^2\,e^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+$$

$$\left(b^5\,d\,e^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right)\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)-$$

$$\left(4\,a\,b\,c^2\,d\,e^3\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg)\Bigg/\left(\left(-b^2+4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\,n\right)+$$

$$\left(4\,a\,b^2\,c\,e^4\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg)\Bigg/$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)\Bigg/\left(\left(-b^2+4ac\right)\left(cd^2-bde+ae^2\right)^3 n\right)$$

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

$$\int\frac{\left(d+ex^n\right)^3}{\left(a+bx^n+cx^{2n}\right)^3}\,dx$$

Optimal (type 5, 1707 leaves, 11 steps):

$$\left(x\left(b^2cd^3-2acd\left(cd^2-3ae^2\right)-abe\left(3cd^2+ae^2\right)-\left(ab^2e^3+2ace\left(3cd^2-ae^2\right)-bcd\left(cd^2+3ae^2\right)\right)x^n\right)\right)\Big/$$
$$\left(2ac\left(b^2-4ac\right)n\left(a+bx^n+cx^{2n}\right)^2\right)+$$
$$\frac{e^2x\left(3b^2cd-6ac^2d-b^3e+abce+c\left(3bcd-b^2e-2ace\right)x^n\right)}{ac^2\left(b^2-4ac\right)n\left(a+bx^n+cx^{2n}\right)}-$$
$$\frac{1}{2a^2c^2\left(b^2-4ac\right)^2n^2\left(a+bx^n+cx^{2n}\right)}$$
$$x\left(ab^2c^2d\left(3ae^2\left(1-9n\right)-5cd^2\left(1-3n\right)\right)+4a^2c^3d\left(cd^2-3ae^2\right)\left(1-4n\right)-2ab^5e^3n+2a^2bc^2\right.$$
$$e\left(3cd^2\left(2-3n\right)-5ae^2n\right)-3ab^3ce\left(cd^2-3ae^2n\right)+b^4cd\left(cd^2\left(1-2n\right)+6ae^2n\right)+$$
$$c\left(4a^2c^2e\left(3cd^2-ae^2\right)\left(1-3n\right)-2ab^4e^3n-2abc^2d\left(cd^2\left(2-7n\right)+3ae^2n\right)+\right.$$
$$\left.\left.b^3cd\left(cd^2\left(1-2n\right)+6ae^2n\right)-ab^2ce\left(3cd^2-ae^2\left(1+2n\right)\right)\right)x^n\right)+$$
$$\left(e^2\left(bc\left(2ae\left(2-5n\right)+3\sqrt{b^2-4ac}\,d\left(1-n\right)\right)-2ac\left(6cd\left(1-2n\right)+\sqrt{b^2-4ac}\,e\left(1-n\right)\right)-\right.\right.$$
$$\left.\left.b^3e\left(1-n\right)+b^2\left(3cd-\sqrt{b^2-4ac}\,e\right)\left(1-n\right)\right)\right.$$
$$\left.x\,\text{Hypergeometric2F1}\left[1,\ \frac{1}{n},\ 1+\frac{1}{n},\ -\frac{2cx^n}{b-\sqrt{b^2-4ac}}\right]\right)\Big/$$

$$\left(a\,c\,\left(b^2-4\,a\,c\right)\,\left(b^2-4\,a\,c-b\,\sqrt{b^2-4\,a\,c}\right)\,n\right)+$$

$$\frac{1}{2\,a^2\,c\,\left(b^2-4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,n^2}$$

$$\left(\left(1-n\right)\,\left(4\,a^2\,c^2\,e\,\left(3\,c\,d^2-a\,e^2\right)\,\left(1-3\,n\right)-2\,a\,b^4\,e^3\,n-2\,a\,b\,c^2\,d\,\left(c\,d^2\,\left(2-7\,n\right)+3\,a\,e^2\,n\right)+\right.\right.$$

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

$$\left(2\,a\,b^5\,e^3\,\left(1-n\right)\,n-b^4\,c\,d\,\left(1-n\right)\,\left(c\,d^2\,\left(1-2\,n\right)+6\,a\,e^2\,n\right)-8\,a^2\,c^3\,d\,\left(c\,d^2-3\,a\,e^2\right)\right.$$

$$\left(1-6\,n+8\,n^2\right)+6\,a\,b^2\,c^2\,d\,\left(c\,d^2\,\left(1-4\,n+3\,n^2\right)-a\,e^2\,\left(1-10\,n+15\,n^2\right)\right)-$$

$$4\,a^2\,b\,c^2\,e\,\left(3\,c\,d^2\,\left(1-n-3\,n^2\right)+a\,e^2\,\left(1-11\,n+19\,n^2\right)\right)+$$

$$\left.\left.a\,b^3\,c\,e\,\left(3\,c\,d^2\,\left(1-n\right)+a\,e^2\,\left(1-19\,n+30\,n^2\right)\right)\right)\right)$$

$$x\,\text{Hypergeometric2F1}\left[1,\,\frac{1}{n},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(e^2\,\left(b\,c\,\left(2\,a\,e\,\left(2-5\,n\right)-3\,\sqrt{b^2-4\,a\,c}\,d\,\left(1-n\right)\right)-2\,a\,c\,\left(6\,c\,d\,\left(1-2\,n\right)-\sqrt{b^2-4\,a\,c}\,e\,\left(1-n\right)\right)-\right.\right.$$

$$\left.\left.b^3\,e\,\left(1-n\right)+b^2\,\left(3\,c\,d+\sqrt{b^2-4\,a\,c}\,e\right)\,\left(1-n\right)\right)\right.$$

$$\left.x\,\text{Hypergeometric2F1}\left[1,\,\frac{1}{n},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(a\,c\,\left(b^2-4\,a\,c\right)\,\left(b^2-4\,a\,c+b\,\sqrt{b^2-4\,a\,c}\right)\,n\right)+$$

$$\frac{1}{2\,a^2\,c\,\left(b^2-4\,a\,c\right)^2\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2}$$

$$\left(\left(1-n\right)\,\left(4\,a^2\,c^2\,e\,\left(3\,c\,d^2-a\,e^2\right)\,\left(1-3\,n\right)-2\,a\,b^4\,e^3\,n-2\,a\,b\,c^2\,d\,\left(c\,d^2\,\left(2-7\,n\right)+3\,a\,e^2\,n\right)+\right.\right.$$

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

$$\left(2\,a\,b^5\,e^3\,\left(1-n\right)\,n-b^4\,c\,d\,\left(1-n\right)\,\left(c\,d^2\,\left(1-2\,n\right)+6\,a\,e^2\,n\right)-8\,a^2\,c^3\,d\,\left(c\,d^2-3\,a\,e^2\right)\right.$$

$$\left(1-6\,n+8\,n^2\right)+6\,a\,b^2\,c^2\,d\,\left(c\,d^2\,\left(1-4\,n+3\,n^2\right)-a\,e^2\,\left(1-10\,n+15\,n^2\right)\right)-$$

$$4\,a^2\,b\,c^2\,e\,\left(3\,c\,d^2\,\left(1-n-3\,n^2\right)+a\,e^2\,\left(1-11\,n+19\,n^2\right)\right)+$$

$$\left.\left.a\,b^3\,c\,e\,\left(3\,c\,d^2\,\left(1-n\right)+a\,e^2\,\left(1-19\,n+30\,n^2\right)\right)\right)\right)$$

$$x\,\text{Hypergeometric2F1}\left[1,\,\frac{1}{n},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]$$

Result (type 5, 13018 leaves):

$$\left(\left(-b^4\,d^3+5\,a\,b^2\,c\,d^3-4\,a^2\,c^2\,d^3+3\,a\,b^3\,d^2\,e-12\,a^2\,b\,c\,d^2\,e-3\,a^2\,b^2\,d\,e^2+12\,a^3\,c\,d\,e^2+3\,b^4\,d^3\,n-\right.\right.$$

$$\left.\left.21\,a\,b^2\,c\,d^3\,n+24\,a^2\,c^2\,d^3\,n-3\,a\,b^3\,d^2\,e\,n+30\,a^2\,b\,c\,d^2\,e\,n-3\,a^2\,b^2\,d\,e^2\,n-24\,a^3\,c\,d\,e^2\,n+\right.\right.$$

$$\left.\left.6\,a^3\,b\,e^3\,n-2\,b^4\,d^3\,n^2+16\,a\,b^2\,c\,d^3\,n^2-32\,a^2\,c^2\,d^3\,n^2\right)\,x\right)\Big/\left(2\,a^3\,\left(-b^2+4\,a\,c\right)^2\,n^2\right)+$$

$$\left(\left(b^4\,d^3-5\,a\,b^2\,c\,d^3+4\,a^2\,c^2\,d^3-3\,a\,b^3\,d^2\,e+12\,a^2\,b\,c\,d^2\,e+3\,a^2\,b^2\,d\,e^2-12\,a^3\,c\,d\,e^2-3\,b^4\,d^3\,n+\right.\right.$$

$$\left.\left.21\,a\,b^2\,c\,d^3\,n-24\,a^2\,c^2\,d^3\,n+3\,a\,b^3\,d^2\,e\,n-30\,a^2\,b\,c\,d^2\,e\,n+3\,a^2\,b^2\,d\,e^2\,n+24\,a^3\,c\,d\,e^2\,n-\right.\right.$$

$$6\,a^3\,b\,e^3\,n + 2\,b^4\,d^3\,n^2 - 16\,a\,b^2\,c\,d^3\,n^2 + 32\,a^2\,c^2\,d^3\,n^2\Big)\,x\Big) \Big/ \Big(2\,a^3\,\left(-b^2+4\,a\,c\right)^2\,n^2\Big) -$$
$$\Big(x\,\Big(b^2\,c\,d^3 - 2\,a\,c^2\,d^3 - 3\,a\,b\,c\,d^2\,e + 6\,a^2\,c\,d\,e^2 - a^2\,b\,e^3 + b\,c^2\,d^3\,x^n -$$
$$6\,a\,c^2\,d^2\,e\,x^n + 3\,a\,b\,c\,d\,e^2\,x^n - a\,b^2\,e^3\,x^n + 2\,a^2\,c\,e^3\,x^n\Big)\Big) \Big/$$
$$\Big(2\,a\,c\,\left(-b^2+4\,a\,c\right)\,n\,\left(a+b\,x^n+c\,x^{2\,n}\right)^2\Big) + \frac{1}{2\,a^2\,c\,\left(-b^2+4\,a\,c\right)^2\,n^2\,\left(a+b\,x^n+c\,x^{2\,n}\right)}$$
$$\Big(-b^4\,c\,d^3\,x + 5\,a\,b^2\,c^2\,d^3\,x - 4\,a^2\,c^3\,d^3\,x + 3\,a\,b^3\,c\,d^2\,e\,x - 12\,a^2\,b\,c^2\,d^2\,e\,x - 3\,a^2\,b^2\,c\,d\,e^2\,x +$$
$$12\,a^3\,c^2\,d\,e^2\,x + 2\,b^4\,c\,d^3\,n\,x - 15\,a\,b^2\,c^2\,d^3\,n\,x + 16\,a^2\,c^3\,d^3\,n\,x + 18\,a^2\,b\,c^2\,d^2\,e\,n\,x -$$
$$9\,a^2\,b^2\,c\,d\,e^2\,n\,x + a^2\,b^3\,e^3\,n\,x + 2\,a^3\,b\,c\,e^3\,n\,x - b^3\,c^2\,d^3\,x^{1+n} + 4\,a\,b\,c^3\,d^3\,x^{1+n} + 3\,a\,b^2\,c^2\,d^2\,e\,x^{1+n} -$$
$$12\,a^2\,c^3\,d^2\,e\,x^{1+n} - a^2\,b^2\,c\,e^3\,x^{1+n} + 4\,a^3\,c^2\,e^3\,x^{1+n} + 2\,b^3\,c^2\,d^3\,n\,x^{1+n} - 14\,a\,b\,c^3\,d^3\,n\,x^{1+n} +$$
$$36\,a^2\,c^3\,d^2\,e\,n\,x^{1+n} - 18\,a^2\,b\,c^2\,d\,e^2\,n\,x^{1+n} + 2\,a^2\,b^2\,c\,e^3\,n\,x^{1+n} + 4\,a^3\,c^2\,e^3\,n\,x^{1+n}\Big) +$$

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

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

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}18\,c^2\,d^2\,e\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$
$$\left.\text{Hypergeometric2F1}\Big[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\,\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big] + \frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]-$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}9\,b\,c\,d\,e^2\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}b^2\,e^3\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}2\,a\,c\,e^3\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\left(b^3\,c\,d^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right/$$

$$\left(2\,a^2\,\left(-b^2+4\,a\,c\right)^2\,n^2\right)-\left(2\,b\,c^2\,d^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right/$$

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

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right/$$

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

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\left(b^2\,e^3\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right)\Big/$$

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

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]-$$

$$\left(3\,b^3\,c\,d^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right/$$

$$\left(2\,a^2\,\left(-b^2+4\,a\,c\right)^2\,n\right)+\frac{1}{a\,\left(-b^2+4\,a\,c\right)^2\,n}9\,b\,c^2\,d^3\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+$$

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

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\right/$$

$$\left(2\,a\,\left(-b^2+4\,a\,c\right)^2\,n\right)-\frac{1}{\left(-b^2+4\,a\,c\right)^2\,n}24\,c^2\,d^2\,e\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2 n}9\,b\,c\,d\,e^2\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)-$$

$$\frac{1}{2\left(-b^2+4\,a\,c\right)^2 n}3\,b^2\,e^3\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)-$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\frac{1}{a\left(-b^2+4ac\right)^2}8b^2cd^3x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)-\frac{1}{\left(-b^2+4ac\right)^2}16c^2d^3x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)-$$

$$\Bigg(b^4\,d^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg)\Big/$$

$$\left(2\,a^2\left(-b^2+4\,a\,c\right)^2n^2\right)+\Bigg(5\,b^2\,c\,d^3\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)+$$

$$\left(3b^3d^2ex\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.\left.-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)-$$

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

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\left(3b^4d^3x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)\right)\Big/\left(2a^2\left(-b^2+4ac\right)^2n\right)-\left(21b^2cd^3x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

$$\left(2\,a\left(-b^2+4\,a\,c\right)^2\,n\right)+\frac{1}{\left(-b^2+4\,a\,c\right)^2\,n}12\,c^2\,d^3$$

$$x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)-$$

$$\left(3\,b^3\,d^2\,e\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Bigg]\Bigg)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg/$$

$$\left(2\,a\left(-b^2+4\,a\,c\right)^2 n\right)+\frac{1}{\left(-b^2+4\,a\,c\right)^2 n}15\,b\,c\,d^2$$

e

x

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)-\frac{1}{\left(-b^2+4\,a\,c\right)^2 n}12\,a\,c\,d\,e^2\,x$$

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

Problem 81: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(d+ex^n\right)^2}{\left(a+bx^n+cx^{2n}\right)^3}\,dx$$

Optimal (type 5, 1191 leaves, 11 steps):

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

$$\frac{e^2 x\left(b^2-2 a c+b c x^n\right)}{a c\left(b^2-4 a c\right) n\left(a+b x^n+c x^{2 n}\right)}+$$

$$\left(x\left(2 a b^3 c d e-a b^2 c\left(a e^2(1-9 n)-5 c d^2(1-3 n)\right)-4 a^2 c^2\left(c d^2-a e^2\right)(1-4 n)-\right.\right.$$
$$4 a^2 b c^2 d e(2-3 n)-b^4\left(c d^2(1-2 n)+2 a e^2 n\right)+c\left(2 a b^2 c d e-8 a^2 c^2 d e(1-3 n)+\right.$$
$$\left.\left.\left.2 a b c\left(c d^2(2-7 n)+a e^2 n\right)-b^3\left(c d^2(1-2 n)+2 a e^2 n\right)\right) x^n\right)\right)\Big/$$
$$\left(2 a^2 c\left(b^2-4 a c\right)^2 n^2\left(a+b x^n+c x^{2 n}\right)\right)-\left(e^2\left(4 a c(1-2 n)-b^2(1-n)-b\sqrt{b^2-4 a c}\,(1-n)\right)\right.$$
$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/$$
$$\left(a\left(b^2-4 a c\right)\left(b^2-4 a c-b\sqrt{b^2-4 a c}\right) n\right)-$$
$$\left(\left((1-n)\left(2 a b^2 c d e-8 a^2 c^2 d e(1-3 n)+\right.\right.\right.$$
$$\left.\left.2 a b c\left(c d^2(2-7 n)+a e^2 n\right)-b^3\left(c d^2(1-2 n)+2 a e^2 n\right)\right)+\frac{1}{\sqrt{b^2-4 a c}}\right.$$
$$\left(2 a b^3 c d e(1-n)-b^4(1-n)\left(c d^2(1-2 n)+2 a e^2 n\right)-8 a^2 b c^2 d e\left(1-n-3 n^2\right)-\right.$$
$$\left.\left.\left.8 a^2 c^2\left(c d^2-a e^2\right)\left(1-6 n+8 n^2\right)+2 a b^2 c\left(3 c d^2\left(1-4 n+3 n^2\right)-a e^2\left(1-10 n+15 n^2\right)\right)\right)\right)$$
$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/$$
$$\left(2 a^2\left(b^2-4 a c\right)^2\left(b-\sqrt{b^2-4 a c}\right) n^2\right)-$$
$$\left(e^2\left(4 a c(1-2 n)-b^2(1-n)+b\sqrt{b^2-4 a c}\,(1-n)\right) x\right.$$
$$\left.\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/$$
$$\left(a\left(b^2-4 a c\right)\left(b^2-4 a c+b\sqrt{b^2-4 a c}\right) n\right)-$$
$$\left(\left((1-n)\left(2 a b^2 c d e-8 a^2 c^2 d e(1-3 n)+2 a b c\left(c d^2(2-7 n)+a e^2 n\right)-\right.\right.\right.$$
$$\left.\left.b^3\left(c d^2(1-2 n)+2 a e^2 n\right)\right)-\frac{1}{\sqrt{b^2-4 a c}}\right.$$
$$\left(2 a b^3 c d e(1-n)-b^4(1-n)\left(c d^2(1-2 n)+2 a e^2 n\right)-8 a^2 b c^2 d e\left(1-n-3 n^2\right)-\right.$$
$$\left.\left.\left.8 a^2 c^2\left(c d^2-a e^2\right)\left(1-6 n+8 n^2\right)+2 a b^2 c\left(3 c d^2\left(1-4 n+3 n^2\right)-a e^2\left(1-10 n+15 n^2\right)\right)\right)\right)$$
$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/\left(2 a^2\left(b^2-4 a c\right)^2\left(b+\sqrt{b^2-4 a c}\right) n^2\right)$$

Result (type 5, 10910 leaves):

$$\left(\left(-b^4 d^2+5 a b^2 c d^2-4 a^2 c^2 d^2+2 a b^3 d e-8 a^2 b c d e-a^2 b^2 e^2+4 a^3 c e^2+\right.\right.$$
$$\left.3 b^4 d^2 n-21 a b^2 c d^2 n+24 a^2 c^2 d^2 n-2 a b^3 d e n+20 a^2 b c d e n-a^2 b^2 e^2 n-\right.$$

$$8\,a^3\,c\,e^2\,n - 2\,b^4\,d^2\,n^2 + 16\,a\,b^2\,c\,d^2\,n^2 - 32\,a^2\,c^2\,d^2\,n^2\Big)\,x\Big) \Big/ \Big(2\,a^3\,\left(-b^2+4\,a\,c\right)^2\,n^2\Big) +$$
$$\Big(\Big(b^4\,d^2 - 5\,a\,b^2\,c\,d^2 + 4\,a^2\,c^2\,d^2 - 2\,a\,b^3\,d\,e + 8\,a^2\,b\,c\,d\,e + a^2\,b^2\,e^2 - 4\,a^3\,c\,e^2 - 3\,b^4\,d^2\,n +$$
$$21\,a\,b^2\,c\,d^2\,n - 24\,a^2\,c^2\,d^2\,n + 2\,a\,b^3\,d\,e\,n - 20\,a^2\,b\,c\,d\,e\,n + a^2\,b^2\,e^2\,n + 8\,a^3\,c\,e^2\,n +$$
$$2\,b^4\,d^2\,n^2 - 16\,a\,b^2\,c\,d^2\,n^2 + 32\,a^2\,c^2\,d^2\,n^2\Big)\,x\Big) \Big/ \Big(2\,a^3\,\left(-b^2+4\,a\,c\right)^2\,n^2\Big) -$$
$$\frac{x\,\left(b^2\,d^2 - 2\,a\,c\,d^2 - 2\,a\,b\,d\,e + 2\,a^2\,e^2 + b\,c\,d^2\,x^n - 4\,a\,c\,d\,e\,x^n + a\,b\,e^2\,x^n\right)}{2\,a\,\left(-b^2+4\,a\,c\right)\,n\,\left(a+b\,x^n+c\,x^{2\,n}\right)^2} +$$
$$\frac{1}{2\,a^2\,\left(-b^2+4\,a\,c\right)^2\,n^2\,\left(a+b\,x^n+c\,x^{2\,n}\right)}$$
$$\Big(-b^4\,d^2\,x + 5\,a\,b^2\,c\,d^2\,x - 4\,a^2\,c^2\,d^2\,x + 2\,a\,b^3\,d\,e\,x - 8\,a^2\,b\,c\,d\,e\,x - a^2\,b^2\,e^2\,x +$$
$$4\,a^3\,c\,e^2\,x + 2\,b^4\,d^2\,n\,x - 15\,a\,b^2\,c\,d^2\,n\,x + 16\,a^2\,c^2\,d^2\,n\,x + 12\,a^2\,b\,c\,d\,e\,n\,x -$$
$$3\,a^2\,b^2\,e^2\,n\,x - b^3\,c\,d^2\,x^{1+n} + 4\,a\,b\,c^2\,d^2\,x^{1+n} + 2\,a\,b^2\,c\,d\,e\,x^{1+n} - 8\,a^2\,c^2\,d\,e\,x^{1+n} +$$
$$2\,b^3\,c\,d^2\,n\,x^{1+n} - 14\,a\,b\,c^2\,d^2\,n\,x^{1+n} + 24\,a^2\,c^2\,d\,e\,n\,x^{1+n} - 6\,a^2\,b\,c\,e^2\,n\,x^{1+n}\Big) +$$
$$\frac{1}{a^2\,\left(-b^2+4\,a\,c\right)^2}b^3\,c\,d^2\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$
$$\text{Hypergeometric2F1}\Big[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\,\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big] + \frac{1}{\sqrt{b^2-4\,a\,c}}$$
$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\Big[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\,\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big]\right) -$$
$$\frac{1}{a\,\left(-b^2+4\,a\,c\right)^2}7\,b\,c^2\,d^2\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$
$$\text{Hypergeometric2F1}\Big[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\,\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big] + \frac{1}{\sqrt{b^2-4\,a\,c}}$$
$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\Big[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\,\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Big]\right) +$$
$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}12\,c^2\,d\,e\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)-$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}3\,b\,c\,e^2\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)+$$

$$\left(b^3\,c\,d^2\,x^{1+n}\,\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg)\Bigg/$$

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

$$\left.\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},\,-\frac{1}{n},\,\frac{-1+n}{n},\,-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right.\right.$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

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

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)\Bigg/$$

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

$$\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)-$$

$$\Bigg(3\,b^3\,c\,d^2\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}\right)$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(2a^2\left(-b^2+4ac\right)^2n\right)+\frac{1}{a\left(-b^2+4ac\right)^2n}9bc^2d^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\frac{1}{a\left(-b^2+4ac\right)^2n}b^2cdex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]-$$

$$\frac{1}{\left(-b^2+4ac\right)^2n}16c^2dex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4ac\right)^2 n}3bce^2x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)-\frac{1}{a^2\left(-b^2+4ac\right)^2}b^4d^2x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\frac{1}{a\left(-b^2+4ac\right)^2}8b^2cd^2x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)-\frac{1}{\left(-b^2+4ac\right)^2}16c^2d^2x$$

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

$$\left(2\,a^2\,\left(-b^2+4\,a\,c\right)^2\,n^2\right)+\left(5\,b^2\,c\,d^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg)\Big/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)+$$

$$\left(b^3\,d\,e\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\right.\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\right.$$

$$\left.\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)-\right.$$

$$\left(b^2\,e^2\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.$$

$$\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

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

$$\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)+\right.\right.$$

$$\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\right)+$$

$$\left(3\,b^4\,d^2\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)+\right.\right.\right.$$

$$\left.\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(2a^2\left(-b^2+4ac\right)^2n\right)-\left(21b^2cd^2x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(2a\left(-b^2+4ac\right)^2n\right)+\frac{1}{\left(-b^2+4ac\right)^2n}12c^2d^2$$

$$x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\right.\right.\right.$$

$$\left.\left.\left.\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.\right.\right.$$

$$\left.\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\right.\right.\right.$$

$$\left.\left.\left.\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)-\frac{1}{a\left(-b^2+4ac\right)^2n}b^3dex\right.\right.\right.$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\frac{1}{\left(-b^2+4ac\right)^2 n}10bcdex$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)-\frac{1}{2\left(-b^2+4ac\right)^2 n}b^2e^2x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

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

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)$$

Problem 82: Result more than twice size of optimal antiderivative.

$$\int\frac{d+e\,x^n}{\left(a+b\,x^n+c\,x^{2\,n}\right)^3}\,dx$$

Optimal (type 5, 713 leaves, 5 steps):

$$\frac{x\left(b^2 d-2 a c d-a b e+c\left(b d-2 a e\right) x^n\right)}{2 a\left(b^2-4 a c\right) n\left(a+b x^n+c x^{2 n}\right)^2}+$$
$$\left(x\left(a b^3 e-4 a^2 c^2 d\left(1-4 n\right)+5 a b^2 c d\left(1-3 n\right)-2 a^2 b c e\left(2-3 n\right)-\right.\right.$$
$$\left.\left.b^4 d\left(1-2 n\right)+c\left(a b^2 e+2 a b c d\left(2-7 n\right)-4 a^2 c e\left(1-3 n\right)-b^3 d\left(1-2 n\right)\right) x^n\right)\right)\Big/$$
$$\left(2 a^2\left(b^2-4 a c\right)^2 n^2\left(a+b x^n+c x^{2 n}\right)\right)+$$
$$\left(c\left(a b^2\left(\sqrt{b^2-4 a c}\, e+6 c d\left(1-3 n\right)\right)\left(1-n\right)+b^3\left(a e-\sqrt{b^2-4 a c}\, d\left(1-2 n\right)\right)\left(1-n\right)-\right.\right.$$
$$b^4 d\left(1-3 n+2 n^2\right)-2 a b c\left(2 a e\left(1-n-3 n^2\right)-\sqrt{b^2-4 a c}\, d\left(2-9 n+7 n^2\right)\right)-$$
$$\left.\left.4 a^2 c\left(\sqrt{b^2-4 a c}\, e\left(1-4 n+3 n^2\right)+2 c d\left(1-6 n+8 n^2\right)\right)\right)\right.$$
$$x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\Big)\Big/$$
$$\left(2 a^2\left(b^2-4 a c\right)^2\left(b^2-4 a c-b\sqrt{b^2-4 a c}\right) n^2\right)-$$
$$\left(c\left(a b^2\left(\sqrt{b^2-4 a c}\, e-6 c d\left(1-3 n\right)\right)\left(1-n\right)-b^3\left(a e+\sqrt{b^2-4 a c}\, d\left(1-2 n\right)\right)\left(1-n\right)+\right.\right.$$
$$b^4 d\left(1-3 n+2 n^2\right)+2 a b c\left(2 a e\left(1-n-3 n^2\right)+\sqrt{b^2-4 a c}\, d\left(2-9 n+7 n^2\right)\right)-$$
$$\left.\left.4 a^2 c\left(\sqrt{b^2-4 a c}\, e\left(1-4 n+3 n^2\right)-2 c d\left(1-6 n+8 n^2\right)\right)\right)\right.$$
$$x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\Big)\Big/$$
$$\left(2 a^2\left(b^2-4 a c\right)^2\left(b^2-4 a c+b\sqrt{b^2-4 a c}\right) n^2\right)$$

Result (type 5, 8593 leaves) :

$$\left(\left(-b^4 d+5 a b^2 c d-4 a^2 c^2 d+a b^3 e-4 a^2 b c e+3 b^4 d n-21 a b^2 c d n+24 a^2 c^2 d n-a b^3 e n+\right.\right.$$
$$\left.\left.10 a^2 b c e n-2 b^4 d n^2+16 a b^2 c d n^2-32 a^2 c^2 d n^2\right) x\right)\Big/\left(2 a^3\left(-b^2+4 a c\right)^2 n^2\right)+$$
$$\left(\left(b^4 d-5 a b^2 c d+4 a^2 c^2 d-a b^3 e+4 a^2 b c e-3 b^4 d n+21 a b^2 c d n-24 a^2 c^2 d n+\right.\right.$$
$$\left.\left.a b^3 e n-10 a^2 b c e n+2 b^4 d n^2-16 a b^2 c d n^2+32 a^2 c^2 d n^2\right) x\right)\Big/$$
$$\left(2 a^3\left(-b^2+4 a c\right)^2 n^2\right)+\frac{x\left(-b^2 d+2 a c d+a b e-b c d x^n+2 a c e x^n\right)}{2 a\left(-b^2+4 a c\right) n\left(a+b x^n+c x^{2 n}\right)^2}+$$
$$\left(-b^4 d x+5 a b^2 c d x-4 a^2 c^2 d x+a b^3 e x-4 a^2 b c e x+2 b^4 d n x-15 a b^2 c d n x+\right.$$
$$16 a^2 c^2 d n x+6 a^2 b c e n x-b^3 c d x^{1+n}+4 a b c^2 d x^{1+n}+a b^2 c e x^{1+n}-$$
$$\left.4 a^2 c^2 e x^{1+n}+2 b^3 c d n x^{1+n}-14 a b c^2 d n x^{1+n}+12 a^2 c^2 e n x^{1+n}\right)\Big/$$
$$\left(2 a^2\left(-b^2+4 a c\right)^2 n^2\left(a+b x^n+c x^{2 n}\right)\right)+\frac{1}{a^2\left(-b^2+4 a c\right)^2}$$
$$b^3 c d x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4 a c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4 a c}}{2 c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg)-$$

$$\frac{1}{a\left(-b^2+4\,a\,c\right)^2}7\,b\,c^2\,d\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\frac{1}{\left(-b^2+4\,a\,c\right)^2}6\,c^2\,e\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+$$

$$\left(b^3\,c\,d\,x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4\,a\,c}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},\ -\frac{1}{n},\ \frac{-1+n}{n},\ -\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4\,a\,c}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(2a^2\left(-b^2+4ac\right)^2n^2\right)-\Bigg(2bc^2dx^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\Bigg(-\frac{1}{\sqrt{b^2-4ac}}\Bigg(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\Bigg)^{-1/n}$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(a\left(-b^2+4ac\right)^2n^2\right)-\Bigg(b^2ce x^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\Bigg(-\frac{1}{\sqrt{b^2-4ac}}\Bigg(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\Bigg)^{-1/n}$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(2a\left(-b^2+4ac\right)^2n^2\right)+\frac{1}{\left(-b^2+4ac\right)^2n^2}2c^2ex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\Bigg(-\frac{1}{\sqrt{b^2-4ac}}\Bigg(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\Bigg)^{-1/n}$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)-$$

$$\Bigg(3b^3cdx^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right.$$

$$\left.\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(2a^2\left(-b^2+4ac\right)^2n\right)+\frac{1}{a\left(-b^2+4ac\right)^2n}9bc^2dx^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\Bigg(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}$$

$$\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+$$

$$\Bigg(b^2cex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\right.$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\right.$$

$$\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg)\Bigg/$$

$$\left(2a\left(-b^2+4ac\right)^2n\right)-\frac{1}{\left(-b^2+4ac\right)^2n}8c^2ex^{1+n}\left(x^n\right)^{\frac{1}{n}-\frac{1+n}{n}}$$

$$\left(-\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.$$

$$\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]+\frac{1}{\sqrt{b^2-4ac}}\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}$$

$$\left.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)-\frac{1}{a^2\left(-b^2+4ac\right)^2}b^4dx$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\right)+\frac{1}{a\left(-b^2+4ac\right)^2}8b^2cdx$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\right)\Bigg/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)-\frac{1}{\left(-b^2+4\,a\,c\right)^2}16\,c^2\,d\,x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\right.$$

$$\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/$$

$$\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)-$$

$$\left(b^4\,d\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$\left.\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(2a^2\left(-b^2+4ac\right)^2n^2\right)+\left(5b^2cdx\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)\Bigg)\Bigg/$$

$$\left(2a\left(-b^2+4ac\right)^2n^2\right)-\frac{1}{\left(-b^2+4ac\right)^2n^2}2c^2dx$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4ac}}{2c\left(-\frac{-b-\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\right.\right.$$

$$\left.\left.\left(\frac{b\left(-b-\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b-\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.\right.$$

$$\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4ac}}{2c\left(-\frac{-b+\sqrt{b^2-4ac}}{2c}+x^n\right)}\right]\Bigg/\right.\right.$$

$$\left.\left.\left(\frac{b\left(-b+\sqrt{b^2-4ac}\right)}{2c}+\frac{\left(-b+\sqrt{b^2-4ac}\right)^2}{2c}\right)+\right.\right.$$

$$\left(b^3\, e\, x \left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.$$

$$\left.\left.\left.\left.-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.$$

$$\left.\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Big/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)\Bigg)\Big/$$

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

$$\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Big)\Big/$$

$$\left.\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Big)\Big/$$

$$\left.\left.\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)+$$

$$\left(3\,b^4\,d\,x\left(\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\right.\right.\right.\right.\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.$$

$$-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\Bigg]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.$$

$$\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\Bigg/$$

$$\left(2\,a^2\left(-b^2+4\,a\,c\right)^2 n\right)-\left(21\,b^2\,c\,d\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\right.\right.\right.$$

$$\left.\left.\left.\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.\right.$$

$$\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},\right.\right.\right.\right.$$

$$\left.\left.\left.\left.-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\right)\Bigg/$$

$$\left(2\,a\left(-b^2+4\,a\,c\right)^2 n\right)+\frac{1}{\left(-b^2+4\,a\,c\right)^2 n}12\,c^2$$

$$d$$

$$x$$

$$\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\right.$$

$$\left.\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)-$$

$$\left(b^3\,e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.\right.$$

$$\left.\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\right)\right)\Bigg/$$

$$\left(2\,a\left(-b^2+4\,a\,c\right)^2n\right)+\frac{1}{\left(-b^2+4\,a\,c\right)^2n}5\,b\,c$$

$$e\,x\left(\left(1-\left(\frac{x^n}{-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\left(\frac{b\left(-b-\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b-\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)+\right.$$

$$\left.\left(1-\left(\frac{x^n}{-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n}\right)^{-1/n}\text{Hypergeometric2F1}\left[-\frac{1}{n},-\frac{1}{n},\frac{-1+n}{n},-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c\left(-\frac{-b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)}\right]\right)\Bigg/\right.$$

$$\left(\frac{b\left(-b+\sqrt{b^2-4\,a\,c}\right)}{2\,c}+\frac{\left(-b+\sqrt{b^2-4\,a\,c}\right)^2}{2\,c}\right)\Bigg)$$

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

$$\int\frac{1}{\left(d+e\,x^n\right)\left(a+b\,x^n+c\,x^{2\,n}\right)^3}\,dx$$

Optimal (type 5, 1708 leaves, 15 steps):

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

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

$$\Big(x\left(2\,a^2\,b\,c^2\,e\left(4-11\,n\right)-3\,a\,b^3\,c\,e\left(2-5\,n\right)-4\,a^2\,c^3\,d\left(1-4\,n\right)+\right.$$
$$5\,a\,b^2\,c^2\,d\left(1-3\,n\right)-b^4\,c\,d\left(1-2\,n\right)+b^5\left(e-2\,e\,n\right)-c\left(a\,b^2\,c\,e\left(5-14\,n\right)-\right.$$
$$\left.\left.2\,a\,b\,c^2\,d\left(2-7\,n\right)-4\,a^2\,c^2\,e\left(1-3\,n\right)+b^3\,c\,d\left(1-2\,n\right)-b^4\,e\left(1-2\,n\right)\right)x^n\right)\Big)\Big/$$
$$\left(2\,a^2\left(b^2-4\,a\,c\right)^2\left(c\,d^2-b\,d\,e+a\,e^2\right)n^2\left(a+b\,x^n+c\,x^{2\,n}\right)\right)-$$
$$\left(c\,e^4\left(2\,c\,d-\left(b+\sqrt{b^2-4\,a\,c}\right)e\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(b^2-4\,a\,c-b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$
$$\left(c\,e^2\left(b\,c\left(2\,a\,e\left(2-3\,n\right)+\sqrt{b^2-4\,a\,c}\,d\left(1-n\right)\right)-\right.\right.$$
$$2\,a\,c\left(2\,c\,d\left(1-2\,n\right)-\sqrt{b^2-4\,a\,c}\,e\left(1-n\right)\right)-b^3\,e\left(1-n\right)+b^2\left(c\,d-\sqrt{b^2-4\,a\,c}\,e\right)\left(1-n\right)\Big)$$
$$\left.x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(a\left(b^2-4\,a\,c\right)\left(b^2-4\,a\,c-b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2 n\right)-$$
$$\frac{1}{2\,a^2\left(b^2-4\,a\,c\right)^2\left(b^2-4\,a\,c-b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)n^2}$$
$$c\left(a\,b^2\,c\left(\sqrt{b^2-4\,a\,c}\,e\left(5-14\,n\right)-6\,c\,d\left(1-3\,n\right)\right)\left(1-n\right)+b^3\,c\right.$$
$$\left(a\,e\left(7-18\,n\right)+\sqrt{b^2-4\,a\,c}\,d\left(1-2\,n\right)\right)\left(1-n\right)-b^5\,e\left(1-3\,n+2\,n^2\right)+b^4\left(c\,d-\sqrt{b^2-4\,a\,c}\,e\right)$$
$$\left(1-3\,n+2\,n^2\right)-4\,a^2\,c^2\left(\sqrt{b^2-4\,a\,c}\,e\left(1-4\,n+3\,n^2\right)-2\,c\,d\left(1-6\,n+8\,n^2\right)\right)-$$
$$\left.2\,a\,b\,c^2\left(\sqrt{b^2-4\,a\,c}\,d\left(2-9\,n+7\,n^2\right)+2\,a\,e\left(3-13\,n+13\,n^2\right)\right)\right)$$
$$x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right]-$$

$$\left(c\,e^4\left(2\,c\,d-\left(b-\sqrt{b^2-4\,a\,c}\right)e\right)x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(b^2-4\,a\,c+b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3\right)+$$
$$\left(c\,e^2\left(b\,c\left(2\,a\,e\,(2-3\,n)-\sqrt{b^2-4\,a\,c}\;d\,(1-n)\right)-\right.\right.$$
$$\left.2\,a\,c\left(2\,c\,d\,(1-2\,n)+\sqrt{b^2-4\,a\,c}\;e\,(1-n)\right)-b^3\,e\,(1-n)+b^2\left(c\,d+\sqrt{b^2-4\,a\,c}\;e\right)(1-n)\right)$$
$$x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\Big)\Big/$$
$$\left(a\left(b^2-4\,a\,c\right)\left(b^2-4\,a\,c+b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2n\right)+$$
$$\frac{1}{2\,a^2\left(b^2-4\,a\,c\right)^2\left(b^2-4\,a\,c+b\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)n^2}$$
$$c\left(a\,b^2\,c\left(\sqrt{b^2-4\,a\,c}\;e\,(5-14\,n)+6\,c\,d\,(1-3\,n)\right)(1-n)-b^3\,c\right.$$
$$\left(a\,e\,(7-18\,n)-\sqrt{b^2-4\,a\,c}\;d\,(1-2\,n)\right)(1-n)+b^5\,e\,(1-3\,n+2\,n^2)-b^4\left(c\,d+\sqrt{b^2-4\,a\,c}\;e\right)$$
$$(1-3\,n+2\,n^2)-4\,a^2\,c^2\left(\sqrt{b^2-4\,a\,c}\;e\,(1-4\,n+3\,n^2)+2\,c\,d\,(1-6\,n+8\,n^2)\right)-$$
$$\left.2\,a\,b\,c^2\left(\sqrt{b^2-4\,a\,c}\;d\,(2-9\,n+7\,n^2)-2\,a\,e\,(3-13\,n+13\,n^2)\right)\right)$$
$$x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$\frac{e^6\,x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{e\,x^n}{d}\right]}{d\left(c\,d^2-b\,d\,e+a\,e^2\right)^3}$$

Result (type 5, 43 535 leaves) : Display of huge result suppressed !

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

$$\int\frac{1}{\left(d+e\,x^n\right)^2\left(a+b\,x^n+c\,x^{2\,n}\right)^3}\,dx$$

Optimal (type 5, 2446 leaves, 16 steps) :

$$-\left(\left(x\left(2\,b^3\,c\,d\,e-6\,a\,b\,c^2\,d\,e-b^4\,e^2-b^2\,c\left(c\,d^2-4\,a\,e^2\right)+\right.\right.\right.$$
$$\left.\left.2\,a\,c^2\left(c\,d^2-a\,e^2\right)+c\left(2\,b^2\,c\,d\,e-4\,a\,c^2\,d\,e-b^3\,e^2-b\,c\left(c\,d^2-3\,a\,e^2\right)\right)x^n\right)\right)\Big/$$
$$\left(2\,a\left(b^2-4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2n\left(a+b\,x^n+c\,x^{2\,n}\right)^2\right)-$$
$$\left(e^2\,x\left(5\,b^3\,c\,d\,e-14\,a\,b\,c^2\,d\,e-2\,b^4\,e^2-b^2\,c\left(3\,c\,d^2-7\,a\,e^2\right)+2\,a\,c^2\left(3\,c\,d^2-a\,e^2\right)+\right.\right.$$
$$\left.\left.c\left(5\,b^2\,c\,d\,e-8\,a\,c^2\,d\,e-2\,b^3\,e^2-b\,c\left(3\,c\,d^2-5\,a\,e^2\right)\right)x^n\right)\right)\Big/$$
$$\left(a\left(b^2-4\,a\,c\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^3n\left(a+b\,x^n+c\,x^{2\,n}\right)\right)-$$
$$\frac{1}{2\,a^2\left(b^2-4\,a\,c\right)^2\left(c\,d^2-b\,d\,e+a\,e^2\right)^2n^2\left(a+b\,x^n+c\,x^{2\,n}\right)}$$

$$x \left(a b^2 c^2 \left(a e^2 \left(13-37 n\right)-5 c d^2 \left(1-3 n\right)\right)-b^4 c \left(a e^2 \left(7-17 n\right)-c d^2 \left(1-2 n\right)\right)-4 a^2 b c^3 d e \left(4-11 n\right)+6 a b^3 c^2 d e \left(2-5 n\right)+4 a^2 c^3 \left(c d^2-a e^2\right) \left(1-4 n\right)-2 b^5 c d e \left(1-2 n\right)+b^6 e^2 \left(1-2 n\right)+c \left(2 a b c^2 \left(a e^2 \left(4-13 n\right)-c d^2 \left(2-7 n\right)\right)-b^3 c \left(2 a e^2 \left(3-8 n\right)-c d^2 \left(1-2 n\right)\right)+2 a b^2 c^2 d e \left(5-14 n\right)-8 a^2 c^3 d e \left(1-3 n\right)-2 b^4 c d e \left(1-2 n\right)+b^5 e^2 \left(1-2 n\right)\right) x^n\right)-\left(c e^4 \left(10 c^2 d^2+3 b \left(b+\sqrt{b^2-4 a c}\right) e^2-2 c e \left(5 b d+3 \sqrt{b^2-4 a c}\, d+a e\right)\right) x \text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]\right)\Big/\left(\left(b^2-4 a c-b \sqrt{b^2-4 a c}\right) \left(c d^2-b d e+a e^2\right)^4\right)+\frac{1}{a \left(b^2-4 a c\right) \left(b^2-4 a c-b \sqrt{b^2-4 a c}\right) \left(c d^2-b d e+a e^2\right)^3 n}$$

$$c e^2 \left(4 a c^2 \left(e \left(a e \left(1-2 n\right)+2 \sqrt{b^2-4 a c}\, d \left(1-n\right)\right)-3 c d^2 \left(1-2 n\right)\right)-b^2 c \left(e \left(a e \left(9-13 n\right)+5 \sqrt{b^2-4 a c}\, d \left(1-n\right)\right)-3 c d^2 \left(1-n\right)\right)+b c \left(c d \left(4 a e \left(5-8 n\right)+3 \sqrt{b^2-4 a c}\, d \left(1-n\right)\right)-5 a \sqrt{b^2-4 a c}\, e^2 \left(1-n\right)\right)+2 b^4 e^2 \left(1-n\right)-b^3 e \left(5 c d-2 \sqrt{b^2-4 a c}\, e\right) \left(1-n\right)\right) x \text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]+\frac{1}{2 a^2 \left(b^2-4 a c\right)^2 \left(b-\sqrt{b^2-4 a c}\right) \left(c d^2-b d e+a e^2\right)^2 n^2}$$

$$c \left(\left(2 a b c^2 \left(a e^2 \left(4-13 n\right)-c d^2 \left(2-7 n\right)\right)-b^3 c \left(2 a e^2 \left(3-8 n\right)-c d^2 \left(1-2 n\right)\right)+2 a b^2 c^2 d e \left(5-14 n\right)-8 a^2 c^3 d e \left(1-3 n\right)-2 b^4 c d e \left(1-2 n\right)+b^5 e^2 \left(1-2 n\right)\right) \left(1-n\right)-\frac{1}{\sqrt{b^2-4 a c}} \left(b^4 c \left(4 a e^2 \left(2-5 n\right)-c d^2 \left(1-2 n\right)\right) \left(1-n\right)+2 b^5 c d e \left(1-3 n+2 n^2\right)-b^6 e^2 \left(1-3 n+2 n^2\right)-8 a^2 c^3 \left(c d^2-a e^2\right) \left(1-6 n+8 n^2\right)+8 a^2 b c^3 d e \left(3-13 n+13 n^2\right)-2 a b^3 c^2 d e \left(7-25 n+18 n^2\right)+2 a b^2 c^2 \left(3 c d^2 \left(1-4 n+3 n^2\right)-a e^2 \left(9-38 n+35 n^2\right)\right)\right)\right) x \text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b-\sqrt{b^2-4 a c}}\right]-\left(c e^4 \left(10 c^2 d^2+3 b \left(b-\sqrt{b^2-4 a c}\right) e^2-2 c e \left(5 b d-3 \sqrt{b^2-4 a c}\, d+a e\right)\right) x \text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2 c x^n}{b+\sqrt{b^2-4 a c}}\right]\right)\Big/\left(\left(b^2-4 a c+b \sqrt{b^2-4 a c}\right) \left(c d^2-b d e+a e^2\right)^4\right)+\frac{1}{a \left(b^2-4 a c\right) \left(b^2-4 a c+b \sqrt{b^2-4 a c}\right) \left(c d^2-b d e+a e^2\right)^3 n}$$

$$c\,e^2\left(4\,a\,c^2\left(e\left(a\,e\,(1-2\,n)-2\sqrt{b^2-4\,a\,c}\;d\,(1-n)\right)-3\,c\,d^2\,(1-2\,n)\right)-b^2\,c\left(e\left(a\,e\,(9-13\,n)-5\sqrt{b^2-4\,a\,c}\;d\,(1-n)\right)-3\,c\,d^2\,(1-n)\right)+b\,c\left(c\,d\left(4\,a\,e\,(5-8\,n)-3\sqrt{b^2-4\,a\,c}\;d\,(1-n)\right)+5\,a\sqrt{b^2-4\,a\,c}\;e^2\,(1-n)\right)+2\,b^4\,e^2\,(1-n)-b^3\,e\left(5\,c\,d+2\sqrt{b^2-4\,a\,c}\;e\right)(1-n)\right)\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+\frac{1}{2\,a^2\left(b^2-4\,a\,c\right)^2\left(b+\sqrt{b^2-4\,a\,c}\right)\left(c\,d^2-b\,d\,e+a\,e^2\right)^2\,n^2}$$

$$c\left(\left(2\,a\,b\,c^2\left(a\,e^2\,(4-13\,n)-c\,d^2\,(2-7\,n)\right)-b^3\,c\left(2\,a\,e^2\,(3-8\,n)-c\,d^2\,(1-2\,n)\right)+2\,a\,b^2\,c^2\,d\,e\,(5-14\,n)-8\,a^2\,c^3\,d\,e\,(1-3\,n)-2\,b^4\,c\,d\,e\,(1-2\,n)+b^5\,e^2\,(1-2\,n)\right)(1-n)+\frac{1}{\sqrt{b^2-4\,a\,c}}\left(b^4\,c\left(4\,a\,e^2\,(2-5\,n)-c\,d^2\,(1-2\,n)\right)(1-n)+2\,b^5\,c\,d\,e\,(1-3\,n+2\,n^2)-b^6\,e^2\,(1-3\,n+2\,n^2)-8\,a^2\,c^3\left(c\,d^2-a\,e^2\right)(1-6\,n+8\,n^2)+8\,a^2\,b\,c^3\,d\,e\,(3-13\,n+13\,n^2)-2\,a\,b^3\,c^2\,d\,e\,(7-25\,n+18\,n^2)+2\,a\,b^2\,c^2\left(3\,c\,d^2\,(1-4\,n+3\,n^2)-a\,e^2\,(9-38\,n+35\,n^2)\right)\right)\right)\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+\frac{3\,e^6\,(2\,c\,d-b\,e)\,x\,\text{Hypergeometric2F1}\left[1,\frac{1}{n},1+\frac{1}{n},-\frac{e\,x^n}{d}\right]}{d\left(c\,d^2-b\,d\,e+a\,e^2\right)^4}+\frac{e^6\,x\,\text{Hypergeometric2F1}\left[2,\frac{1}{n},1+\frac{1}{n},-\frac{e\,x^n}{d}\right]}{d^2\left(c\,d^2-b\,d\,e+a\,e^2\right)^3}$$

Result (type 5, 56 566 leaves) : Display of huge result suppressed!

Problem 85: Result more than twice size of optimal antiderivative.

$$\int\left(d+e\,x^n\right)\sqrt{a+b\,x^n+c\,x^{2\,n}}\;\mathbb{d}x$$

Optimal (type 6, 292 leaves, 6 steps) :

$$\left(e\,x^{1+n}\,\sqrt{a+b\,x^n+c\,x^{2\,n}}\;\text{AppellF1}\left[1+\frac{1}{n},-\frac{1}{2},-\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left((1+n)\,\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\,\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right)+$$
$$\left(d\,x\,\sqrt{a+b\,x^n+c\,x^{2\,n}}\;\text{AppellF1}\left[\frac{1}{n},-\frac{1}{2},-\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\,\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right)$$

Result (type 6, 3778 leaves):

$$\sqrt{a+b\,x^n+c\,x^{2\,n}}\left(\frac{(2\,c\,d+4\,c\,d\,n+b\,e\,n)\,x}{2\,c\,(1+n)\,(1+2\,n)}+\frac{e\,x^{1+n}}{1+2\,n}\right)-$$
$$\left(2\,a^2\,b\,d\,n\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\right.$$
$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Big)\Big/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)-$$
$$\left(4\,a^3\,e\,n\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\right.$$
$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Big)\Big/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$
$$\left(2\,a^2\,b^2\,e\,n\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\right.$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(4\,a^2\,b\,d\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(4\,a^3\,e\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(a^2\,b^2\,e\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\Bigg)-$$
$$\left(4\,a^3\,d\,n\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)+$$
$$\left(2\,a^3\,b\,e\,n\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$
$$\left(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(8\,a^3\,d\,n^2\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)$$

Problem 86: Result more than twice size of optimal antiderivative.

$$\int \left(d+e\,x^n\right)\,\left(a+b\,x^n+c\,x^{2\,n}\right)^{3/2}\,\mathbb{d}x$$

Optimal (type 6, 294 leaves, 6 steps):

$$\left(a\,e\,x^{1+n}\sqrt{a+b\,x^n+c\,x^{2\,n}}\,\text{AppellF1}\left[1+\frac{1}{n},-\frac{3}{2},-\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left((1+n)\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\,\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right)+$$
$$\left(a\,d\,x\sqrt{a+b\,x^n+c\,x^{2\,n}}\,\text{AppellF1}\left[\frac{1}{n},-\frac{3}{2},-\frac{3}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left(\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\,\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right)$$

Result (type 6, 10587 leaves):

$$\sqrt{a+b\,x^n+c\,x^{2\,n}}$$
$$\left(\left(\left(8\,a\,c^2\,d+80\,a\,c^2\,d\,n+6\,b^2\,c\,d\,n^2+256\,a\,c^2\,d\,n^2-6\,b^3\,e\,n^2+24\,a\,b\,c\,e\,n^2+24\,b^2\,c\,d\,n^3+\right.\right.\right.$$
$$\left.\left.\left.256\,a\,c^2\,d\,n^3-9\,b^3\,e\,n^3+60\,a\,b\,c\,e\,n^3\right)\,x\right)\Big/\left(8\,c^2\,(1+n)\,(1+2\,n)\,(1+3\,n)\,(1+4\,n)\right)+$$
$$\left(\left(4\,b\,c\,d+4\,a\,c\,e+30\,b\,c\,d\,n+32\,a\,c\,e\,n+56\,b\,c\,d\,n^2+3\,b^2\,e\,n^2+60\,a\,c\,e\,n^2\right)\,x^{1+n}\right)\Big/$$
$$\left(4\,c\,(1+2\,n)\,(1+3\,n)\,(1+4\,n)\right)+\frac{\left(2\,c\,d+2\,b\,e+8\,c\,d\,n+9\,b\,e\,n\right)\,x^{1+2\,n}}{2\,(1+3\,n)\,(1+4\,n)}+\frac{c\,e\,x^{1+3\,n}}{1+4\,n}\Bigg)-$$
$$\left(12\,a^3\,b\,d\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2\,(1+3\,n)\,(1+4\,n)\,\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right)$$
$$\left(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$
$$\left(3\,a^2\,b^3\,d\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(12\,a^4\,e\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(3\,a^2\,b^4\,e\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(15\,a^3\,b^2\,e\,n^2\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\Bigg)-$$
$$\left(66\,a^3\,b\,d\,n^3\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\Bigg)+$$
$$\left(27\,a^2\,b^3\,d\,n^3\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left(2\,c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\Bigg)-$$
$$\left(48\,a^4\,e\,n^3\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\left(6\,a^2\,b^4\,e\,n^3\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(c^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(-4\left(a+2\,a\,n\right)\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$

$$\left(42\,a^3\,b^2\,e\,n^3\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(-4\left(a+2\,a\,n\right)\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)-$$

$$\left(72\,a^3\,b\,d\,n^4\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+n\right)^2\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(-4\left(a+2\,a\,n\right)\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$

$$\left(6\,a^2\,b^3\,d\,n^4\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(36\,a^4\,e\,n^4\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(9\,a^2\,b^4\,e\,n^4\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(4\,c^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Bigg(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,x^n\Bigg(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(18\,a^3\,b^2\,e\,n^4\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+n)^2(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}$$

$$\left(-4\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\Bigg)-$$
$$\left(12\,a^4\,d\,n^2\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)+$$
$$\left(3\,a^3\,b^2\,d\,n^2\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(3\,a^3\,b^3\,e\,n^2\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(c^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(1+3\,n\right)\left(1+4\,n\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$4\,a\,(1+n)\,\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)+$$

$$\Big(12\,a^4\,b\,e\,n^2\,x\,\Big(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)$$

$$\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big/$$

$$\Big(c\,\Big(b-\sqrt{b^2-4\,a\,c}\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,(1+2\,n)\,(1+3\,n)\,(1+4\,n)\,\Big(a+x^n\,\Big(b+c\,x^n\Big)\Big)^{3/2}$$

$$\Big(\Big(\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$\Big(-b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$4\,a\,(1+n)\,\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)-$$

$$\Big(72\,a^4\,d\,n^3\,x\,\Big(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)$$

$$\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big/$$

$$\Big(\Big(b-\sqrt{b^2-4\,a\,c}\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,(1+2\,n)\,(1+3\,n)\,(1+4\,n)\,\Big(a+x^n\,\Big(b+c\,x^n\Big)\Big)^{3/2}$$

$$\Big(\Big(\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$\Big(-b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$4\,a\,(1+n)\,\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)+$$

$$\Big(12\,a^3\,b^2\,d\,n^3\,x\,\Big(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)$$

$$\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big/$$

$$\Big(c\,\Big(b-\sqrt{b^2-4\,a\,c}\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,(1+2\,n)\,(1+3\,n)\,(1+4\,n)\,\Big(a+x^n\,\Big(b+c\,x^n\Big)\Big)^{3/2}$$

$$\Big(\Big(\Big(b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$\Big(-b+\sqrt{b^2-4\,a\,c}\Big)\,n\,x^n\,\text{AppellF1}\Big[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-$$

$$4\,a\,(1+n)\,\text{AppellF1}\Big[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)-$$

$$\Big(9\,a^3\,b^3\,e\,n^3\,x\,\Big(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)\,\Big(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\Big)$$

$$\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg) \Bigg/$$

$$\left(2\,c^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+2\,n)(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{1}{2}, \frac{3}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{3}{2}, \frac{1}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -$$

$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right) +$$

$$\left(30\,a^4\,b\,e\,n^3\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$

$$\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg) \Bigg/$$

$$\left(c\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+2\,n)(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{1}{2}, \frac{3}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{3}{2}, \frac{1}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -$$

$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right) -$$

$$\left(96\,a^4\,d\,n^4\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$

$$\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg) \Bigg/$$

$$\left(\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)(1+2\,n)(1+3\,n)(1+4\,n)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{1}{2}, \frac{3}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right) n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n}, \frac{3}{2}, \frac{1}{2}, 2+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right] -$$

$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n}, \frac{1}{2}, \frac{1}{2}, 1+\frac{1}{n}, -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}, \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)$$

Problem 87: Result more than twice size of optimal antiderivative.

$$\int \frac{d+e\,x^n}{\sqrt{a+b\,x^n+c\,x^{2\,n}}}\,dx$$

Optimal (type 6, 292 leaves, 6 steps) :

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

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

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

$$\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\;\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]$$

Result (type 6, 688 leaves):

$$\frac{1}{c\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}}a\,x\,\left(b-\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n\right)$$

$$\left(-\left(\left(\left(e\,\left(1+2\,n\right)\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/\right.\right.\right.$$

$$\left(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\,\left(\left(b+\sqrt{b^2-4\,a\,c}\;\right)\,\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},\right.\right.$$

$$\left.\left.-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\left(b-\sqrt{b^2-4\,a\,c}\;\right)\right.$$

$$\left.\left.\left.\left.\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$

$$\left(d\,\left(1+n\right)^2\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(-\left(b+\sqrt{b^2-4\,a\,c}\;\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\;\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$\left.\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)$$

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

$$\int\frac{d+e\,x^n}{\left(a+b\,x^n+c\,x^{2\,n}\right)^{3/2}}\,\text{d}x$$

Optimal (type 6, 298 leaves, 6 steps):

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

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

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

$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{3}{2},\frac{3}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/\left(a\sqrt{a+b\,x^n+c\,x^{2\,n}}\right)$$

Result (type 6, 3012 leaves):

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

$$\left(8\,a\,b\,c\,d\,(1+2\,n)\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(\left(-b^2+4\,a\,c\right)\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n\,(1+n)\,\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$

$$\left(16\,a^2\,c\,e\,(1+2\,n)\,x^{1+n}\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(\left(-b^2+4\,a\,c\right)\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n\,(1+n)\,\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(-4\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,x^n\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$

$$\left(4\,a\,b^2\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(-b^2+4\,a\,c\right)\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(16\,a^2\,c\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(-b^2+4\,a\,c\right)\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(8\,a\,b^2\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(-b^2+4\,a\,c\right)\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)+$$
$$\left(16\,a^2\,c\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

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

Problem 89: Result more than twice size of optimal antiderivative.

$$\int\frac{d+e\,x^n}{\left(a+b\,x^n+c\,x^{2\,n}\right)^{5/2}}\,dx$$

Optimal (type 6, 298 leaves, 6 steps):

$$\left(e\,x^{1+n}\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\frac{5}{2},\frac{5}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(a^2\left(1+n\right)\sqrt{a+b\,x^n+c\,x^{2\,n}}\right)+\left(d\,x\sqrt{1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}}\sqrt{1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}}\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{5}{2},\frac{5}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/\left(a^2\sqrt{a+b\,x^n+c\,x^{2\,n}}\right)$$

Result (type 6, 8781 leaves):

$$\sqrt{a+b\,x^n+c\,x^{2\,n}}$$
$$\left(\frac{2\,x\left(-b^2\,d+2\,a\,c\,d+a\,b\,e-b\,c\,d\,x^n+2\,a\,c\,e\,x^n\right)}{3\,a\left(-b^2+4\,a\,c\right)n\left(a+b\,x^n+c\,x^{2\,n}\right)^2}+\left(2\left(-2\,b^4\,d\,x+10\,a\,b^2\,c\,d\,x-8\,a^2\,c^2\,d\,x+\right.\right.\right.$$

$$2\,a\,b^3\,e\,x - 8\,a^2\,b\,c\,e\,x + 3\,b^4\,d\,n\,x - 22\,a\,b^2\,c\,d\,n\,x + 24\,a^2\,c^2\,d\,n\,x + 8\,a^2\,b\,c\,e\,n\,x - 2\,b^3\,c\,d\,x^{1+n} + 8\,a\,b\,c^2\,d\,x^{1+n} + 2\,a\,b^2\,c\,e\,x^{1+n} - 8\,a^2\,c^2\,e\,x^{1+n} + 3\,b^3\,c\,d\,n\,x^{1+n} - 20\,a\,b\,c^2\,d\,n\,x^{1+n} + 16\,a^2\,c^2\,e\,n\,x^{1+n}\Big)\Big) \Big/ \Big(3\,a^2\,\left(-b^2+4\,a\,c\right)^2\,n^2\,\left(a+b\,x^n+c\,x^{2\,n}\right)\Big)\Big) -$$

$$\Big(16\,b^3\,c\,d\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)$$

$$\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big) \Big/$$

$$\Big(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Big(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$n\,x^n\,\Big(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)\Big) +$$

$$\Big(64\,a\,b\,c^2\,d\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)$$

$$\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big) \Big/$$

$$\Big(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Big(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$n\,x^n\,\Big(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)\Big) +$$

$$\Big(16\,a\,b^2\,c\,e\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)$$

$$\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big) \Big/$$

$$\Big(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}$$

$$\Big(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\Big[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$n\,x^n\,\Big(\left(b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big] +$$

$$\left(b-\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\Big[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)\Big) -$$

$$\left(64\,a^2\,c^2\,e\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,n^2\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\,\left(\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$
$$\left(8\,b^3\,c\,d\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,n\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\,\left(\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)-$$
$$\left(160\,a\,b\,c^2\,d\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,n\,\left(1+n\right)\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(-4\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$n\,x^n\,\left(\left(b+\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4\,a\,c}\,\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)\right)+$$
$$\left(128\,a^2\,c^2\,e\,\left(1+2\,n\right)\,x^{1+n}\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(3\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)n\left(1+n\right)\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(-4\left(a+2an\right)\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]+\right.$$
$$nx^n\left(\left(b+\sqrt{b^2-4ac}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{1}{2},\frac{3}{2},3+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]+\right.$$
$$\left.\left.\left.\left(b-\sqrt{b^2-4ac}\right)\text{AppellF1}\left[2+\frac{1}{n},\frac{3}{2},\frac{1}{2},3+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)\right)-$$
$$\left(4b^4d\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4ac}\right)nx^n\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-$$
$$\left.\left.4a\left(1+n\right)\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)+$$
$$\left(32ab^2cd\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4ac}\right)nx^n\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-$$
$$\left.\left.4a\left(1+n\right)\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)-$$
$$\left(64a^2c^2d\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)-$$

$$\left(16\,b^4\,d\,\left(1+n\right)\,x\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg)+$$

$$\left(80\,a\,b^2\,c\,d\,\left(1+n\right)\,x\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg)-$$

$$\left(64\,a^2\,c^2\,d\,\left(1+n\right)\,x\,\left(b-\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\,\left(b+\sqrt{b^2-4\,a\,c}\,+2\,c\,x^n\right)\right.$$

$$\left.\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(3\,\left(-b^2+4\,a\,c\right)^2\,\left(b-\sqrt{b^2-4\,a\,c}\right)\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,n^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{3/2}\right.$$

$$\left(\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{1}{2},\,\frac{3}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$\left.4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Bigg)+$$

$$\left(16\,a\,b^3\,e\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(3\left(-b^2+4\,a\,c\right)^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(64\,a^2\,b\,c\,e\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(3\left(-b^2+4\,a\,c\right)^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n^2\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)+$$
$$\left(32\,b^4\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$
$$\left(3\left(-b^2+4\,a\,c\right)^2\left(b-\sqrt{b^2-4\,a\,c}\right)\left(b+\sqrt{b^2-4\,a\,c}\right)n\left(a+x^n\left(b+c\,x^n\right)\right)^{3/2}\right.$$
$$\left(\left(\left(b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\right.\right.$$
$$\left(-b+\sqrt{b^2-4\,a\,c}\right)n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.4\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$
$$\left(224\,a\,b^2\,c\,d\,(1+n)\,x\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\Big/$$

$$\left(3\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)n\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-$$
$$\left.\left.4a\left(1+n\right)\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)+$$
$$\left(256a^2c^2d\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(3\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)n\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-$$
$$\left.\left.4a\left(1+n\right)\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)-$$
$$\left(8ab^3e\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(3\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)n\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$
$$\left(-b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{3}{2},\frac{1}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-$$
$$\left.\left.4a\left(1+n\right)\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\right)+$$
$$\left(32a^2bce\left(1+n\right)x\left(b-\sqrt{b^2-4ac}+2cx^n\right)\left(b+\sqrt{b^2-4ac}+2cx^n\right)\right.$$
$$\left.\text{AppellF1}\left[\frac{1}{n},\frac{1}{2},\frac{1}{2},1+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]\right)\Big/$$
$$\left(\left(-b^2+4ac\right)^2\left(b-\sqrt{b^2-4ac}\right)\left(b+\sqrt{b^2-4ac}\right)n\left(a+x^n\left(b+cx^n\right)\right)^{3/2}\right.$$
$$\left(\left(b+\sqrt{b^2-4ac}\right)nx^n\,\text{AppellF1}\left[1+\frac{1}{n},\frac{1}{2},\frac{3}{2},2+\frac{1}{n},-\frac{2cx^n}{b+\sqrt{b^2-4ac}},\frac{2cx^n}{-b+\sqrt{b^2-4ac}}\right]-\right.$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,\frac{3}{2},\,\frac{1}{2},\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$4\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,\frac{1}{2},\,\frac{1}{2},\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)$$

Problem 91: Result more than twice size of optimal antiderivative.

$$\int\left(d+e\,x^n\right)^3\,\left(a+b\,x^n+c\,x^{2\,n}\right)^p\,\mathbb{d}x$$

Optimal (type 6, 606 leaves, 10 steps):

$$\frac{1}{1+n}3\,d^2\,e\,x^{1+n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+\frac{1}{1+2\,n}$$
$$3\,d\,e^2\,x^{1+2\,n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$\frac{1}{1+3\,n}e^3\,x^{1+3\,n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[3+\frac{1}{n},\,-p,\,-p,\,4+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$d^3\,x\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]$$

Result (type 6, 2025 leaves):

$$\Bigg(3\times 2^{-1-p}\,c\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,d^2\,e\,\left(1+2\,n\right)\,x^{1+n}\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}$$
$$\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^{1+p}\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)\,x^n\right)^2\left(a+x^n\,\left(b+c\,x^n\right)\right)^{-1+p}$$
$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$
$$\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\left(1+n\right)\,\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$
$$\Bigg(-2\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$n\,p\,x^n\,\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,1-p,\,-p,\,3+\frac{1}{n},\right.$$

$$-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$
$$\text{AppellF1}\Big[2+\frac{1}{n},\ -p,\ 1-p,\ 3+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Big)\Big)\Big)+$$
$$\Bigg(3\times 2^{-1-p}\,c\left(b+\sqrt{b^2-4\,a\,c}\right)d\,e^2\left(1+3\,n\right)x^{1+2\,n}\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}$$
$$\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^{1+p}\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)x^n\right)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{-1+p}$$
$$\text{AppellF1}\Big[2+\frac{1}{n},\ -p,\ -p,\ 3+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Bigg)\Big/$$
$$\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\left(1+2\,n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$
$$\Bigg(-2\left(a+3\,a\,n\right)\text{AppellF1}\Big[2+\frac{1}{n},\ -p,\ -p,\ 3+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]+$$
$$n\,p\,x^n\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\Big[3+\frac{1}{n},\ 1-p,\ -p,\ 4+\frac{1}{n},$$
$$-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$
$$\text{AppellF1}\Big[3+\frac{1}{n},\ -p,\ 1-p,\ 4+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Bigg)\Bigg)\Bigg)+$$
$$\Bigg(2^{-1-p}\,c\left(b+\sqrt{b^2-4\,a\,c}\right)e^3\left(1+4\,n\right)x^{1+3\,n}\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^{1+p}$$
$$\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)x^n\right)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{-1+p}$$
$$\text{AppellF1}\Big[3+\frac{1}{n},\ -p,\ -p,\ 4+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Bigg)\Big/$$
$$\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\left(1+3\,n\right)\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$
$$\Bigg(-2\left(a+4\,a\,n\right)\text{AppellF1}\Big[3+\frac{1}{n},\ -p,\ -p,\ 4+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]+$$
$$n\,p\,x^n\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\text{AppellF1}\Big[4+\frac{1}{n},\ 1-p,\ -p,\ 5+\frac{1}{n},$$
$$-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$
$$\text{AppellF1}\Big[4+\frac{1}{n},\ -p,\ 1-p,\ 5+\frac{1}{n},\ -\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\ \frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\Big]\Bigg)\Bigg)\Bigg)-$$
$$\Bigg(2^{-1-2\,p}\left(b+\sqrt{b^2-4\,a\,c}\right)d^3\left(1+n\right)x\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}\left(\frac{b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}$$

$$\left(-b+\sqrt{b^2-4\,a\,c}\;-2\,c\,x^n\right)\left(\frac{b-\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n}{c}\right)^p$$
$$\left(\frac{b+\sqrt{b^2-4\,a\,c}\;+2\,c\,x^n}{c}\right)^{-1+p}\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\;\right)x^n\right)^2\left(a+x^n\left(b+c\,x^n\right)\right)^{-1+p}$$
$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Big/$$
$$\left(c\left(-b+\sqrt{b^2-4\,a\,c}\;\right)\left(\left(-b+\sqrt{b^2-4\,a\,c}\;\right)n\,p\,x^n\right.\right.$$
$$\text{AppellF1}\left[1+\frac{1}{n},\,1-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\;\right)$$
$$n\,p\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,1-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$\left.\left.2\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)$$

Problem 92: Result more than twice size of optimal antiderivative.

$$\int\left(d+e\,x^n\right)^2\left(a+b\,x^n+c\,x^{2\,n}\right)^p\,dx$$

Optimal (type 6, 447 leaves, 8 steps):

$$\frac{1}{1+n}2\,d\,e\,x^{1+n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$\frac{1}{1+2\,n}e^2\,x^{1+2\,n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$d^2\,x\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]$$

Result (type 6, 1522 leaves):

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

$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,(1+n)\,\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\Bigg(-2\,(a+2\,a\,n)\,\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,p\,x^n\,\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,1-p,\,-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$

$$\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,1-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)+$$

$$\Bigg(2^{-1-p}\,c\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,e^2\,(1+3\,n)\,x^{1+2\,n}\,\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}\,\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^{1+p}$$

$$\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)\,x^n\right)^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{-1+p}$$

$$\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,(1+2\,n)\,\left(b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)$$

$$\Bigg(-2\,(a+3\,a\,n)\,\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+$$

$$n\,p\,x^n\,\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[3+\frac{1}{n},\,1-p,\,-p,\,4+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$

$$\text{AppellF1}\left[3+\frac{1}{n},\,-p,\,1-p,\,4+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(2^{-1-2\,p}\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,d^2\,(1+n)\,x\,\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}\,\left(\frac{b+\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}$$

$$\left(-b+\sqrt{b^2-4\,a\,c}-2\,c\,x^n\right)\,\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^p$$

$$\left(\frac{b+\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^{-1+p}\,\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)\,x^n\right)^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{-1+p}$$

$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg/$$

$$\Bigg(c\,\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\Bigg(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,p\,x^n$$

$$\text{AppellF1}\left[1+\frac{1}{n},\,1-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$
$$n\,p\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,1-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$
$$2\,a\,(1+n)\,\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Bigg)$$

Problem 93: Result more than twice size of optimal antiderivative.

$$\int\left(d+e\,x^n\right)\,\left(a+b\,x^n+c\,x^{2\,n}\right)^p\,\mathbb{d}x$$

Optimal (type 6, 288 leaves, 6 steps):

$$\frac{1}{1+n}e\,x^{1+n}\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]+$$
$$d\,x\left(1+\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(1+\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right)^{-p}\left(a+b\,x^n+c\,x^{2\,n}\right)^p$$
$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b-\sqrt{b^2-4\,a\,c}},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}}\right]$$

Result (type 6, 902 leaves):

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

$$2^{-1-2\,p}\,\left(b+\sqrt{b^2-4\,a\,c}\right)\,x\,\left(\frac{b-\sqrt{b^2-4\,a\,c}}{2\,c}+x^n\right)^{-p}\,\left(\frac{b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n}{c}\right)^p$$

$$\left(-2\,a+\left(-b+\sqrt{b^2-4\,a\,c}\right)\,x^n\right)^2\,\left(a+x^n\,\left(b+c\,x^n\right)\right)^{-1+p}\,\left(\left(2^p\,e\,\left(1+2\,n\right)\,x^n\,\left(b-\sqrt{b^2-4\,a\,c}+2\,c\,x^n\right)\right.\right.$$

$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Big/$$

$$\left(-2\,\left(a+2\,a\,n\right)\,\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]+\right.$$

$$n\,p\,x^n\,\left(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,\text{AppellF1}\left[2+\frac{1}{n},\,1-p,\,-p,\,3+\frac{1}{n},\right.\right.$$

$$\left.-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\right)$$

$$\left.\left.\text{AppellF1}\left[2+\frac{1}{n},\,-p,\,1-p,\,3+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)-$$

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

$$\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\Bigg)\Big/$$

$$\left(\left(-b+\sqrt{b^2-4\,a\,c}\right)\,n\,p\,x^n\,\text{AppellF1}\left[1+\frac{1}{n},\,1-p,\,-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\right.\right.$$

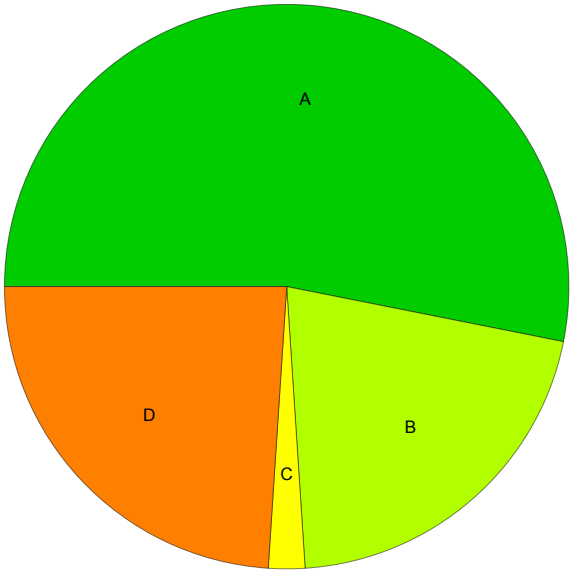
$$\left.\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-\left(b+\sqrt{b^2-4\,a\,c}\right)\,n\,p\,x^n$$

$$\text{AppellF1}\left[1+\frac{1}{n},\,-p,\,1-p,\,2+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]-$$

$$\left.\left.2\,a\,\left(1+n\right)\,\text{AppellF1}\left[\frac{1}{n},\,-p,\,-p,\,1+\frac{1}{n},\,-\frac{2\,c\,x^n}{b+\sqrt{b^2-4\,a\,c}},\,\frac{2\,c\,x^n}{-b+\sqrt{b^2-4\,a\,c}}\right]\right)\right)$$

Summary of Integration Test Results

96 integration problems



A - 51 optimal antiderivatives

B - 20 more than twice size of optimal antiderivatives

C - 2 unnecessarily complex antiderivatives

D - 23 unable to integrate problems

E - 0 integration timeouts