Abstract

There are:

- 255 integrals in this file.
- 255 supplied "optimal results".
- 128 matching answers.
- 152 cases where Axiom answer differs from Rubi
- 52 cases where Axiom supplied 2 results.
- 0 cases that Axiom failed to integrate.
- 26 that contain expressions Axiom does not recognize.
Contents
set break resume
sys rm -f richer12f.output
spool richer12f.output
set message test on
set message auto off
clear all

--S 1 of 1035
t0:=(a+b*x)/((a^2+2*a*b*x+b^2*x^2)^(5/2)*sqrt(d+e*x))
--R
--R
--R
--R (1) ---------------------------------------------------------------------------------
--R
--R
--R
--R (b x + 3a b x + 3a b x + a )\|e x + d \|b x + 2a b x + a
--R
--R
--E 1

--S 2 of 1035
r0:=-1/3*sqrt(d+e*x)/((b*d-a*e)*(a^2+2*a*b*x+b^2*x^2)^(3/2))+_ 5/12*e*(a+b*x)*sqrt(d+e*x)/((b*d-a*e)^2*(a^2+2*a*b*x+b^2*x^2)^(3/2))+_ 5/8*e^3*(a+b*x)*atanh(sqrt(b)*sqrt(d+e*x))/_ ((b*d-a*e)^(7/2)*sqrt(b)*sqrt(a^2+2*a*b*x+b^2*x^2))-_ 5/8*e^2*sqrt(d+e*x)/((b*d-a*e)^(3/2)*sqrt(a^2+2*a*b*x+b^2*x^2))
--R
--R
--R
--R (2)
--R
--R
--R
--R
--R
--R
--R
--R
--E 1
d0:=normalize(t0-D(r0,x))

(t0:=(a+b*x)/((d+e*x)^(3/2)*(a^2+2*a*b*x+b^2*x^2)^(5/2)))

r0:=2/((b*d-a*e)*(a^2+2*a*b*x+b^2*x^2)^(3/2)*sqrt(d+e*x))-7/3*b*sqrt(d+e*x)/((b*d-a*e)^2*(a^2+2*a*b*x+b^2*x^2)^(3/2))+_35/12*b*e*(a*b*x)*sqrt(d+e*x)/((b*d-a*e)^3*(a^2+2*a*b*x+b^2*x^2)^(3/2))+_35/8*e^3*(a+b*x)*atanh(sqrt(b)*sqrt(d+e*x)/sqrt(b*d-a*e))*_sqrt(b)/((b*d-a*e)^(9/2)*sqrt(a^2+2*a*b*x+b^2*x^2))-_35/8*b*e^2*sqrt(d+e*x)/((b*d-a*e)^4*sqrt(a^2+2*a*b*x+b^2*x^2))
\[ (-231a b e - 98a b d e + 14b d e)x - 48a e - 87a b d e + 38a b d e - 8b d \]

\[ (24a b e - 96a b d e + 144a b d e - 96a b d e + 24b d )x \]

\[ (48a b e - 192a b d e + 288a b d e - 192a b d e + 48a b d )x \]

\[ 24a e - 96a b d e + 144a b d e - 96a b d e + 24a b d \]

\[ \frac{-280a b e - 35b d e}{(-105b e x + (-280a b e - 35b d e)x + 2 3 2 2 2 3 3 3 3 2 2)\times (-231a b e - 98a b d e + 14b d e)x - 48a e - 87a b d e + 38a b d e - 8b d} \]

\[ (24a b e - 96a b d e + 144a b d e - 96a b d e + 24b d )x + 5 4 4 2 3 3 3 2 2 2 4 3 5 4 \]

\[ (48a b e - 192a b d e + 288a b d e - 192a b d e + 48a b d )x + 6 4 5 3 4 2 2 2 3 3 3 2 4 4 \]

\[ 24a e - 96a b d e + 144a b d e - 96a b d e + 24a b d \]

\[ \frac{5}{2 2 2 2 2 3 3 3 2 2 2 3 3 3 2 3} \]

\[ b e x + (3a b e + 2b d e)x + (3a b e + 6a b d e + b d )x \]

\[ (3) 0 \]

\[ \frac{(a+b*x)/((d+e*x)^(5/2)*(a^2+2*a*b*x+b^2*x^2)^(5/2))}{(a+b*x)/((d+e*x)^(5/2)*(a^2+2*a*b*x+b^2*x^2)^(5/2))} \]
\( r_0 := \frac{2}{3} \left( \frac{(b+d-a)e}{(d+e)x^{3/2}(a^2+2abx+b^2x^2)^{3/2}} + \frac{6b}{(b+d-a)^2(a^2+2abx+b^2x^2)^{3/2}\sqrt{d+e}} - \frac{7b^2\sqrt{d+e}}{(b+d-a)^3(a^2+2abx+b^2x^2)^{3/2}} + \frac{35/4b^2e(a+b)e\sqrt{d+e}}{(b+d-a)^4(a^2+2abx+b^2x^2)^{11/2}} + \frac{105/8b^2(3/2)e^3(a+b)e\arctanh(\sqrt{b}\sqrt{d+e}/\sqrt{b+d-a})}{(b+d-a)^5\sqrt{d+e}} \right) \)
\[
\begin{align*}
&52643534242533642 \\
&24a_{b\,e} - 120a_{b\,d\,e} + 240a_{b\,d\,e} - 240a_{b\,d\,e} + 120a_{b\,d\,e} \\
&+ \\
&75 \\
&- 24b_{d\,e} \\
&\ast \\
&3 \\
&x \\
&+ \\
&66525432465 \\
&48a_{b\,e} - 216a_{b\,d\,e} + 360a_{b\,d\,e} - 240a_{b\,d\,e} + 72a_{b\,d\,e} \\
&+ \\
&76 \\
&- 24b\;d \\
&\ast \\
&2 \\
&x \\
&+ \\
&7665 \\
&24a_{e\,-\,72a\;d\;e} + 240a_{b\;d\;e\,-\,360a\;b\;d\;e\,+\,216a\;b\;d\;e} \\
&+ \\
&66 \\
&- 48a\;b\;d \\
&\ast \\
&x \\
&+ \\
&756 \\
&24a_{d\;e\,-\,120a\;b\;d\;e\,+\,240a\;b\;d\;e\,-\,240a\;b\;d\;e\,+\,120a\;b\;d\;e} \\
&+ \\
&256 \\
&- 24a\;b\;d \\
&\ast \\
&\ast----------\ast----------\ast\,22 \\
&\ast----------\ast----------\ast\,22 \\
&\ast\,\,a\;e\,\,b\;d\,\,e\,\,x\,\,d\,\,b\;x\,\,2\,a\;b\;x\,\,a \\
&\text{Type: Expression(Integer)} \\
&\end{align*}
\]
\[r_0:=\frac{2}{5}/((b+d-a\cdot e)^2\cdot (d+e^2)^{5/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})+\]
\[22/15\cdot b/((b+d-a\cdot e)^2\cdot (d+e^2)^{3/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})+\]
\[66/5\cdot b^2/((b+d-a\cdot e)^3\cdot (d+e^2)^{3/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})+\]
\[77/5\cdot b^3\cdot \sqrt{d+e^2}/((b+d-a\cdot e)^4\cdot (d+e^2)^{3/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})+\]
\[77/4\cdot b^2\cdot e\cdot (a+b\cdot x)\cdot \sqrt{d+e^2}/((b+d-a\cdot e)^5\cdot (d+e^2)^{3/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})+\]
\[231/8\cdot b^3\cdot e^2\cdot \sqrt{d+e^2}/((b+d-a\cdot e)^6\cdot (d+e^2)^{3/2}\cdot (a^2+2a\cdot b\cdot x+b^2\cdot x^2)^{3/2})\]
d0:=normalize(t0-D(r0,x))

r0:=1/2*(a^2+2*a*b*x+b^2*x^2)^(1+p)/((b*d-a*e)*(1+p)*(d+e*x)^(2*(1+p)))
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (a + b \cdot x) \cdot (d + e \cdot x)^3 \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^p \]

\[ r_0 := \frac{3}{2} \cdot (b \cdot d - a \cdot e)^3 \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^{1 + p} \cdot \frac{1}{b^4 \cdot (1 + p) \cdot (2 + p) \cdot (3 + 2 \cdot p) \cdot (5 + 2 \cdot p)} + \frac{3 \cdot (b \cdot d - a \cdot e)^2 \cdot (d + e \cdot x) \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^{1 + p} \cdot 1}{b^3 \cdot (2 + p) \cdot (3 + 2 \cdot p) \cdot (5 + 2 \cdot p)} + \frac{\frac{3}{2} \cdot (b \cdot d - a \cdot e) \cdot (d + e \cdot x)^2 \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^{1 + p} \cdot 1}{b^2 \cdot (2 + p) \cdot (5 + 2 \cdot p)} + \frac{(d + e \cdot x)^3 \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^{1 + p} \cdot 1}{b \cdot (5 + 2 \cdot p)} \]
\[ \frac{3}{2} a e + 15 a b d e - 30 a b d e + 30 b d \]

\[ + \]

\[ 4 b p + 56 b p + 142 b p + 154 b p + 60 b \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{17} \]

\[ \text{18 of 1035} \]

\[ \text{d0:=normalize(t0-D(r0,x))} \]

\[ \text{R} \]

\[ \text{18} \]

\[ \text{0} \]

\[ \text{R} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{19} \]

\[ )\text{clear all} \]

\[ \text{S 19 of 1035} \]

\[ t0:=(a+b*x)*(d+e*x)^2*(a^2+2*a*b*x+b^2*x^2)^p \]

\[ \text{R} \]

\[ \text{19} \]

\[ \text{1} \]

\[ \text{R} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{20 of 1035} \]

\[ r0:=1/2*(b*d-a*e)^2*(a^2+2*a*b*x+b^2*x^2)^(1+p)/(b^3*(1+p)*(2+p)*(3+2*p)) +_\]

\[ (b*d-a*e)*(d+e*x)*(a^2+2*a*b*x+b^2*x^2)^(1+p)/(b^2*(2+p)*(3+2*p)) +_\]

\[ 1/2*(d+e*x)^2*(a^2+2*a*b*x+b^2*x^2)^(1+p)/(b*(2+p)) \]

\[ \text{R} \]

\[ \text{2} \]

\[ \text{R} \]

\[ \text{2} \]

\[ \text{R} \]

\[ \text{2} \]
\[-R \ 2 \ 2 \ 2 \ 2 \ \ (\ -2a \ b \ d \ e + 7b \ d \ )p + a \ e - 4a \ b \ d \ e + 6b \ d \ \]
\[-R \ * \ 2 \ 2 \ 2 \ p + 1 \ \]
\[-R \ (b \ x + 2a \ b \ x + a ) \ \]
\[-R \ / \ 3 \ 3 \ 3 \ 2 \ 3 \ 3 \]
\[-R \ 4b \ p + 18b \ p + 26b \ p + 12b \ \]
\[-R Type: Expression(Integer) \]
\[-E 20 \]

\[-S 21 \ of \ 1035 \]
d0:=normalize(t0-D(r0,x))
\[-R \]
\[-R \]
\[-R \ (3) \ 0 \]
\[-R Type: Expression(Integer) \]
\[-E 21 \]

\()\)clear all

\[-S 22 \ of \ 1035 \]
t0:=(a+b*x)*(d+e*x)*(a^2+2*a*b*x+b^2*x^2)^p
\[-R \]
\[-R \]
\[-R \ (1) \ (b \ e \ x + (a \ e + b \ d)x + a \ d)(b \ x + 2a \ b \ x + a ) \]
\[-R Type: Expression(Integer) \]
\[-E 22 \]

\[-S 23 \ of \ 1035 \]
r0:=1/2*(b*d-a*e)*(a^2+2*a*b*x+b^2*x^2)^(1+p)/(b^2*(1+p)*(3+2*p))+(d+e*x)\_ 
\([-a^2+2*a*b*x+b^2*x^2]^{(1+p)}/(b*(3+2*p)) \)
\[-R \]
\[-R \]
\[-R \ 2 \ 2 \ 2 \ p + 1 \]
\[-R \ ((2b \ e \ p + 2b \ e)x + 2b \ d \ p - a \ e + 3b \ d)(b \ x + 2a \ b \ x + a ) \]
\[-R \ (2) \ \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[-R \]
\[ t_0 := (a + b \cdot x) \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^p \]

\[ r_0 := \frac{1}{2} \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^{1 + p} / (b \cdot (1 + p)) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (a + b \cdot x) \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^p / (d + e \cdot x) \]

\[ r_0 := (a + b \cdot x) \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^p / (e \cdot (1 + 2 \cdot p)) - \frac{a + b \cdot x}{b \cdot e \cdot x + a \cdot d} \cdot \text{hypergeometric}(1, 1 + 2 \cdot p, 2 \cdot (1 + p), -e \cdot (a + b \cdot x) / (b \cdot d - a \cdot e)) / (e \cdot (1 + 2 \cdot p)) \]
d0 := D(m0, x)

clear all

t0 := (A + B*x)*(a*c + b*c*x)^m*(a^2 + 2*a*b*x + b^2*x^2)^3

t0 =

6 7 6 5 6 5 2 4 5
B b x + (A b + 6B a b )x + (6A a b + 15B a b )x
+
2 4 3 3 4 3 3 4 2 3 4 2 5 2
(15A a b + 20B a b )x + (20A a b + 15B a b )x + (15A a b + 6B a b)x
+
5 6 6
(6A a b + B a )x + A a
*
m
(b c x + a c)

r0 := (A*b - a*B)*(a*c + b*c*x)^(7 + m)/(b^2*c^7*(7 + m)) + B*(a*c + b*c*x)^(8 + m)/(
(b^2*c^8*(8 + m))

r0 =

m + 8
(B m + 7B)(b c x + a c)
+

m + 7
((A b - B a)c m + (8A b - 8B a)c)(b c x + a c)
/
2 8 2 2 8
b c m + 15b c m + 56b c

b c x + a c)

Type: Expression(Integer)

d0 := normalize(t0-D(r0, x))

d0 =

0

Type: Expression(Integer)
\( t_0 := \frac{(A + B x) (a c + b c x)^m}{(a^2 + 2 a b x + b^2 x^2)^3} \)

\( r_0 := \frac{-(A b - a B) c^5 (a c + b c x)^{-5 + m}}{b^2 (5 - m)} \) - \( B c^4 (a c + b c x)^{-4 + m} / b^2 (4 - m) \)

\( d_0 := \text{normalize}(t_0 - D(r_0, x)) \)

\( t_0 := \frac{(A + B x) (a c + b c x)^m}{(a^2 + 2 a b x + b^2 x^2)^{3/2}} \)

\( r_0 := \frac{-(A b - a B) c^5 (a c + b c x)^{-5 + m}}{b^2 (5 - m)} \) - \( B c^4 (a c + b c x)^{-4 + m} / b^2 (4 - m) \)

\( d_0 := \text{normalize}(t_0 - D(r_0, x)) \)
(2)
\[(B b m + 4B b^2)x + (2B a b m + 8B a b)x + B a m + 4B a)
\]
\[\times m + 2\]
\[(b c x + a c)\]
\[+\]
\[(A b - B a b)c m + (5A b - 5B a b)c)x\]
\[+\]
\[(2A a b - 2B a b)c m + (10A a b - 10B a b)c)x\]
\[+\]
\[(A a b - B a b)c m + (5A a b - 5B a b)c\]
\[\times m + 1\]
\[(b c x + a c)\]
\[\times \]
\[------------------\]
\[(b x + 2a b x + a)\]

\[\frac{\text{Type: Expression(Integer)}}{\text{E 37}}\]

\[\text{d0:=normalize(t0-D(r0,x))}\]
\[\text{Type: Expression(Integer)}\]
\[\text{E 38}\]

\[\text{clear all}\]

\[\text{t0:=(A+B*x)*(a*c+b*c*x)^m/(a^2+2*a*b*x+b^2*x^2)^{(3/2)}}\]
\[\text{Type: Expression(Integer)}\]
\[\text{E 39}\]
r0 := -(A*b-a*B)*(a*c+b*c*x)^m/(b^2*c*(2-m)*(a^2+2*a*b*x+b^2*x^2)^(3/2)) - 
B*(a*c+b*c*x)^m/(b^2*c^2*(1-m)*(a^2+2*a*b*x+b^2*x^2)^(3/2))

r0 := -(A*b-a*B)*(a*c+b*c*x)^m/(b^2*c*(2-m)*(a^2+2*a*b*x+b^2*x^2)^(3/2)) - 
B*(a*c+b*c*x)^m/(b^2*c^2*(1-m)*(a^2+2*a*b*x+b^2*x^2)^(3/2))

d0 := normalize(t0-D(r0,x))

)clear all
---R  (1) (B x + A)(b c x + a c) (b x + 2a b x + a )  
---R Type: Expression(Integer)  
---E 43  
---S 44 of 1035  
r0:=(A*b-a*B)*(a*c+b*c*x)^(1+m)*(a^2+2*a*b*x+b^2*x^2)^p/(b^2*c*(1+m+2*p)) +  
B*(a*c+b*c*x)^(2+m)*(a^2+2*a*b*x+b^2*x^2)^p/(b^2*c^2*(2+m+2*p))  
---R  
---R  
---R (2)  
---R (m + 2)  
---R (2B p + B m + B)(b c x + a c)  
---R +  
---R (m + 1)  
---R ((2A b - 2B a)c p + (A b - B a)c m + (2A b - 2B a)c)(b c x + a c)  
---R *  
---R 2 2 2 2 p  
---R (b x + 2a b x + a )  
---R /  
---R 2 2 2 2 2 2 2 2 2 2 2 p  
---R 4b c p + (4b c m + 6b c )p + b c m + 3b c m + 2b c  
---R Type: Expression(Integer)  
---E 44  
---S 45 of 1035  
d0:=normalize(t0-D(r0,x))  
---R  
---R (3) 0  
---R Type: Expression(Integer)  
---E 45  
)clear all  
---S 46 of 1035  
t0:=(a+b*x)*(a*c+b*c*x)^m*(a^2+2*a*b*x+b^2*x^2)^p  
---R  
---R (m 2 2 2 p)  
---R (1) (b x + a)(b c x + a c) (b x + 2a b x + a )  
---R Type: Expression(Integer)  
---E 46  
---S 47 of 1035  
r0:=(a*c+b*c*x)^(2+m)*(a^2+2*a*b*x+b^2*x^2)^p/(b*c^2*(2+m+2*p))  
---R  
---R  
---R (m + 2 2 2 2 p)  
---R (b c x + a c) (b x + 2a b x + a )  
---R (2) -------------------------------
\[
\begin{align*}
\text{d0} & := \text{normalize}(t0 - D(r0, x)) \\
\text{t0} & := (a + b \cdot x) \cdot (a \cdot c + b \cdot c \cdot x)^m \cdot (a^2 + 2 \cdot a \cdot b \cdot x + b^2 \cdot x^2)^3 \\
\text{r0} & := (a \cdot c + b \cdot c \cdot x)^{8 + m} / (b \cdot c^8 \cdot (8 + m)) \\
\text{d0} & := \text{normalize}(t0 - D(r0, x))
\end{align*}
\]
\[
t_0 := \frac{(a+b x) \times (a+c+b+cx)^m}{(a^2+2a b x+b^2 x^2)^3}
\]

\[
t_0 := \frac{(b c x + a c)(1)}{5 5 4 4 2 3 2 2 4 5}
\]

\[
b x + 5a b x + 10a b x + 10a b x + 5a b x + a
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\]

\[
r_0 := -c^4 \times (a+c+b+cx)^{-4+m}/(b*(4-m))
\]

\[
\]

\[
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\]

\[
d_0 := \text{normalize}(t_0-D(r_0,x))
\]

\[
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\]

\[
\text{clear all}
\]

\[
t_0 := x \times (d+e x)^m \times (a+b x+c x^2)
\]

\[
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\]

\[
r_0 := -d*(c*d^2-b*d*e+a*e^2)*(d+e x)^{(1+m)}/(e^4*(1+m))+(3*c*d^2-\]
\[
e*(2*b*d-a*e)*(d+e x)^{(2+m)}/(e^4*(2+m))-(3*c*d-b*e)*(d+e x)^{(3+m)}/\]
\[
(e^4*(3+m))+c*(d+e x)^{(4+m)}/(e^4*(4+m))
\]

\[
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\]

\[
(2)
\]

\[
3 2 m + 4
\]
\[ \frac{\frac{1}{4} (c^m + 6c^m + 11c^m + 6c)(e^x + d)}{8b + 24c - 24c^2} + \frac{1}{2} \frac{1}{3} (b e - 3c d)^m + (7b e - 21c d)^m + (14b e - 42c d)^m + 8b e - 24c d \]

\[ + \frac{1}{2} \frac{1}{3} (a e - 2b d e + 3c d)^m + (8a e - 16b d e + 24c d)^m \]

\[ + \frac{1}{2} \frac{1}{3} (19a e - 38b d e + 57c d)^m + 12a e - 24b d e + 36c d \]

\[ \times \frac{1}{m + 2} (e^x + d) \]

\[ + \frac{1}{2} \frac{1}{3} (-a d e + b d e - c d)^m + (-9a d e + 9b d e - 9c d)^m \]

\[ + \frac{1}{2} \frac{1}{3} (-26a d e + 26b d e - 26c d)^m - 24a d e + 24b d e - 24c d \]

\[ \times \frac{1}{m + 1} (e^x + d) \]

\[ \frac{1}{4} (e^m + 10e^m + 35e^m + 50e^m + 24e) \]

Type: Expression(Integer)
(5a d e + 10b d e + 10c d e)x + (10a d e + 10b d e + 5c d e)x
+ (10a d e + 5b d e + c d )x + (5a d e + b d )x + a d x

Type: Polynomial(Integer)

(2)

- c e x + (- b e + - c d e)x + (- a e + - b d e + -- c d e)x

9 8 8 7 7 7

+ 5 8 5 27 5 36 6 27 36 45 5

(- a d e + - b d e + - c d e)x + (2a d e + 2b d e + c d e)x

6 3 3

+ 5 36 5 45 1 5 44 5 45 1 5 43 1 5 42

(- a d e + - b d e + - c d e)x + (- a d e + - b d e)x + - a d e x

2 4 4 3 3 2

+ 1 72 1 8 1 9

- -- a d e + --- b d e - -- c d

42 168 504

/ 4
e

Type: Fraction(Polynomial(Fraction(Integer)))

(3) 0

Type: Expression(Integer)

)clear all

d0:=normalize(t0-D(r0,x))

Type: Expression(Integer)

t0:=x*(d+e*x)^4*(a+b*x+c*x^2)
raw_text
\[- \begin{align*} & \left( 3a d e + 3b d e + c d \right) x + (3a d e + b d) x + a d x \\ & \text{Type: Polynomial(Integer)} \end{align*} \]
--R (2)
--R 1 2 6 1 2 2 5 1 2 1 1 2 4
--R - c e x + (- b e + - c d e)x + (- a e + - b d e + - c d)x
--R 6 5 5 4 2 4
--R +
--R 2 1 2 3 1 2 2
--R (- a d e + - b d)x + - a d x
--R 3 3 2
--R

Type: Polynomial(Fraction(Integer))
--E 68

--S 69 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R

Type: Expression(Integer)
--E 69

)clear all

--S 70 of 1035
t0:=x*(d+e*x)*(a+b*x+c*x^2)
--R
--R
--R 4 3 2
--R (1) c e x + (b e + c d)x + (a e + b d)x + a d x
--R

Type: Polynomial(Integer)
--E 70

--S 71 of 1035
r0:=1/2*a*d*x^2+1/3*(b*d+a*e)*x^3+1/4*(c*d+b*e)*x^4+1/5*c*e*x^5
--R
--R
--R 1 5 1 1 4 1 1 3 1 2
--R (2) - c e x + (- b e + - c d)x + (- a e + - b d)x + - a d x
--R 5 4 4 3 3 2

Type: Polynomial(Fraction(Integer))
--E 71

--S 72 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R

Type: Expression(Integer)
--E 72

)clear all

26
\[ t_0 := x(a + bx + cx^2) \]
\[ r_0 := \frac{1}{2}ax^2 + \frac{1}{3}bx^3 + \frac{1}{4}cx^4 \]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ r_0 := \frac{(c^2d^2 - bd^3e + a^3e^2)x/e^3 - \frac{1}{2}(bd^2 - a^2e)x^2/e^2 + \frac{1}{3}(3cde - 3d^2e)x}{d(c^2d^2 - bd^3e + a^3e^2)\log(d + e)x/e^4} \]
\[ \frac{6a_e - 6b_d e + 6c_d e}{6e} \]

Type: Expression(Integer)

\[ \frac{4}{6e} \]

\[ 4 \]

\[ 6e \]

\[ \text{Type: Expression(Integer)} \]

\[ d0:=\text{normalize(t0-D(r0,x))} \]

\[ \text{clear all} \]

\[ t0:=x*(a+b*x+c*x^2)/(d+e*x)^2 \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

\[ r0:=-(2*c*d-b*e)*x/e^3+1/2*c*x^2/e^2+d*(c*d^2-b*d*e+a*e^2)/(e^4*(d+e*x))+ \]

\[ (3*c*d^2-e*(2*b*d-a*e))*\log(d+e*x)/e^4 \]

\[ ((2a_e - 4b_d e + 6c_d e)x + 2a_d e - 4b_d e + 6c_d )\log(e x + d) \]

\[ + \]

\[ c e x + (2b_e - 3c_d e )x + (2b_d e - 4c_d e)x + 2a_d e - 2b_d e \]

\[ + \]

\[ 3 \]

\[ 2c_d \]

\[ 5 \]

\[ 4 \]

\[ 2e x + 2d e \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{E 80} \]

\[ \text{S 81 of 1035} \]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

- \[ (3) \quad 0 \quad \text{Type: Expression(Integer)} \]

```plaintext
)clear all

--S 82 of 1035
\[ t_0 := x \frac{(a + b x + c x^2)}{(d + e x)^3} \]

--R

- \[ (1) \quad \frac{c x + b x + a x}{e^3 (d + e x)^2} \quad \text{Type: Fraction(Polynomial(Integer))} \]

--E 82

--S 83 of 1035
\[ r_0 := c x / e^3 + 1/2 \cdot d \cdot (c + d^2 - b \cdot d + a \cdot e^2)/(e^4 (d + e x)^2) + \]

\[ (-3 \cdot c + d^2 + a)/(e^4 (d + e x)) - (3 \cdot c + b \cdot e) \cdot \log(d + e x)/e^4 \]

--R

- \[ (2) \quad \frac{((2 b \cdot e - 6 c \cdot d \cdot e) x + (4 b \cdot d \cdot e - 12 c \cdot d \cdot e) x + 2 b \cdot d \cdot e - 6 c \cdot d \cdot e) \log(e x + d)}{6 \cdot 2 \cdot 5 \cdot 2 \cdot 4} \quad \text{Type: Expression(Integer)} \]

--E 83

--S 84 of 1035
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

--R

- \[ (3) \quad 0 \quad \text{Type: Expression(Integer)} \]

--E 84

)clear all
\[ t_0 := \frac{x(a + bx + cx^2)}{(d + ex)^4} \]

\[ r_0 := \frac{1}{3} \frac{c d^2 - b d e + a e^2}{e^4 (d + e x)^3} + \frac{1}{2} \left( \frac{-3 c d^2 + e (2 b d - a e)}{e^4 (d + e x)^2} + \frac{3 c d - b e}{e^4 (d + e x)} \right) + \frac{c \log (d + e x)}{e^4} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ r_0 := \frac{1}{4} \cdot \frac{c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2}{e^4 \cdot (d + e \cdot x)^4} + \frac{1}{3} \cdot \frac{-3 \cdot c \cdot d^2 + e \cdot (2 \cdot b \cdot d - a \cdot e)}{e^4 \cdot (d + e \cdot x)^3} + \frac{1}{2} \cdot \frac{3 \cdot c \cdot d - b \cdot e}{e^4 \cdot (d + e \cdot x)^2} - \frac{c}{e^4 \cdot (d + e \cdot x)} \]

\[ 3 \cdot 3 \quad 1 \quad 3 \quad 3 \quad 2 \quad 2 \quad 1 \quad 3 \quad 1 \quad 2 \quad 2 \]
\[ - c \cdot e \cdot x + (- b \cdot e - c \cdot d \cdot e)x + (- a \cdot e - b \cdot d \cdot e - c \cdot d \cdot e)x \]
\[ 2 \quad 2 \quad 3 \quad 3 \]
\[ + \]
\[ 1 \quad 2 \quad 1 \quad 2 \quad 1 \quad 3 \]
\[ - (a \cdot d \cdot e - b \cdot d \cdot e - c \cdot d) \]
\[ 12 \quad 12 \quad 4 \]
\[ / \]
\[ 8 \quad 4 \quad 7 \quad 3 \quad 2 \quad 6 \quad 2 \quad 3 \quad 5 \quad 4 \quad 4 \]
\[ e \cdot x + 4 \cdot d \cdot e \cdot x + 6 \cdot d \cdot e \cdot x + 4 \cdot d \cdot e \cdot x + d \]

\[ \text{Type: Fraction(Polynomial(Fraction(Integer)))} \]

\[ d_0 := \text{normalize(t0-D(r0,x))} \]

\[ 3 \cdot 2 \]
\[ c \cdot x + b \cdot x + a \cdot x \]

\[ 6 \quad 6 \quad 5 \quad 5 \quad 2 \quad 4 \quad 4 \quad 3 \quad 3 \quad 3 \quad 4 \quad 2 \quad 2 \quad 5 \quad 6 \]
\[ e \cdot x + 6 \cdot d \cdot e \cdot x + 15 \cdot d \cdot e \cdot x + 20 \cdot d \cdot e \cdot x + 15 \cdot d \cdot e \cdot x + 6 \cdot d \cdot e \cdot x + d \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

\[ 31 \]
d0 := normalize(t0 - D(r0, x))

r0 := 1/6*d*(c*d^2 - b*d*e + a*e^2)/(e^4*(d+e*x)^6) + 1/5*(-3*c*d^2 + e*(2*b*d - a*e))/e^4*(d+e*x)^5 + 1/4*(3*c*d - b*e)/(e^4*(d+e*x)^4) - 1/3*c/e^4*(d+e*x)^3
\(d_0 := \text{normalize}(t_0 - D(r_0, x))\)

\(t_0 := (A + B \cdot x) \cdot (d + e \cdot x)^m \cdot (a + b \cdot x + c \cdot x^2)\)

\(r_0 := \frac{- (B \cdot d - A \cdot e) \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) \cdot (d + e \cdot x)^{1+m}}{e^4 \cdot (1+m)} - \frac{(A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (3 \cdot c \cdot d^2 - e \cdot (2 \cdot b \cdot d - a \cdot e)) \cdot (d + e \cdot x)^{(2+m)}}{e^4 \cdot (2+m)} - \frac{(3 \cdot B \cdot c \cdot d - B \cdot e - A \cdot c \cdot e) \cdot (d + e \cdot x)^{(3+m)}}{(e^4 \cdot (3+m))} + \frac{B \cdot c \cdot (d + e \cdot x)^{(4+m)}}{(e^4 \cdot (4+m))}\)

\(d_0 := \text{normalize}(t_0 - D(r_0, x))\)

\(t_0 := (A + B \cdot x) \cdot (d + e \cdot x)^m \cdot (a + b \cdot x + c \cdot x^2)\)

\(r_0 := \frac{- (B \cdot d - A \cdot e) \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) \cdot (d + e \cdot x)^{1+m}}{e^4 \cdot (1+m)} - \frac{(A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (3 \cdot c \cdot d^2 - e \cdot (2 \cdot b \cdot d - a \cdot e)) \cdot (d + e \cdot x)^{(2+m)}}{e^4 \cdot (2+m)} - \frac{(3 \cdot B \cdot c \cdot d - B \cdot e - A \cdot c \cdot e) \cdot (d + e \cdot x)^{(3+m)}}{(e^4 \cdot (3+m))} + \frac{B \cdot c \cdot (d + e \cdot x)^{(4+m)}}{(e^4 \cdot (4+m))}\)
\[
\begin{align*}
&\quad + \\
&\quad 2 \\
&\quad ((19A b + 19B a)e + (-38A c - 38B b)d e + 57B c d )m \\
&\quad + \\
&\quad 2 \\
&\quad (12A b + 12B a)e + (-24A c - 24B b)d e + 36B c d \\
&\quad + \\
&\quad m + 2 \\
&\quad (e x + d) \\
&\quad + \\
&\quad 3 \\
&\quad 2 \\
&\quad 2 \\
&\quad 3 \\
&\quad 3 \\
&\quad (A a e + (-A b - B a)d e + (A c + B b)d e - B c d)m \\
&\quad + \\
&\quad 3 \\
&\quad 2 \\
&\quad 2 \\
&\quad 3 \\
&\quad 3 \\
&\quad (9A a e + (-9A b - 9B a)d e + (9A c + 9B b)d e - 9B c d)m \\
&\quad + \\
&\quad 3 \\
&\quad 2 \\
&\quad 2 \\
&\quad 3 \\
&\quad 3 \\
&\quad (26A a e + (-26A b - 26B a)d e + (26A c + 26B b)d e - 26B c d)m \\
&\quad + \\
&\quad 3 \\
&\quad 2 \\
&\quad 2 \\
&\quad 3 \\
&\quad 24A a e + (-24A b - 24B a)d e + (24A c + 24B b)d e - 24B c d \\
&\quad * \\
&\quad m + 1 \\
&\quad (e x + d) \\
&\quad / \\
&\quad 4 \quad 4 \\
&\quad 4 \quad 3 \\
&\quad 4 \quad 2 \\
&\quad 4 \quad 4 \\
&\quad e m + 10e m + 35e m + 50e m + 24e \\
&\quad Type: Expression(Integer) \\
&\quad E 98 \\
\end{align*}
\]

\[
\begin{align*}
&\quad d0:=normalize(t0-D(r0,x)) \\
&\quad R \\
&\quad R \\
&\quad R (3) 0 \\
&\quad R Type: Expression(Integer) \\
&\quad E 99 \\
\end{align*}
\]

)clear all

\[
\begin{align*}
&\quad t0:=(A+B*x)*(d+e*x)^4*(a+b*x+c*x^2) \\
&\quad R \\
&\quad R \\
&\quad R (1) \\
&\quad R 4 \quad 7 \\
&\quad 4 \quad 3 \quad 6 \\
&\quad R B c e x + ((A c + B b)e + 4B c d e)x \\
&\quad + \\
&\quad 4 \quad 3 \\
&\quad 2 \quad 2 \quad 5 \\
&\quad R ((A b + B a)e + (4A c + 4B b)d e + 6B c d e)x \\
&\quad Type: Expression(Integer) \\
&\quad E 98 \\
\end{align*}
\]
(3) 0
Type: Expression(Integer)

)clear all

(2) 1 7 7 1 1 7 1 6 6
Type: Polynomial(Integer)

--S 104 of 1035
r0:=-1/4*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)*(d*e^x)^4/e^4-1/5*(A*e*(2*c*d-b*e)-B*(3*c*d^2-2*b*d-a*e))*(d*e^x)^5/e^4-1/6*(3*B*c*d-b*B*e-A*c*e)*
(d*e^x)^6/e^4+1/7*B*c*(d*e^x)^7/e^4
Type: Polynomial(fraction(integer))
\[\frac{d_0}{e^{104}} = \text{normalize}(t_0 - D(r_0, x))\]

\[t_0 := (A + B \times x) \times (d + e \times x)^2 \times (a + b \times x + c \times x^2)\]

\[\text{Type: Polynomial(Integer)}\]

\[37\]
\[ r_0 = \frac{-1/3 \cdot (B \cdot d - A \cdot e) \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) \cdot (d + e \cdot x)^3 / e^4}{-1/4 \cdot (A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (3 \cdot c \cdot d^2 - e \cdot (2 \cdot b \cdot d + a \cdot e))) \cdot (d + e \cdot x)^4 / e^4 - 1/5 \cdot (3 \cdot B \cdot c \cdot d - b \cdot B \cdot e - A \cdot c \cdot e) \cdot (d + e \cdot x)^5 / e^4 + 1/6 \cdot B \cdot c \cdot (d + e \cdot x)^6 / e^4} \]

\[ d_0 = \text{normalize}(t_0 - D(r_0, x)) \]
--R $B c e x + ((A c + B b)e + B c d)x + ((A b + B a)e + (A c + B b)d)x$
--R +
--R $(A a e + (A b + B a)d)x + A a d$
--R Type: Polynomial(Integer)
--E 109

--S 110 of 1035
$r_0 := a*A*d*x+1/2*(A*b*d+a*b*e+a*A*e)*x^2+1/3*(b*B*d+A*c*d+A*b*e+a*B*e)*x^3+$
$1/4*(B*c*d+b*B*e+A*c*e)*x^4+1/5*B*c*e*x^5$
--R
--R
--R (2)
--R 1 5 1 1 1 4
--R $- B c e x + ((- A c + - B b)e + - B c d)x$
--R 5 4 4 4
--R +
--R 1 1 1 1 3 1 1 1 2
--R $((- A b + - B a)e + (- A c + - B b)d)x + (- A a e + (- A b + - B a)d)x$
--R 3 3 3 3 2 2 2
--R +
--R $A a d x$
--R Type: Polynomial(Fraction(Integer))
--E 110

--S 111 of 1035
d_0 := normalize(t_0-D(r_0,x))
--R
--R
--R (3) 0
--R (2)
--R Type: Expression(Integer)
--E 111

)clear all

--S 112 of 1035
t_0 := (A+B*x)*(a+b*x+c*x^2)
--R
--R
--R (1) $B c x + (A c + B b)x + (A b + B a)x + A a$
--R Type: Polynomial(Integer)
--E 112

--S 113 of 1035
$r_0 := a*A*x+1/2*(A*b+a*B)*x^2+1/3*(b*B+A*c)*x^3+1/4*B*c*x^4$
--R
--R
--R $- B c x + ((- A c + - B b)x + (- A b + - B a)x + A a x$
--R 1 4 1 1 3 1 1 2
--R $- B c x + ((- A c + - B b)x + (- A b + - B a)x + A a x$
--R 4 3 3 2 2
\begin{verbatim}
--R Type: Polynomial(Fraction(Integer))
--E 113

--S 114 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R (3) 0
--R Type: Expression(Integer)
--E 114

)clear all

--S 115 of 1035
t0:=(A+B*x)*(a+b*x+c*x^2)/(d+e*x)
--R
--R
--R 3 2
--R B c x + (A c + B b)x + (A b + B a)x + A a
--R (1) -------------------------------------------
--R e x + d
--R Type: Fraction(Polynomial(Integer))
--E 115

--S 116 of 1035
r0:=-(A*e*(c*d-b*e)-B*(c*d^2-e*(b*d-a*e)))*x/e^3-
  1/2*(B*c*d-b*b*e-A*c*e)*x^2/e^2+1/3*B*c*x^3/e-
  (B*d-A*e)*(c*d^2-b*b*e+a*a*e^2)*log(d+e*x)/e^4
--R
--R
--R (2)
--R 3 2 2 3
--R (6A a e + (- 6A b - 6B a)d e + (6A c + 6B b)d e - 6B c d )log(e x + d)
--R +
--R 3 3 3 2 2
--R 2B c e x + ((3A c + 3B b)e - 3B c d e )x
--R +
--R 3
--R 3 2 2
--R ((6A b + 6B a)e + (- 6A c - 6B b)d e + 6B c d e)x
--R /
--R 4
--R 6e
--R Type: Expression(Integer)
--E 116

--S 117 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0

\end{verbatim}
$t_0 := \frac{(A+B\cdot x)\cdot (a+b\cdot x+c\cdot x^2)}{(d+e\cdot x)^2}$

$E 118$

$T_0 := \frac{B \cdot c \cdot x + (A \cdot c + B \cdot b) \cdot x + (A \cdot b + B \cdot a) \cdot x + A \cdot a}{e \cdot x + 2 \cdot d \cdot e \cdot x + d}$

$E 119$

$r_0 := -\frac{(2 \cdot B \cdot c \cdot d - b \cdot B \cdot e - A \cdot c \cdot e) \cdot x}{e^3 + 1/2 \cdot B \cdot c \cdot x - 2/e^2 + (B \cdot d - A \cdot e) \cdot x}$

$E 119$

$d_0 := \text{normalize} (t_0 - D(r_0, x))$
\[
t_0 := \frac{(A + B \cdot x) \cdot (a + b \cdot x + c \cdot x^2)}{(d + e \cdot x)^3}
\]

\[
r_0 := \frac{B \cdot c \cdot x}{e^3} + \frac{1}{2} \cdot \frac{(B \cdot d - A \cdot e) \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)}{e^4 \cdot (d + e \cdot x)^2} + \frac{(A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (3 \cdot c \cdot d^2 - e \cdot (2 \cdot b \cdot d - a \cdot e))}{e^4 \cdot (d + e \cdot x)} - \frac{(3 \cdot B \cdot c \cdot d - b \cdot B \cdot e - A \cdot c \cdot e) \cdot \log(d + e \cdot x)}{e^4}
\]

\[
d_0 := \text{normalize}(t_0 - D(r_0, x))
\]
\[ t_0 := \frac{(A+B*x)(a+b*x+c*x^2)}{(d+e*x)^4} \]

\[ r_0 := \frac{1}{3}(B*d-A*e)(c*d^2-b*d*e+a*e^2)/e^4*(d+e*x)^3 + \]
\[ \frac{1}{2}(A*e*(2*c*d-b*e)-B*(3*c*d^2-2*e*(2*b*d-a*e)))/e^4*(d+e*x)^2 + \]
\[ (3*B*c*d-b*B*e-A*c*e)/e^4*(d+e*x)+B*c*log(d+e*x)/e^4 \]

\[ d_0 := \text{normalize}(t_0-D(r_0, x)) \]
t0:=(A+B*x)*(a+b*x+c*x^2)/(d+e*x)^5

r0:=1/4*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)/(e^4*(d+e*x)^4)+1/3*(A*e*(2*c*d-b*e)-B*(3*c*d^2-e*(2*b*d-a*e)))/(e^4*(d+e*x)^3)+1/2*(3*B*c*d-b*B*e-A*c*e)/(e^4*(d+e*x)^2)-B*c/(e^4*(d+e*x))
t0:=(A+B*x)*(a+b*x+c*x^2)/(d+e*x)^6

(1) 6 6 5 5 2 4 4 3 3 3 4 2 2 5 6

B c x + (A c + B b)x + (A b + B a)x + A a

(2) 1 3 3 1 1 3 1 2 2

- - B c e x + ((- - A c - - B b)e - - B c d e )x

1 1 3 1 1 2 1 2 1 3

((- - A b - - B a)e + (- - A c - - B b)d e - - B c d e)x - - A a e

2 3 3 2

4 4 6 6 4 5

(3) 0

9 5 8 4 2 7 3 3 6 2 4 5 5 4

e x + 5d e x + 10d e x + 10d e x + 5d e x + d e

(3) 0

Type: Expression(Integer)
\[ R \]
\[ R \quad B \quad c \quad x \quad + \quad (A \quad c \quad + \quad B \quad b) \quad x \quad + \quad (A \quad b \quad + \quad B \quad a) \quad x \quad + \quad A \quad a \]
\[ R \]
\[ R \quad 7 \quad 7 \quad 6 \quad 6 \quad 2 \quad 5 \quad 5 \quad 3 \quad 4 \quad 4 \quad 4 \quad 3 \quad 3 \quad 5 \quad 2 \quad 2 \quad 6 \quad 7 \]
\[ R \quad e \quad x \quad + \quad 7d \quad e \quad x \quad + \quad 21d \quad e \quad x \quad + \quad 35d \quad e \quad x \quad + \quad 35d \quad e \quad x \quad + \quad 21d \quad e \quad x \quad + \quad 7d \quad e \quad x \quad + \quad d \]
\[ R \]
\[ Type: \quad Fraction(Polynomial(Integer)) \]
\[ E \]
\[ S \]
\[ r0:=1/6*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)/(e^4*(d+e*x)^6)+1/5*(A*e*(2*c*d-b*e)-B*(3*c*d^2-e*(2*b*d-a*e)))/((e^4*(d+e*x)^5)+1/4*(3*B*c*d-b*e-A*c*e)/(e^4*(d+e*x)^3)) \]
\[ R \]
\[ R \]
\[ R \quad 1 \quad 3 \quad 3 \quad 1 \quad 1 \quad 3 \quad 1 \quad 2 \quad 2 \]
\[ R \quad - \quad B \quad c \quad e \quad x \quad + \quad ((- \quad A \quad c \quad - \quad B \quad b)e \quad - \quad B \quad c \quad d \quad e \quad )x \]
\[ R \quad 3 \quad 4 \quad 4 \quad 4 \]
\[ R \quad + \]
\[ R \quad 1 \quad 1 \quad 3 \quad 1 \quad 1 \quad 2 \quad 1 \quad 2 \quad 1 \quad 3 \]
\[ R \quad ((- \quad A \quad b \quad - \quad B \quad a)e \quad + \quad (- \quad - \quad A \quad c \quad - \quad B \quad b)d \quad e \quad - \quad B \quad c \quad d \quad e \quad )x \quad - \quad A \quad a \quad e \]
\[ R \quad 5 \quad 5 \quad 10 \quad 10 \quad 10 \quad 6 \]
\[ R \quad + \]
\[ R \quad 1 \quad 1 \quad 2 \quad 1 \quad 1 \quad 2 \quad 1 \quad 3 \]
\[ R \quad (- \quad A \quad b \quad - \quad - \quad B \quad a)d \quad e \quad + \quad (- \quad - \quad A \quad c \quad - \quad B \quad b)d \quad e \quad - \quad B \quad c \quad d \]
\[ R \quad 30 \quad 30 \quad 60 \quad 60 \quad 60 \]
\[ R \quad / \]
\[ R \quad 10 \quad 6 \quad 9 \quad 5 \quad 2 \quad 8 \quad 4 \quad 3 \quad 7 \quad 3 \quad 4 \quad 6 \quad 2 \quad 5 \quad 5 \quad 6 \quad 4 \]
\[ R \quad e \quad x \quad + \quad 6d \quad e \quad x \quad + \quad 15d \quad e \quad x \quad + \quad 20d \quad e \quad x \quad + \quad 15d \quad e \quad x \quad + \quad 6d \quad e \quad x \quad + \quad d \quad e \]
\[ R \quad Type: \quad Fraction(Polynomial(Fraction(Integer))) \]
\[ E \]
\[ S \]
\[ d0:=normalize(t0-D(r0,x)) \]
\[ R \]
\[ R \]
\[ R \quad (3) \quad 0 \]
\[ R \quad Type: \quad Expression(Integer) \]
\[ E \]
\[ S \]
\[ )clear \quad all \]
\[ S \]
\[ t0:=(A+B*x)*(d+e*x)^m*(a+b*x+c*x^2)^2 \]
\[ R \]
\[ R \]
\[ R \quad (1) \]
\[ R \quad 2 \quad 5 \quad 2 \quad 4 \quad 2 \quad 3 \]
\[ R \quad B \quad c \quad x \quad + \quad (A \quad c \quad + \quad 2B \quad b \quad c) \quad x \quad + \quad ((2A \quad b \quad + \quad 2B \quad a)c \quad + \quad B \quad b \quad )x \]
\[ R \quad + \]

46
r0:=-((B*d-A*e)*(c*d^2-b*d*e+a*e^2)^2/(e^6*(1+m))-(c*d^2-b*d*e+a*e^2)^2*(2*A*e*(2*c*d-b*e)-B*(5*c*d^2-e*(3*b*d-a*e)))*_ (d*e*x)^2/(e^6*(2+m))-(B*(10*c^2*d^2+3*b*e^2-2*(3*b*d-2*a*e))*_ 6*c*d*e*(2*b*d-a*e))*A*e*(6*c^2*d^2+2*b^2*e^2-2*c*e*e*(3*b*d-a*e)))*_ (d*e*x)^3/(e^6*(3+m))-(2*A*c*e*(2*c*d-b*e)-B*(10*c^2*d^2+b^2*e^2-2_ *2*c*e*(4*b*d-a*e)))*(d*e*x)^4/(e^6*(4+m))-c*(5*B*c*d-2*b*B*e-A*c*e)*_ (d*e*x)^5/(e^6*(5+m)))/((c*d^2-b*d*e+a*e^2)^2/(e^6*(1+m)))/(e^6*(6+m))}
\[ \begin{align*}
&-R \quad m \\
&-R \quad + \\
&-R \quad \left( (214A b + 214B a)c + 107B b \right) e + (-428A c - 856B b c) d e \\
&-R \quad + \\
&-R \quad 1070B c d \\
&-R \quad * \\
&-R \quad 3 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad \left( (614A b + 614B a)c + 307B b \right) e + (-1228A c - 2456B b c) d e \\
&-R \quad + \\
&-R \quad 3070B c d \\
&-R \quad * \\
&-R \quad 2 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad \left( (792A b + 792B a)c + 396B b \right) e + (-1584A c - 3168B b c) d e \\
&-R \quad + \\
&-R \quad 3960B c d \\
&-R \quad * \\
&-R \quad m + 4 \\
&-R \quad (e x + d) \\
&-R \quad + \\
&-R \quad \left( 2A a c + A b + 2B a b \right) e + (-6A b - 6B a)c - 3B b d e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 2 \quad 3 \\
&-R \quad (6A c + 12B b c) d e - 10B c d \\
&-R \quad * \\
&-R \quad 5 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad 2 \quad 3 \\
&-R \quad (36A a c + 18A b + 36B a b) e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 2 \quad 2
\end{align*} \]
\[( (- 108A b - 108B a)c - 54B b )d e + (108A c + 216B b c)d e + 2 3 180B c d \times 4 m + 2 \]
\[( 242A a c + 121A b + 242B a b)e + 2 2 2 2 \]
\[( (- 726A b - 726B a)c - 363B b )d e + (726A c + 1452B b c)d e + 2 3 - 1210B c d \times 3 m + 2 \]
\[( 744A a c + 372A b + 744B a b)e + 2 2 2 3 \]
\[( (- 2232A b - 2232B a)c - 1116B b )d e + 2 2 2 3 \]
\[( 2232A c + 4464B b c)d e - 3720B c d \times 2 m + 2 \]
\[( 1016A a c + 508A b + 1016B a b)e + 2 2 \]
\[( (- 3048A b - 3048B a)c - 1524B b )d e + 2 2 2 3 \]
\[( 3048A c + 6096B b c)d e - 5080B c d \times m \]
\[( 480A a c + 240A b + 480B a b)e + 2 \]
\[( ( - 1440A b - 1440B a)c - 720B b )d e + (1440A c + 2880B b c)d e + 2 3 \]
\[-2400B \, c \, d\]
\[\ast\]
\[m + 3\]
\[(e \times + d)\]
\[+\]
\[-2 \, 4 \, 2 \, 2 \, 3\]
\[-(2A \, a \, b \, + \, B \, a \, )e \, + \, (-4A \, a \, c \, - \, 2A \, b \, - \, 4B \, a \, b) d \, e\]
\[+\]
\[-2 \, 2 \, 2 \, 2 \, 3 \, 2 \, 4\]
\[-((6A \, b \, + \, 6B \, a)c \, + \, 3B \, b \, ) \, d \, e \, + \, (-4A \, c \, - \, 8B \, b \, c) d \, e \, + \, 5B \, c \, d\]
\[\ast\]
\[5\]
\[m\]
\[+\]
\[-2 \, 4 \, 2 \, 2 \, 3\]
\[-((38A \, a \, b \, + \, 19B \, a \, )e \, + \, (-76A \, a \, c \, - \, 38A \, b \, - \, 76B \, a \, b)d \, e\]
\[+\]
\[-2 \, 2 \, 2 \, 2 \, 3\]
\[-((114A \, b \, + \, 114B \, a)c \, + \, 57B \, b \, ) \, d \, e \, + \, (-76A \, c \, - \, 152B \, b \, c) d \, e\]
\[+\]
\[2 \, 4\]
\[-95B \, c \, d\]
\[\ast\]
\[4\]
\[m\]
\[+\]
\[-2 \, 4 \, 2 \, 2 \, 3\]
\[-((274A \, a \, b \, + \, 137B \, a \, )e \, + \, (-548A \, a \, c \, - \, 274A \, b \, - \, 548B \, a \, b)d \, e\]
\[+\]
\[-2 \, 2 \, 2 \, 2 \, 3\]
\[-((822A \, b \, + \, 822B \, a)c \, + \, 411B \, b \, ) \, d \, e \, + \, (-548A \, c \, - \, 1096B \, b \, c) d \, e\]
\[+\]
\[2 \, 4\]
\[-685B \, c \, d\]
\[\ast\]
\[3\]
\[m\]
\[+\]
\[-2 \, 4 \, 2 \, 2 \, 3\]
\[-((922A \, a \, b \, + \, 461B \, a \, )e \, + \, (-1844A \, a \, c \, - \, 922A \, b \, - \, 1844B \, a \, b)d \, e\]
\[+\]
\[-2 \, 2 \, 2\]
\[-((2766A \, b \, + \, 2766B \, a)c \, + \, 1383B \, b \, ) \, d \, e\]
\[+\]
\[2 \, 3 \, 2 \, 4\]
\[-(1844A \, c \, - \, 3688B \, b \, c) \, d \, e \, + \, 2305B \, c \, d\]
\[\ast\]
\[2\]
\[m\]
\[+\]
\[
\begin{align*}
&24 (1404A \ a \ b + 702B \ a )e \\
&+ \\
&23 (-2808A \ a \ c - 1404A \ b - 2808B \ a \ b)d \ e \\
&+ \\
&22 2 ((4212A \ b + 4212B \ a)c + 2106B \ b )d \ e \\
&+ \\
&23 24 (-2808A \ c - 5616B \ b \ c)d \ e + 3510B \ c \ d \\
&* \\
&m \\
&+ \\
&24 (720A \ a \ b + 360B \ a )e + (-1440A \ a \ c - 720A \ b - 1440B \ a \ b)d \ e \\
&+ \\
&22 22 2 ((2160A \ b + 2160B \ a)c + 1080B \ b )d \ e + (-1440A \ c - 2880B \ b \ c)d \ e \\
&+ \\
&24 1800B \ c \ d \\
&* \\
&m + 2 \\
&(e \ x + d) \\
&+ \\
&25 24 22 23 A \ a \ e + (-2A \ a \ b - B \ a )d \ e + (2A \ a \ c + A \ b + 2B \ a \ b)d \ e \\
&+ \\
&23 22 24 25 ((-2A \ b - 2B \ a)c - B \ b )d \ e + (A \ c + 2B \ b \ c)d \ e - B \ c \ d \\
&* \\
&5 \\
&m \\
&+ \\
&25 24 20A \ a \ e + (-40A \ a \ b - 20B \ a )d \ e \\
&+ \\
&23 2 (40A \ a \ c + 20A \ b + 40B \ a \ b)d \ e \\
&+ \\
&23 22 24 ((-40A \ b - 40B \ a)c - 20B \ b )d \ e + (20A \ c + 40B \ b \ c)d \ e \\
&+ \\
&25 -20B \ c \ d \\
&* \\
&4 \\
&m \\
&+ \\
\end{align*}
\]
\[\begin{align*}
&+ 2 \quad 5 \quad 2 \quad 4 \\
&+ 155A \ a \ e \ + (-310A \ a \ b - 155B \ a )d \ e \\
&+ 2 \quad 2 \quad 3 \\
&+ (310A \ a \ c + 155A \ b + 310B \ a \ b)d \ e \\
&+ 2 \quad 3 \quad 2 \quad 2 \quad 4 \\
&+ ((-310A \ b - 310B \ a)c - 155B \ b )d \ e + (155A \ c + 310B \ b \ c)d \ e \\
&+ 2 \quad 5 \\
&- 155B \ c \ d \\
&* 3 \\
&m \\
&+ 2 \quad 5 \\
&580A \ a \ e \ + (-1160A \ a \ b - 580B \ a )d \ e \\
&+ 2 \quad 2 \quad 3 \\
&+ (1160A \ a \ c + 580A \ b + 1160B \ a \ b)d \ e \\
&+ 2 \quad 3 \quad 2 \quad 2 \quad 4 \\
&+ ((-1160A \ b - 1160B \ a)c - 580B \ b )d \ e + (580A \ c + 1160B \ b \ c)d \ e \\
&+ 2 \quad 5 \\
&- 580B \ c \ d \\
&* 2 \\
&m \\
&+ 2 \quad 5 \\
&1044A \ a \ e \ + (-2088A \ a \ b - 1044B \ a )d \ e \\
&+ 2 \quad 2 \quad 3 \\
&+ (2088A \ a \ c + 1044A \ b + 2088B \ a \ b)d \ e \\
&+ 2 \quad 3 \quad 2 \\
&+ ((-2088A \ b - 2088B \ a)c - 1044B \ b )d \ e \\
&+ 2 \quad 4 \quad 2 \quad 5 \\
&+ (1044A \ c + 2088B \ b \ c)d \ e - 1044B \ c \ d \\
&* m \\
&m \\
&+ 2 \quad 5 \\
&720A \ a \ e \ + (-1440A \ a \ b - 720B \ a )d \ e \\
&+ 2 \quad 2 \quad 3 \\
&+ (1440A \ a \ c + 720A \ b + 1440B \ a \ b)d \ e \\
&+ \end{align*}\]
\[
\begin{align*}
&\quad \quad (\frac{(-1440A b - 1440B a)c - 720B b}{d e + (720A c + 1440B b c)d e} + 25) - 720B c d \quad * \quad m + 1 \\
&\quad \quad (e x + d) / (6 6 6 5 6 4 6 3 6 2 6 6 e m + 21e m + 175e m + 735e m + 1624e m + 1764e m + 720e) \\
&\quad \quad Type: Expression(Integer) \\
\end{align*}
\]

\[d0:=\text{normalize}(t0-D(r0,x))\]

\[d0\]

\[Type: Expression(Integer)\]

\[)\text{clear all}\]

\[t0:=((A+B*x)*(d+e*x)^5*(a+b*x+c*x^2)^2)\]

\[t0\]

\[Type: Expression(Integer)\]
--R 0 0 0 0 0 0 0 0 0 0 0
--R B c e x + ((-- A c + - B b c)e + - B c d e )x
--R 11 10 5 2
--R +
--R 2 2 1 2 11 5 2 10 10
--R 10 2 2 11 5 2 10 10
--R 9 9 9 9 9 9 9 9 9 9
--R +
--R 10 2 2 11 5 2 10 10
--R 10 2 2 11 5 2 10 10
--R 9 9 9 9 9 9 9 9 9 9
--R *
--R 9
--R x
--R +
--R 1 1 2 1 11 5 5 5 2 10
--R 10 2 2 11 5 2 10 10
--R 10 2 2 11 5 2 10 10
--R 9 9 9 9 9 9 9 9 9 9
--R *
--R 8
--R x
--R +
--R 2 2 11 5 2 10 10
--R 10 2 2 11 5 2 10 10
--R 10 2 2 11 5 2 10 10
--R 9 9 9 9 9 9 9 9 9 9
--R *
--R 7
--R x
--R +
--R 1 2 11 5 5 2 10
--R 6 3 6 3 6
--R +
--R 1 2 11 5 5 2 10
--R 6 3 6 3 6
--R +
--R 10 10 5 2 10 2 9
--R 3 3 3 3 3 3 3
--R +
--R 10 10 5 2 3 8 5 2 5 4 7 1 2 5 6
--R 55
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (A + B x) (d + e x)^4 (a + b x + c x^2)^2 \]

\[
\begin{align*}
2 & 4 & 9 & 2 & 4 & 2 & 3 & 8 \\
 & B & c & e & x & + & ((A & c & + & 2B & b & c)e & + & 4B & c & d & e & )x \\
+ & \\
2 & 4 & 2 & 3 & 2 & 2 & 2 & 7 \\
 & ((((2A & b & + & 2B & a)c & + & B & b )e & + & (4A & c & + & 8B & b & c)d & e & + & 6B & c & d & e & )x \\
+ & \\
2 & 4 & 2 & 3 \\
 & (2A & a & c & + & A & b & + & 2B & a & b)e & + & ((8A & b & + & 8B & a)c & + & 4B & b & )d & e \\
+ & \\
2 & 2 & 2 & 2 & 3 \\
 & (6A & c & + & 12B & b & c)d & e & + & 4B & c & d & e \\
* & \\
6 & \\
& x \\
+ & \\
2 & 4 & 2 & 3 \\
 & (2A & a & b & + & B & a )e & + & (8A & a & c & + & 4A & b & + & 8B & a & b)d & e \\
+ & \\
2 & 2 & 2 & 3 & 2 & 4 \\
 & (((12A & b & + & 12B & a)c & + & 6B & b )d & e & + & (4A & c & + & 8B & b & c)d & e & + & B & c & d \\
* & \\
5 & \\
& x \\
+ & \\
2 & 4 & 2 & 3 & 2 & 2 \\
+ & \\
\end{align*}
\]
\[ ((8A \, b \, + \, 8B \, a)c \, + \, 4B \, b \, )d \, e \, + \, (A \, c \, + \, 2B \, b \, c)d \]

\[ -1/5(\, B \, d \, - \, A \, e \, )\, (c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (d \, e \, x)^5/e^6] -
\[ 1/6((c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (2A \, a \, b \, e \, + \, (5c \, d) \, - \, 2 \, * \, e \, (3b \, d \, - \, a \, e)) \, )/2 \, (d \, e \, x)^6 -
\[ 1/7((c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (2A \, a \, b \, e \, + \, (5c \, d) \, - \, 2 \, * \, e \, (3b \, d \, - \, a \, e)) \, )/2 \, (d \, e \, x)^7/e^6 -
\[ 1/8((c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (2A \, a \, b \, e \, + \, (5c \, d) \, - \, 2 \, * \, e \, (3b \, d \, - \, a \, e)) \, )/2 \, (d \, e \, x)^8/e^6 -
\[ 1/9((c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (2A \, a \, b \, e \, + \, (5c \, d) \, - \, 2 \, * \, e \, (3b \, d \, - \, a \, e)) \, )/2 \, (d \, e \, x)^9/e^6 -
\[ 1/10((c \, d^2 \, - \, b \, d \, + \, a \, e)^2 \, + \, (2A \, a \, b \, e \, + \, (5c \, d) \, - \, 2 \, * \, e \, (3b \, d \, - \, a \, e)) \, )/2 \, (d \, e \, x)^10/e^6 -
\]

\[ 2 \, 3 \, 2 \, 4 \]

\[ 4 \]

\[ x \]

\[ 2 \, 3 \, 2 \, 2 \, 2 \, 2 \, 3 \]

\[ (12A \, a \, + \, 6B \, a )d \, e \, + \, (8A \, a \, c \, + \, 4A \, b \, + \, 8B \, a \, b)d \, e \]

\[ 2 \, 4 \]

\[ ((2A \, b \, + \, 2B \, a)c \, + \, B \, b \, )d \]

\[ 3 \]

\[ x \]

\[ 2 \, 2 \, 2 \, 2 \, 3 \, 2 \, 4 \, 2 \]

\[ (6A \, a \, d \, e \, + \, (8A \, a \, b \, + \, 4B \, a \, )d \, e \, + \, (2A \, a \, c \, + \, A \, b \, + \, 2B \, a \, b)d \, d \, )x \]

\[ 2 \, 3 \, 2 \, 2 \, 4 \, 2 \, 4 \]

\[ (4A \, a \, d \, e \, + \, (2A \, a \, b \, + \, B \, a )d \, )x \, + \, A \, a \, d \]

\[ \text{Type: Polynomial(Integer)} \]

\[ 142 \]

\[ 143 \] of 1035
\[\begin{align*}
\text{--R} & \quad 7 \\
\text{--R} & \quad x \\
\text{--R} & \quad + \\
\text{--R} & \quad 1 \quad 1 \quad 2 \quad 10 \quad 4 \quad 2 \quad 2 \quad 4 \quad 9 \\
\text{--R} & \quad (- A a b + - B a )e + (- A a c + - A b + - B a b)d e \\
\text{--R} & \quad 3 \quad 6 \quad 3 \quad 3 \quad 3 \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 8 \quad 2 \quad 2 \quad 4 \quad 3 \quad 7 \quad 1 \quad 2 \quad 4 \quad 6 \\
\text{--R} & \quad ((2A b + 2B a)c + B b )d e + (- A c + - B b c)d e + - B c d e \\
\text{--R} & \quad 3 \quad 3 \quad 6 \\
\text{--R} & \quad * \\
\text{--R} & \quad 6 \\
\text{--R} & \quad x \\
\text{--R} & \quad + \\
\text{--R} & \quad 1 \quad 2 \quad 10 \quad 8 \quad 4 \quad 2 \quad 9 \\
\text{--R} & \quad - A a e + (- A a b + - B a )d e \\
\text{--R} & \quad 5 \quad 5 \quad 5 \\
\text{--R} & \quad + \\
\text{--R} & \quad 12 \quad 6 \quad 2 \quad 12 \quad 2 \quad 8 \quad 8 \quad 8 \quad 4 \quad 2 \quad 3 \quad 7 \\
\text{--R} & \quad (- - A a c + - A b + - B a )d e + ((- A b + - B a)c + - B b )d e \\
\text{--R} & \quad 5 \quad 5 \quad 5 \quad 5 \quad 5 \quad 5 \\
\text{--R} & \quad + \\
\text{--R} & \quad 1 \quad 2 \quad 2 \quad 4 \quad 6 \\
\text{--R} & \quad (- - A c + - B b c)d e \\
\text{--R} & \quad 5 \quad 5 \\
\text{--R} & \quad * \\
\text{--R} & \quad 5 \\
\text{--R} & \quad x \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 9 \quad 3 \quad 2 \quad 2 \quad 8 \quad 2 \quad 3 \quad 7 \\
\text{--R} & \quad A a d e + (3A a b + - B a )d e + (2A a c + A b + 2B a b)d e \\
\text{--R} & \quad 2 \\
\text{--R} & \quad + \\
\text{--R} & \quad 1 \quad 1 \quad 1 \quad 2 \quad 4 \quad 6 \\
\text{--R} & \quad ((- A b + - B a)c + - B b )d e \\
\text{--R} & \quad 2 \quad 2 \quad 4 \\
\text{--R} & \quad * \\
\text{--R} & \quad 4 \\
\text{--R} & \quad x \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 8 \quad 8 \quad 4 \quad 2 \quad 3 \quad 7 \quad 2 \quad 1 \quad 2 \quad 2 \quad 4 \quad 6 \quad 3 \\
\text{--R} & \quad (2A a d e + (- A a b + - B a )d e + (- A a c + - A b + - B a b)d e )x \\
\text{--R} & \quad 3 \quad 3 \quad 3 \quad 3 \quad 3 \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 7 \quad 1 \quad 2 \quad 4 \quad 6 \quad 2 \quad 4 \quad 6 \quad 1 \quad 2 \quad 5 \quad 5 \\
\text{--R} & \quad (2A a d e + (A a b + - B a )d e )x + A a d e x + - A a d e \\
\text{--R} & \quad 2 \quad 5 \\
\text{--R} & \quad + \\
\text{--R} & \quad 1 \quad 1 \quad 2 \quad 6 \quad 4 \quad 2 \quad 1 \quad 2 \quad 2 \quad 4 \quad 6 \quad 3 \\
\text{--R} & \quad (- - A a b + - - B a )d e + (--- A a c + --- A b + --- B a b)d e \\
\end{align*}\]
\begin{verbatim}
d0:=normalize(t0-D(r0,x))
\end{verbatim}
\begin{align*}
-\frac{1}{4} & (B-d-A-e) + c \cdot d^2 - b \cdot d-e+a \cdot e^2)^2 \cdot 2 \cdot (d+e \cdot x)^4/e^6 - \\
-\frac{1}{5} & (c \cdot d^2 - b \cdot d-e+a \cdot e^2) \cdot (2 \cdot A \cdot e \cdot (2 \cdot c \cdot d-b \cdot e) - B \cdot (5 \cdot c \cdot d^2-e \cdot (3 \cdot b \cdot d-a \cdot e))) \cdot (d+e \cdot x)^5/e^6 - \\
-\frac{1}{6} & (B \cdot (10 \cdot c \cdot d^2+3 \cdot b \cdot e^2 \cdot (3 \cdot b \cdot d-2 \cdot a \cdot e)) - A \cdot e \cdot (6 \cdot c \cdot d^2-b \cdot e^2-2 \cdot c \cdot e \cdot (3 \cdot b \cdot d-a \cdot e))) \cdot (d+e \cdot x)^6/e^6 - \\
\end{align*}

\begin{align*}
&-\frac{1}{7} \cdot (2 \cdot A \cdot c \cdot e \cdot (2 \cdot c \cdot d-b \cdot e) - B \cdot (10 \cdot c \cdot d^2+2 \cdot b \cdot e^2-2 \cdot c \cdot e \cdot (4 \cdot b \cdot d-a \cdot e))) \cdot (d+e \cdot x)^7/e^6 - \\
&\frac{1}{8} \cdot (5 \cdot B \cdot c \cdot d^2+2 \cdot b \cdot e \cdot (A \cdot c \cdot e)) \cdot (d+e \cdot x)^8/e^6 - \\
&\frac{1}{9} \cdot B \cdot c^2 \cdot (d+e \cdot x)^9/e^6
\end{align*}
d0:=normalize(t0-D(r0,x))
\[ \begin{align*}
t_0 & := (A + B x) (d + e x)^2 (a + b x + c x^2)^2 \\
r_0 & := -\frac{1}{3} (B \cdot d - A \cdot e) (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) - \frac{2}{3} (d + e x)^3 \cdot \frac{3}{e} \cdot \frac{6}{1} \cdot \frac{4}{c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2} \\
& \quad \cdot (2 A \cdot e (2 c \cdot d - b \cdot e) - (5 \cdot c \cdot d^2 - e \cdot (3 \cdot b \cdot d - a \cdot e)) \cdot (d + e x) \cdot \frac{4}{e} \cdot \frac{6}{-1} \\
& \quad \cdot \frac{1}{5} \cdot (B \cdot (10 c \cdot d^2 + b \cdot e^2 - 2 \cdot (3 \cdot b \cdot d - a \cdot e) - 6 \cdot c \cdot d \cdot e + (2 \cdot b \cdot d - a \cdot e)) - A \cdot e \cdot (6 c \cdot d^2 + b \cdot e^2 - 2 \cdot (3 \cdot b \cdot d - a \cdot e)) \cdot (d + e x) \cdot \frac{5}{e} \cdot \frac{6}{-1} 
\end{align*} \]
\[
\frac{1}{6} \times (2A^2c + 2c^2d - 2b^2e - 2c^2e - 2c^2b^2d - 2c^2d^2e - 2c^2d - 2c^2e^2) \times \frac{7}{e^6} - \frac{1}{7}c \times (5Bc^2d - 2bc^2e - Ac^2e) \times \frac{8}{e^6}
\]
d0:=normalize(t0-D(r0,x))

\[ t0 := (A+Bx)(d+ex)(a+bx+c+x^2)^2 \]

\[ r0 := a^2A+b+d+aB+d+aA+e+2+1/3(aB+(2b+2aB+2aA+c2+b)+e+c(A+c+d+2aB+e))\times^4+1/5(b+2B+2b+c(B+d+aA)+e+2e+2b+c(B+d+aA)+e+c(A+c+d+2aB+e))\times^5+1/6(c(B+c+d+2b+2b+c+A+c+e))\times^6+1/7(B+c^2+e+x)^7 \]
-\( R \)

(2)

\[
\begin{align*}
- & 1 2 7 1 2 1 1 2 6 \\
& - B c e x + ((- A c + - B b c)e + - B c d)x \\
& 7 6 3 6 \\
& + \\
& 2 2 1 2 1 2 2 5 \\
& ((- A b + - B a)c + - B b e + ((- A c + - B b c)d)x \\
& 5 5 5 5 5 \\
& + \\
& 1 1 2 1 1 1 1 2 4 \\
& ((- A a c + - A b + - B a b)e + ((- A b + - B a)c + - B b )d)x \\
& 2 4 2 2 2 2 4 \\
& + \\
& 1 2 2 2 2 \\
& (- A a e + (A a b + - B a )d)x + A a d x \\
& 2 2 \\
& \text{Type: Polynomial(Fraction(Integer))}
\end{align*}
\]

-\( E \) 152

-\( S \) 153 of 1035

d0:=normalize(t0-D(r0,x))

-\( R \)

-\( R \)

(3) 0

-\( R \)

-\( E \) 153

)clear all

-\( S \) 154 of 1035

t0:=(A+B*x)*(a+b*x+c*x^2)^2

-\( R \)

-\( R \)

(1)

\[
\begin{align*}
& 2 5 2 4 \\
& B c x + (A c + 2B b c)x + ((2A b + 2B a)c + B b )x \\
& 2 2 2 3 \\
& + \\
& 2 2 2 2 \\
& (2A a c + A b + 2B a b)x + (2A a b + B a )x + A a \\
& \text{Type: Polynomial(Integer)}
\end{align*}
\]

-\( E \) 154

-\( S \) 155 of 1035

r0:=a^2*A*x+1/2*a*(2*A*b+a*B)*x^2+1/3*(2*a*b*B+A*(b^2+2*a*c)))*x^3+_
1/4*(b^2*B+2*A*b+c+2*a*B*c)*x^4+1/5*c*(2*b*B+A*c)*x^5+1/6*B*c^2*x^6

-\( R \)
--R
--R (2)
--R  1  2  6  1  2  2  5  1  1  1  2  4
--R  -  B  c  x  +  (  -  A  c  +  -  B  b  c)x  +  (  -  A  b  +  -  B  a)c  +  -  B  b )x
--R  6  5  5  2  2  4
--R  +
--R  2  1  2  2  3  1  2  2  2
--R  (  -  A  a  c  +  -  A  b  +  -  B  a  b)x  +  (  A  a  b  +  -  B  a )x  +  A  a  x
--R  3  3  3  2
--R Type: Polynomial(Fraction(Integer))
--E 155

--S 156 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 156

)clear all

--S 157 of 1035
t0:=(A+B*x)*(a+b*x+c*x^2)^2/(d+e*x)
--R
--R
--R (1)
--R  2  5  2  4  2  3
--R  B  c  x  +  (  A  c  +  2B  b  c)x  +  (  2A  b  +  2B  a)c  +  B  b )x
--R  +
--R  2  2  2  2
--R  (  2A  a  c  +  A  b  +  2B  a  b)x  +  (  2A  a  b  +  B  a )x  +  A  a
--R  /
--R  e  x  +  d
--R Type: Fraction(Polynomial(Integer))
--E 157

--S 158 of 1035
r0:=-((c*d^2-b*de+a*e^2)*(2*A*e*(2*c*d-b*e)-B*(5*c*d^2-2*e*(3*b*d-a*e))))*.
   x/e^5-1/2*(B*(10*c^2*d^3+b*e^2*(3*b*d-2*a*e)))*d+e*x)^2/e^6-1/3*(2*A*c*e*
   (2*c*d-b*e)-B*(10*c^2*d^2+b*e^2-2*c*e*(4*b*d-a*e)))*(d+e*x)^3/e^6-
   1/4*e*c*(5*B*c*d-2*b*B*e-A*c*e)*(d+e*x)^4/e^6+1/5*B*c^2*(d+e*x)^5/e^6-
   (B*d-A*e)*(c*d^2-b*d*e+a*e^2)*2*log(d+e*x)/e^6
--R
--R
--R (2)
--R  2  5  2  4
--R  60A  a  e  +  (-  120A  a  b  -  60B  a )d  e
--R  +

67
\[
\begin{align*}
&2 \quad 2 \quad 3 \\
&+ \\
&2 \quad 3 \quad 2 \quad 4 \quad 2 \quad 5 \\
&(120A \ a \ c + 60A \ a \ b + 120B \ a \ b) \ d \ e \\
&* \\
&\log(e \ x + d) \\
&+ \\
&2 \ 5 \ 5 \ 2 \ 4 \ 4 \\
&12B \ c \ e \ x + ((15A \ c + 30B \ b \ c)e - 15B \ c \ d \ e)x \\
&+ \\
&2 \ 5 \ 2 \ 4 \ 2 \ 2 \ 3 \ 3 \\
&(((40A \ b + 40B \ a)c + 20B \ b \ a)e + (-20A \ c - 40B \ b \ c)d \ e + 20B \ c \ d \ e)x \\
&+ \\
&2 \ 5 \ 2 \ 4 \\
&(60A \ a \ c + 30A \ b + 60B \ a \ b)e + ((-60A \ b - 60B \ a)c - 30B \ b \ d \ e)d \ e \\
&+ \\
&2 \ 3 \ 2 \ 2 \ 3 \ 3 \ 2 \\
&(30A \ c + 60B \ b \ c)d \ e - 30B \ c \ d \ e \\
&* \\
&2 \\
&x \\
&+ \\
&2 \ 5 \ 2 \ 4 \\
&(120A \ a \ b + 60B \ a \ b)e + (-120A \ a \ c - 60A \ b - 120B \ a \ b)d \ e \\
&+ \\
&2 \ 2 \ 3 \ 2 \ 3 \ 2 \\
&((120A \ b + 120B \ a)c + 60B \ b \ a)d \ e + (-60A \ c - 120B \ b \ c)d \ e \\
&+ \\
&2 \ 4 \\
&60B \ c \ d \ e \\
&* \\
&x \\
&+ \\
&2 \ 2 \ 3 \ 2 \ 3 \ 2 \\
&(60A \ a \ c + 30A \ b + 60B \ a \ b)d \ e + ((-140A \ b - 140B \ a)c - 70B \ b \ d \ e)d \ e \\
&+ \\
&2 \ 4 \ 2 \ 5 \\
&(115A \ c + 230B \ b \ c)d \ e - 163B \ c \ d \\
&/ \\
&6 \\
&60e \\
&\text{Type: Expression(Integer)}
\end{align*}
\]
\[ t_0 := \frac{(A+Bx)(a+bx+c+x^2)^2}{(d+ex)^2} \]

\[ r_0 := \frac{-2B(2c^2d-b^2e)(cd^2-ede)}{e^5} - \frac{1}{2}(2A c e (cd-bd) - B(3c^2d^2+b^2e^2)\log(e x + d)}{e^6} \]
\[\text{d0} := \text{normalize(t0-D(r0,x))}\]

\[\text{t0} := (A+B*x)*(a+b*x+c*x^2)^2/(d+e*x)^3\]
\[-R \quad B \ c \ x + (A \ c + 2B \ a \ b \ c)x + ((2A \ b + 2B \ a \ c + B \ b \ a)x + (2A \ a \ b + B \ a \ c + B \ b \ a)x + A \ a\] 

\[-R \quad /\] 

\[-R \quad e \ x + 3d \ e \ x + 3d \ e \ x + d\] 

Type: Fraction(Polynomial(Integer))
\begin{align*}
&\quad + \quad 2 \ 5 \ 2 \ 4 \ 2 \ 2 \ 3 \ 3 \\
&\quad + \quad ((12A b + 12B a)c + 6B b )e + (- 12A c - 24B b c )d e + 20B c d e )x \\
&\quad + \quad 2 \ 4 \ 2 \ 2 \ 3 \\
&\quad + \quad ((24A b + 24B a)c + 12B b )d e + (- 33A c - 66B b c )d e \\
&\quad + \quad 2 \ 3 \ 2 \\
&\quad + \quad 63B c d e \\
&\quad * \\
&\quad + \quad 2 \\
&\quad x \\
&\quad + \quad 2 \ 5 \ 2 \ 4 \\
&\quad + \quad (- 12A a b - 6B a )e + (24A a c + 12A b + 24B a b)d e \\
&\quad + \quad + \quad 2 \ 2 \ 3 \ 2 \ 3 \ 2 \ 2 \ 4 \\
&\quad + \quad ((- 24A b - 24B a)c - 12B b )d e + (6A c + 12B b c)d e + 6B c d e \\
&\quad + \quad x \\
&\quad + \quad 2 \ 5 \ 2 \ 4 \ 2 \ 2 \ 3 \\
&\quad - \quad 3A a e + (- 6A a b - 3B a )d e + (18A a c + 9A b + 18B a b)d e \\
&\quad + \quad + \quad 2 \ 3 \ 2 \ 2 \ 4 \ 2 \ 5 \\
&\quad + \quad ((- 30A b - 30B a)c - 15B b )d e + (21A c + 42B b c)d e - 27B c d \\
&\quad / \\
&\quad 8 \ 2 \ 7 \ 2 \ 6 \\
&\quad 6e x + 12d e x + 6d e \\
&\quad \text{Type: Expression(Integer)} \\
&\quad \text{Type: Expression(Integer)} \\
&\quad \text{Type: Expression(Integer)} \\
&\quad \text{Type: Expression(Integer)}
\end{align*}
\[
\frac{2}{4} \cdot \frac{3}{2} \cdot \frac{2}{3} \cdot \frac{1}{2} \cdot \frac{5}{4} \cdot \frac{4}{5}
\]
\[
3B \, c \, x \, + \, ((6A \, c \, + \, 12B \, b \, c)e \, - \, 15B \, c \, d \, e)\, x
\]
\[
+ \, 2 \, \frac{3}{4} \, \frac{2}{3} \, \frac{3}{3}
\]
\[
((18A \, c \, + \, 36B \, b \, c)d \, e \, - \, 63B \, c \, d \, e)\, x
\]
\[
+ \, 2 \, \frac{5}{2} \, \frac{4}{2}
\]
\[
(-12A \, a \, c \, - \, 6A \, b \, - \, 12B \, a \, b)e \, + \, ((36A \, b \, + \, 36B \, a)c \, + \, 18B \, b \, d \, e)
\]
\[
+ \, 2 \, \frac{2}{3} \, \frac{2}{3} \, 2
\]
\[
(-18A \, c \, - \, 36B \, b \, c)d \, e \, - \, 9B \, c \, d \, e
\]
\[
\star \, x
\]
\[
+ \, 2 \, \frac{5}{2} \, \frac{4}{2}
\]
\[
(-6A \, a \, b \, - \, 3B \, a \, e)\, x \, + \, (\, -12A \, a \, c \, - \, 6A \, b \, - \, 12B \, a \, b)d \, e
\]
\[
+ \, 2 \, \frac{2}{3} \, \frac{2}{3} \, 2 \, \frac{3}{2} \, \frac{2}{4}
\]
\[
((54A \, b \, + \, 54B \, a)c \, + \, 27B \, b \, d \, e \, + \, (\, -54A \, c \, - \, 108B \, b \, c)d \, e \, + \, 81B \, c \, d \, e
\]
\[
\star \, x
\]
\[
+ \, 2 \, \frac{5}{2} \, \frac{2}{4}
\]
\[
-2A \, a\, e\, +\, (\, -2A \, a \, b \, - \, B \, a \, )d\, e\, +\, (\, -4A \, a \, c \, - \, 2A \, b \, - \, 4B\, a \, b)d\, e
\]
\[
+ \, 2 \, \frac{3}{2} \, \frac{2}{4} \, \frac{2}{2} \, \frac{3}{2} \, \frac{2}{4} \, \frac{5}{2}
\]
\[
((22A \, b \, + \, 22B \, a)c \, + \, 11B \, b \, d \, e \, + \, (\, -26A \, c \, - \, 52B \, b \, c)d \, e \, + \, 47B \, c \, d
\]
\[
/ \, \frac{9}{3} \, \frac{8}{2} \, \frac{3}{2} \, \frac{2}{7} \, \frac{3}{6}
\]
\[
6e \, x \, + \, 18d \, e \, x \, + \, 18d \, e \, x \, + \, 6d \, e
\]
\[
\text{Type: Expression(Integer)}
\]
\[
\text{--E 167}
\]
\[
\text{--S 168 of 1035}
\]
\[
d0:=\text{normalize(t0-D(r0,x))}
\]
\[
\text{--R}
\]
\[
\text{--R (3) 0}
\]
\[
\text{--R}
\]
\[
\text{--E 168}
\]
\[
)\text{clear all}
\]
\[
\text{--S 169 of 1035}
\]
\[
t0:=(A+B*x)*(a+b*x+c*x^2)^2/(d+e*x)^5
\]
\[
\text{--R}
\]
\[
\text{--R (1)}
\]
\[
\text{--R 2 \, 5 \, 2 \, 4 \, 2 \, 3}
\]
\[
B \, c \, x \, + \, (A \, c \, + \, 2B \, b \, c)x \, + \, ((2A \, b \, + \, 2B \, a)c \, + \, B \, b \, )x
\]
\[
74
\]
\[
\begin{align*}
&\frac{(2A \ a \ c + A \ b + 2B \ a \ b)x + (2A \ a \ b + B \ a)x + A \ a}{
5 \ 5 \ 4 \ 4 \ 2 \ 3 \ 3 \ 3 \ 2 \ 2 \ 4 \ 5}
\end{align*}
\]

\[
e^x + 5d \ e \ x + 10d \ e \ x + 10d \ e \ x + 5d \ e \ x + d
\]

Type: Fraction(Polynomial(Integer))

r0:=B*c^2*x/e^5+1/4*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)^2/(e^6*(d+e*x)^4)+
1/3*(c*d^2-b*d*e+a*e^2)*(2*A*e*(2*c*d-b*e)-B*(5*c*d^2-a*e))/
(e^6*(d+e*x)^3)+1/2*(B*(10*c^2*d^3+b*e^2*(3*b*d-a*e)-6*c*d*e*(2*b*d_-
a*e)-A*e*(6*c^2*d^2+b^2*e^2-2*c*e*(3*b*d-a*e)))/(e^6*(d+e*x)^2)+
(d*e*x)-c*(5*B*c*d-2*b*B*e-A*c*e)*log(d+e*x)/e^6

(2)

\[
\begin{align*}
&\frac{(12A \ c + 24B \ b \ c)e - 60B \ c \ d \ e )x}{2 \ 5 \ 2 \ 4 \ 4}
\end{align*}
\]

\[
\begin{align*}
&\frac{(48A \ c + 96B \ b \ c)d \ e - 240B \ c \ d \ e )x}{2 \ 4 \ 2 \ 2 \ 3 \ 3}
\end{align*}
\]

\[
\begin{align*}
&\frac{(72A \ c + 144B \ b \ c)d \ e - 360B \ c \ d \ e )x}{2 \ 2 \ 3 \ 2 \ 2}
\end{align*}
\]

\[
\begin{align*}
&\frac{(48A \ c + 96B \ b \ c)d \ e - 240B \ c \ d \ e)x + (12A \ c + 24B \ b \ c)d \ e}{2 \ 2 \ 3 \ 2 \ 3 \ 2}
\end{align*}
\]

\[
\begin{align*}
&\frac{(12A \ a \ c - 12B \ b )e + (48A \ c + 96B \ b \ c)d \ e - 48B \ c \ d \ e )x}{2 \ 2 \ 3 \ 3 \ 2 \ 2 \ 4}
\end{align*}
\]

\[
\begin{align*}
&\frac{(- 24A \ b - 24B \ a)c - 12B \ a \ b)e + (48A \ c + 96B \ b \ c)d \ e - 48B \ c \ d \ e )x}{2 \ 2 \ 3 \ 3 \ 2 \ 2 \ 4}
\end{align*}
\]

\[
\begin{align*}
&\frac{(- 12A \ a \ c - 6A \ b - 12B \ a \ b)e + ((- 36A \ b - 36B \ a)c - 18B \ b )d \ e}{2 \ 2 \ 3 \ 3 \ 2 \ 3 \ 2}
\end{align*}
\]

\[
\begin{align*}
&\frac{(108A \ c + 216B \ b \ c)d \ e - 252B \ c \ d \ e}{2 \ 2 \ 3 \ 3 \ 2 \ 3 \ 2}
\end{align*}
\]
The text contains mathematical expressions and calculations. The expressions are written in a natural language format, likely related to algebra or calculus. The text also includes comments and commands, indicating that the content might be part of a computer algebra system script or a mathematical proof. The expressions include variables and operations such as addition, multiplication, and division, along with some constants. The text appears to be a continuation of a previous calculation or proof, with references to previous steps and results. The document contains both textual explanations and mathematical notations, with some comments indicating the type of expressions and operations involved.
\( r_0:=1/5*(B*d-A*e)*c*d^2-b*d*e+a*e^2)^2/(e^6*(d+e*x)^5)+1/4*(c*d^2-b*d*e+a*e^2)*(2 A*e*(2*c*d-b*e)-B*(5*c*d^2-e*(3*b*d-a*e)))/((e^6*(d+e*x)^4)+1/3*(B*(10*c^2-d^3+b*e^2*(3*b*d-2*a*e)-6*c*d*e*(2*b*d-a*e)))/\(A*e*(6*c^2*d^2+b^2*e^2-2*c*e*(3*b*d-a*e)))/(e^6*(d+e*x)^3)+1/2*(2*A*c*e*(2*c*d-b*e)-B*(10*c^2-d^2+b^2*e^2-2*c*e*(4*b*d-a*e))/(e^6*(d+e*x)^2)+c*(5*B*c*d-2*b*B*e-A*c*e)/(e^6*(d+e*x)))+B*c^2*log(d+e*x)/e^6\)
-R \(- 12A \, a \, e + (- 6A \, a \, b - 3B \, a)\, d\, e + (- 4A \, a \, c - 2A \, b - 4B \, a \, b)\, d\, e\)
-\R +
-\R \((- 6A \, b - 6B \, a)\, c - 3B \, b\)\, d\, e + (- 12A \, c - 24B \, b \, c)\, d\, e + 137B \, c \, d\)
-\R /
-\R 11 \, 5 \, 10 \, 4 \, 2 \, 9 \, 3 \, 3 \, 8 \, 2 \, 4 \, 7 \, 5 \, 6
-\R 60e \, x + 300d \, e \, x + 600d \, e \, x + 300d \, e \, x + 60d \, e
-\R Type: Expression(Integer)
-\E 173

--S 174 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
-\R Type: Expression(Integer)
--E 174

)clear all

--S 175 of 1035
t0:=(A+B*x)*(a+b*x+c*x^2)^2/(d+e*x)^7
--R
--R (1)
-\R 2 \, 5 \, 2 \, 4 \, 2 \, 3
-\R B \, c \, x + (A \, c + 2B \, b \, c)\, x + ((2A \, b + 2B \, a)\, c + B \, b)\, x
-\R +
-\R 2 \, 2 \, 2 \, 2
-\R (2A \, a \, c + A \, b + 2B \, a \, b)\, x + (2A \, a \, b + B \, a \, )\, x + A \, a
-\R /
-\R 7 \, 7 \, 6 \, 6 \, 2 \, 5 \, 5 \, 3 \, 4 \, 4 \, 4 \, 3 \, 3 \, 5 \, 2 \, 2 \, 6 \, 7
-\R e \, x + 7d \, e \, x + 21d \, e \, x + 35d \, e \, x + 35d \, e \, x + 21d \, e \, x + 7d \, e \, x + d
-\R Type: Fraction(Polynomial(Integer))
--E 175

--S 176 of 1035
r0:=1/6*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)^2/(e^6*(d+e*x)^6)+1/5*(c*d^2--
\R b*d*e+a*e^2)*(2*A*e*(2*c*d-b*e)-B*(5*c*d^2-e*(3*b*d-a*e)))/(e^6*(d+_
\R e*x)^5)+1/4*(B*(10*c^2*d^3+b*e^2*(3*b*d-2*a*e)))/((3*b*d-a*e))^
-\R A*e*(6*c^2*d^2+2*b*d^2-2*c*e*(3*b*d-a*e))/(e^6*(d+e*x)^4)+_
-\R 1/3*(2*A*c*e*(2*c*d-b*e)-B*(10*c^2*d^2+b^2*e^2-2*c*e*(4*b*d-a*e)))/_
-\R (e^6*(d+e*x)^3)+1/2c*(5*B*c*d-2*b*B*e-A*c*e)/(e^6*(d+e*x)^2)^
-\R B*c^2/(e^6*(d+e*x))
--R
--R
--R (2)
-\R 2 \, 5 \, 5 \, 1 \, 2 \, 5 \, 5 \, 2 \, 4 \, 4
-\R - B \, c \, e \, x + ((- A \, c - B \, b \, c)\, e - - B \, c \, d \, e)\, x
-\R 2 \, 2

78
\[\begin{align*}
\text{Type: } & \text{Fraction(Polynomial(Fraction(Integer)))} \\
\end{align*}\]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(A + B x)(a + b x + c x^2)^2}{(d + e x)^8} \]

\[ r_0 := \frac{1}{7}(B d - A e) \frac{(c d^2 - b d e + a e^2)^2}{e^6 (d + e x)^7} + \frac{1}{6}(c d^2 - b d e + a e^2) \frac{(2 A e (2 c d - b e) - B (5 c^2 d - 2 c e (3 b d - a e))^6}{e^6 (d + e x)^6} + \frac{1}{5}(B (10 c^2 d^2 - 3 b e^2 - 2 (3 b d - 2 a e))^6}{e^6 (d + e x)^5} + \frac{1}{4}(2 A c e (2 c d - b e) - B (10 c^2 d^2 - 2 c e^2 (4 b d - a e))^6}{e^6 (d + e x)^4} + \frac{1}{3} c (5 B c d - 2 b B e - A c e) \frac{1/2 B c^2}{(e^6 (d + e x)^3)} - \frac{1}{2} B c^2 \]

\[ \text{Type: Expression(Integer)} \]
\[
\begin{array}{c}
\text{--R} & 6 \\
\text{--R} & * \\
\text{--R} & 3 \\
\text{--R} & x \\
\text{--R} & + \\
\text{--R} & 2 & 1 & 2 & 2 & 5 \\
\text{--R} & \((- - A a c - - A b - - B a b)e) \\
\text{--R} & 5 & 5 & 5 \\
\text{--R} & + \\
\text{--R} & 3 & 3 & 3 & 2 & 4 & 1 & 2 & 2 & 2 & 3 \\
\text{--R} & \(((- - A b - - B a)c - - B b)d e + (- - A c - - B b c)d e) \\
\text{--R} & 10 & 10 & 20 & 5 & 5 \\
\text{--R} & + \\
\text{--R} & 1 & 2 & 3 & 2 \\
\text{--R} & - - B c d e \\
\text{--R} & 2 \\
\text{--R} & * \\
\text{--R} & 2 \\
\text{--R} & x \\
\text{--R} & + \\
\text{--R} & 1 & 1 & 2 & 5 & 2 & 1 & 2 & 2 & 4 \\
\text{--R} & \((- - A a b - - B a)e + (- - A a c - - A b - - B a b)d e) \\
\text{--R} & 3 & 6 & 15 & 15 & 15 \\
\text{--R} & + \\
\text{--R} & 1 & 1 & 1 & 2 & 2 & 3 & 1 & 2 & 2 & 3 & 2 \\
\text{--R} & \(((- - A b - - B a)c - - B b)d e + (- - A c - - B b c)d e) \\
\text{--R} & 10 & 10 & 20 & 15 & 15 \\
\text{--R} & + \\
\text{--R} & 1 & 2 & 4 \\
\text{--R} & - - B c d e \\
\text{--R} & 6 \\
\text{--R} & * \\
\text{--R} & x \\
\text{--R} & + \\
\text{--R} & 1 & 2 & 5 & 1 & 1 & 2 & 4 \\
\text{--R} & - - A a e + (- - A a b - - B a)d e \\
\text{--R} & 7 & 21 & 42 \\
\text{--R} & + \\
\text{--R} & 2 & 1 & 2 & 2 & 2 & 3 \\
\text{--R} & \((- - A a c - - A b - - B a b)d e) \\
\text{--R} & 105 & 105 & 105 \\
\text{--R} & + \\
\text{--R} & 1 & 1 & 1 & 2 & 3 & 2 & 1 & 2 & 2 & 4 \\
\text{--R} & \(((- - A b - - B a)c - - B b)d e + (- - A c - - B b c)d e) \\
\text{--R} & 70 & 70 & 140 & 105 & 105 \\
\text{--R} & + \\
\text{--R} & 1 & 2 & 5 \\
\text{--R} & - - B c d \\
\text{--R} & 42 \\
\text{--R} & / \\
\end{array}
\]
\[-\frac{137 - 126}{215 - 310} + \frac{493}{582} + \frac{67}{134} + 76 + \frac{de}{179}\]

\[d0 := \text{normalize}(t0-D(r0,x))\]

\[(3) 0\]

\[t0 := \frac{(A+Bx)(a+bx+c+x^2)^2}{(d+ex)^9}\]

\[(1)\]

\[Bc x + (Ac + 2Bb c)x + ((2Ab + 2Ba)c + Bb )x\]

\[+ \frac{(2Aa c + Ab + 2Ba b)x + (2Aa b + B a )x + Aa}{9^9 + 36^2 + 9^8 + 36^7 + 9^6 + 36^5 + 9^4 + 36^3 + 9^2 + 36^1 + 9^0}\]

\[r0 := \frac{1}{8}(Bd-Ae)\frac{(c+d^2-b+e+a^2)^2}{(e+6(d+ex)^8) + 1/7(c+d^2-b+e+a^2)^2(a^2e^2)} + \frac{1}{5}(2c^2d^2+b^2e+4^2)\]

\[(2)\]

\[Bc\]

\[3^5 5^4 2^4 1^5 3^2\]

---
--R  - --- B c d
--R    168
--R /
--R  14  8  13  7  2  12  6  3  11  5  4  10  4  5  9  3
--R e x + 8d e x + 28d e x + 56d e x + 70d e x + 56d e x
--R +
--R  6  8  2  7  7  8  6
--R 28d e x + 8d e x + d e
--R                         Type: Fraction(Polynomial(Fraction(Integer)))
--E 182

--S 183 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R                         Type: Expression(Integer)
--E 183

)clear all

--S 184 of 1035
t0:=(A+B*x)*(d+e*x)^m*(a+b*x+c*x^2)^3
--R
--R
--R (1)
--R  3  7  3  2  6  2  2  2  5
--R B c x + (A c + 3B b c )x + ((3A b + 3B a)c + 3B b c)x
--R +
--R  2  2  3  4
--R (3A a c + (3A b + 6B a b)c + B b )x
--R +
--R  2  3  2  3  2  2  2  2
--R ((6A a b + 3B a )c + A b + 3B a b )x + (3A a c + 3A a b + 3B a b)x
--R +
--R  2  3  3
--R (3A a b + B a )x + A a
--R *
--R m
--R (e x + d)
--R                     Type: Expression(Integer)
--E 184

--S 185 of 1035
r0:=-(B*d-A*e)*(c*d^2-2*b*d*e+a*e^2)^3*(d+e*x)^m/(e^8*(1+m))-
    (c*d^2-2*b*d*e+a*e^2)^2*(3*A*e*(2*c*d-b*e)-B*(7*c^2*d^2-6*4*b*d-a*e)))*-
    (d+e*x)^2*(e^8(2+m))-3*(c^2-2*b*d*e+a*e^2)*(B*(7*c^2*d^3-3-
    c*d*e*(8*b*d-3*a*e)+b*e^2*(2*b*d-a*e))-A*e*(5*c^2*d^2+b^2+2*e^2-_
    c*e*(5*b*d-a*e))*d(e*x)^3+m)/(e^8*3+m)-(A*e*(2*c*d-b*e)*_
    (10*c^2*d^2+2*b^2+2*e^2-2*c*e(5*b*d-3*a*e))-B*(35*c^3*d^4-b^2+2*e^3*-

84
\[(d + b \cdot d - 3 \cdot a \cdot e) - 3 \cdot c \cdot 2 \cdot d^2 \cdot e \cdot (2 \cdot b \cdot d - a \cdot e) + 3 \cdot c \cdot e^2 \cdot (10 \cdot b^2 \cdot d^2 - 8 \cdot a \cdot b \cdot d \cdot e + a^2 \cdot e^2) \cdot (d + e \cdot x)^{4 + m} / (e^8 \cdot (4 + m)) - (B \cdot (35 \cdot c^3 \cdot d^3 - b^3 \cdot e^3 + 3 \cdot b \cdot c \cdot e^2 \cdot (5 \cdot b \cdot d - 2 \cdot a \cdot e) - 15 \cdot c^2 \cdot d \cdot e \cdot (3 \cdot b \cdot d - a \cdot e)) - 3 \cdot a \cdot c \cdot e^3 \cdot (5 \cdot c^2 \cdot d^2 - 2 \cdot b \cdot e^2 - c \cdot e^2 \cdot (5 \cdot b \cdot d - a \cdot e) \cdot (d + e \cdot x)^{5 + m} / (e^8 \cdot (5 + m)) - 3 \cdot c \cdot e^3 \cdot (7 \cdot c^2 \cdot d^2 - 2 \cdot b \cdot e^2 - c \cdot e \cdot (6 \cdot b \cdot d - a \cdot e)) \cdot (d + e \cdot x)^{6 + m} / (e^8 \cdot (6 + m)) - c \cdot 2^3 \cdot (7 \cdot B \cdot c \cdot d - 3 \cdot b \cdot B \cdot e - A \cdot c \cdot e) \cdot (d + e \cdot x)^{7 + m} / (e^8 \cdot (7 + m)) + B \cdot c^3 \cdot (d + e \cdot x)^{8 + m} / (e^8 \cdot (8 + m)) \]
\begin{verbatim}
630B c d
* 6
m +
2 2 2
(((1098A b + 1098B a)c + 1098B b c)e +
3 2 3 2
(- 2196A c - 6588B b c )d e + 7686B c d
* 5
m +
2 2 2
(((7020A b + 7020B a)c + 7020B b c)e +
3 2 3 2
(- 14040A c - 42120B b c )d e + 49140B c d
* 4
m +
2 2 2
(((25227A b + 25227B a)c + 25227B b c)e +
3 2 3 2
(- 50454A c - 151362B b c )d e + 176589B c d
* 3
m +
2 2 2
(((50490A b + 50490B a)c + 50490B b c)e +
3 2 3 2
(- 100980A c - 302940B b c )d e + 353430B c d
* 2
m +
2 2 2
(((51432A b + 51432B a)c + 51432B b c)e +
3 2 3 2
(- 102864A c - 308592B b c )d e + 360024B c d
* m +
2 2 2
\end{verbatim}
((20160A b + 20160B a)c + 20160B b c)e
+ 3 2 3 2
(- 40320A c - 120960B b c )d e + 141120B c d
* m + 6
(e x + d)
+ 2 2 3 3
(3A a c + (3A b + 6B a b)c + B b )e
+ 2 2 2 3 2 2
((- 15A b - 15B a)c - 15B b c)d e + (15A c + 45B b c )d e
+ 3 3
- 35B c d
* 7
m
+ 2 2 3 3
(93A a c + (93A b + 186B a b)c + 31B b )e
+ 2 2 2
((- 465A b - 465B a)c - 465B b c)d e
+ 3 2 2 3 3
(465A c + 1395B b c )d e - 1085B c d
* 6
m
+ 2 2 3 3
(1173A a c + (1173A b + 2346B a b)c + 391B b )e
+ 2 2 2
((- 5865A b - 5865B a)c - 5865B b c)d e
+ 3 2 2 3 3
(5865A c + 17595B b c )d e - 13685B c d
* 5
m
+ 2 2 3 3
(7743A a c + (7743A b + 15486B a b)c + 2581B b )e
+ 2 2 2
((- 38715A b - 38715B a)c - 38715B b c)d e
+ 87
\[\begin{align*}
&3 2 2 3 3 \\
&= (38715A c + 116145B b c) d e - 90335B c d \\
&* 4 \\
&+ m \\
&+ 2 2 3 3 \\
&= (28632A a c + (28632A b + 57264B a b) c + 9544B b) e \\
&+ 2 2 2 \\
&= ((-143160A b - 143160B a)c - 143160B b c) d e \\
&+ 3 2 2 3 3 \\
&= (143160A c + 429480B b c) d e - 334040B c d \\
&* 3 \\
&+ m \\
&+ 2 2 3 3 \\
&= (58692A a c + (58692A b + 117384B a b) c + 19564B b) e \\
&+ 2 2 2 \\
&= ((-293460A b - 293460B a)c - 293460B b c) d e \\
&+ 3 2 2 3 3 \\
&= (293460A c + 880380B b c) d e - 684740B c d \\
&* 2 \\
&+ m \\
&+ 2 2 3 3 \\
&= (60912A a c + (60912A b + 121824B a b) c + 20304B b) e \\
&+ 2 2 2 \\
&= ((-304560A b - 304560B a)c - 304560B b c) d e \\
&+ 3 2 2 3 3 \\
&= (304560A c + 913680B b c) d e - 710640B c d \\
&* m \\
&+ 2 2 3 3 \\
&= (24192A a c + (24192A b + 48384B a b) c + 8064B b) e \\
&+ 2 2 2 \\
&= ((-120960A b - 120960B a)c - 120960B b c) d e \\
&+ 3 2 2 3 3 \\
&= (120960A c + 362880B b c) d e - 282240B c d \\
&* 
\end{align*}\]
\[ \begin{align*} &-R \quad m + 5 \\
&-R \quad (e \times + d) \\
&-R \quad + \\
&-R \quad 2 \quad 3 \quad 2 \quad 4 \\
&-R \quad ((6A \ a \ b + 3B \ a \ )c + A \ b + 3B \ a \ b \ )e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 3 \quad 3 \\
&-R \quad (-12A \ a \ c + (-12A \ b - 24B \ a \ b)c - 4B \ b \ )d \ e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 2 \quad 2 \quad 2 \quad 3 \\
&-R \quad ((30A \ b + 30B \ a)c + 30B \ b \ c)d \ e + (-20A \ c - 60B \ b \ c)d \ e \\
&-R \quad + \\
&-R \quad 3 \quad 4 \\
&-R \quad 35B \ c \ d \\
&-R \quad * \\
&-R \quad 7 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad 2 \quad 3 \quad 2 \quad 4 \\
&-R \quad ((192A \ a \ b + 96B \ a \ )c + 32A \ b + 96B \ a \ b \ )e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 3 \quad 3 \\
&-R \quad (-384A \ a \ c + (-384A \ b - 768B \ a \ b)c - 128B \ b \ )d \ e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 2 \\
&-R \quad ((960A \ b + 960B \ a)c + 960B \ b \ c)d \ e \\
&-R \quad + \\
&-R \quad 3 \quad 2 \quad 3 \quad 3 \quad 4 \\
&-R \quad (-640A \ c - 1920B \ b \ c)d \ e + 1120B \ c \ d \\
&-R \quad * \\
&-R \quad 6 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad 2 \quad 3 \quad 2 \quad 4 \\
&-R \quad ((2508A \ a \ b + 1254B \ a \ )c + 418A \ b + 1254B \ a \ b \ )e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 3 \quad 3 \\
&-R \quad (-5016A \ a \ c + (-5016A \ b - 10032B \ a \ b)c - 1672B \ b \ )d \ e \\
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 2 \quad 2 \\
&-R \quad ((12540A \ b + 12540B \ a)c + 12540B \ b \ c)d \ e \\
&-R \quad + \\
&-R \quad 3 \quad 2 \quad 3 \quad 3 \quad 4 \\
&-R \quad (-8360A \ c - 25080B \ b \ c)d \ e + 14630B \ c \ d \\
&-R \quad * \\
&-R \quad 5 \\
&-R \quad m \\
&-R \quad + \\
&-R \quad 2 \quad 3 \quad 2 \quad 4 \\
&-R \quad ((17184A \ a \ b + 8592B \ a \ )c + 2864A \ b + 8592B \ a \ b \ )e \\
\end{align*} \]
\[
\begin{align*}
&\left( -34368A \ a \ c + (-34368A \ b - 68736B \ a \ b) c - 11456B \ b \right) d \ e \\
&\left( 85920A \ b + 85920B \ a \right) c + 85920B \ b \ c \ d e \\
&\left( -57280A \ c - 171840B \ b \ c \right) d \ e + 100240B \ c \ d \ e \\
&\left( 57280A \ b + 57280B \ a \right) c + 57280B \ b \ c d \ e \\
&\left( -219860A \ b + 659580B \ b \ c \right) d \ e + 384755B \ c \ d \ e \\
&\left( 219860A \ c - 659580B \ b \ c \right) d \ e + 384755B \ c \ d \ e \\
&\left( -219860A \ c - 659580B \ b \ c \right) d \ e + 384755B \ c \ d \ e \\
&\left( 699360A \ b + 699360B \ a \right) c + 699360B \ b \ c d \ e \\
&\left( -466240A \ c - 1398720B \ b \ c \right) d \ e + 815920B \ c \ d \ e \\
&\left( 149256A \ b + 74628B \ a \right) c + 24876A \ b + 74628B \ a \ b \ c \ d \ e \\
&\left( -298512A \ b + (298512A \ b - 597024B \ a \ b) c - 99504B \ b \right) d \ e \\
&\left( 298512A \ a \ c + (-298512A \ b - 597024B \ a \ b) c - 99504B \ b \right) d \ e \\
&
\end{align*}
\]
\[
\begin{align*}
(746280A b + 746280B a)c &+ 746280B b c)d e + 870660B c d \\
+ 3 &2 3 &3 4 \\
(- 497520A c - 1492560B b c)d e &+ 870660B c d \\
* &m \\
+ &2 3 2 4 \\
(60480A a b &+ 30240B a)c + 10080A b + 30240B a b)d e \\
+ &2 2 3 3 \\
(- 120960A a c &+ (- 120960A b - 241920B a b)c - 40320B b )d e \\
+ &3 3 3 3 \\
(302400A b + 302400B a)c &+ 302400B b c)d e \\
+ &2 2 3 2 3 \\
(- 201600A a c &- 604800B b c)d e + 352800B c d \\
* &m + 4 \\
(e x &+ d) \\
+ &2 2 2 5 \\
(3A a c &+ 3A a b + 3B a b)e \\
+ &2 3 2 4 \\
((- 18A a b &- 9B a )c - 3A b - 9B a b)d e \\
+ &2 2 3 2 3 \\
(18A a c &+ (18A b + 36B a b)c + 6B b)d e \\
+ &3 5 \\
&- 21B c d \\
* &m \\
+ &2 2 2 5 \\
(99A a c &+ 99A a b + 99B a b)e \\
+ &2 3 2 4 \\
((- 594A a b &- 297B a )c - 99A b - 297B a b)d e \\
+ &2 2 3 2 3 \\
(594A a c &+ (594A b + 1188B a b)c + 198B b)d e \\
+ &2 2 3 2 \\
\end{align*}
\]
\[\begin{align*}
&((-990A \ b - 990B \ a)c - 990B \ b \ c)d \ e + \\
&3 \quad 2 \quad 4 \quad 3 \quad 5 \\
&(495A \ c + 1485B \ b \ c)d \ e - 693B \ c \ d \\
&* \\
&6 \\
&m \\
&+ \\
&
\end{align*}\]
\[ \begin{align*}
&+ 2^2 2^3 3^2 3^2 \\
&+ (231552A a c + (231552B a b + 463104B a b) c + 77184B b) d e \\
&+ (-385920B a - 385920A a c - 385920B b) c d e \\
&+ (192960A c + 578880B b c) d e - 270144B c d \\
&* 3 \\
&* 3^m \\
&+ \]

\[ \begin{align*}
&+ 2^2 2^2 2^5 \\
&+ (86076A a c + 86076A a b + 86076B a b) e \\
&+ (-516456A a b - 516456B a c - 86076B b) c d e \\
&+ (430380A c + 1291140B b c) d e - 602532B c d \\
&* 2 \\
&* 2^m \\
&+ \]

\[ \begin{align*}
&+ 2^2 2^2 2^5 \\
&+ (96144A a c + 96144A a b + 96144B a b) e \\
&+ (-576864A a b - 576864B a c - 96144B b) c d e \\
&+ (480720A c + 1442160B b c) d e - 673008B c d \\
&* m \\
&+ \]

\[ \begin{align*}
&+ 2^2 2^2 2^5 \\
&+ (40320A a c + 40320A a b + 40320B a b) e \\
&+ \]

93
\[
\begin{align*}
&2 
\quad ( - 241920A \ a \ b - 120960B \ a \ b )c - 40320A \ b - 120960B \ a \ b )d \ e \\
&\quad + \\
&2 
\quad (241920A \ a \ c + (241920A \ b + 483840B \ a \ b )c + 80640B \ b )d \ e \\
&\quad + \\
&2 
\quad (( - 403200A \ b - 403200B \ a )c - 403200B \ b \ b )d \ e \\
&\quad + \\
&3 
\quad (201600A \ c + 604800B \ b \ c )d \ e - 282240B \ c \ d \\
&\quad * \\
&\quad m + 3 \\
&\quad (e \ x + d) \\
&\quad + \\
&2 
\quad (3A \ a \ b + B \ a \ )c + ( - 6A \ a \ c - 6A \ a \ b - 6B \ a \ b )d \ e \\
&\quad + \\
&2 
\quad ((18A \ a \ b + 9B \ a \ )c + 3A \ b + 9B \ a \ b )d \ e \\
&\quad + \\
&2 
\quad (- 12A \ a \ c + ( - 12A \ b - 24B \ a \ b )c - 4B \ b )d \ e \\
&\quad + \\
&2 
\quad ((15A \ b + 15B \ a )c + 15B \ b \ c )d \ e + ( - 6A \ c - 18B \ b \ c )d \ e \\
&\quad + \\
&3 
\quad 7B \ c \ d \\
&\quad * \\
&\quad 7 \\
&\quad m \\
&\quad + \\
&2 
\quad (102A \ a \ b + 34B \ a \ )c + ( - 204A \ a \ c - 204A \ a \ b - 204B \ a \ b )d \ e \\
&\quad + \\
&2 
\quad ((612A \ a \ b + 306B \ a \ )c + 102A \ b + 306B \ a \ b )d \ e \\
&\quad + \\
&2 
\quad (- 408A \ a \ c + ( - 408A \ b - 816B \ a \ b )c - 136B \ b \ )d \ e \\
&\quad + \\
&2 
\quad ((510A \ b + 510B \ a \ )c + 510B \ b \ c )d \ e + ( - 204A \ c - 612B \ b \ c )d \ e \\
&\quad + \\
&3 
\quad 238B \ c \ d \\
&\quad * \\
&\quad 6 \\
&\quad m \\
\end{align*}
\]
\[ \begin{align*}
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 6 \\
\text{--R} & \quad (1434A \ a \ b + 478B \ a )e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 2 \quad 5 \\
\text{--R} & \quad (- 2868A \ a \ c - 2868A \ a \ b - 2868B \ a \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 2 \quad 2 \quad 3 \\
\text{--R} & \quad ((8604A \ a \ b + 4302B \ a \ b)c + 1434A \ b + 4302B \ a \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 3 \quad 3 \quad 3 \\
\text{--R} & \quad (- 5736A \ a \ c + (- 5736A \ b - 11472B \ a \ b)c - 1912B \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 4 \quad 2 \\
\text{--R} & \quad ((7170A \ b + 7170B \ a)c + 7170B \ b \ c)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 3 \quad 2 \quad 5 \quad 3 \quad 6 \\
\text{--R} & \quad (- 2868A \ c + 8604B \ b \ c)d \ e + 3346B \ c \ d \\
\text{--R} & \quad * \\
\text{--R} & \quad 5 \\
\text{--R} & \quad m \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 6 \\
\text{--R} & \quad (10740A \ a \ b + 3580B \ a \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 2 \quad 5 \\
\text{--R} & \quad (- 21480A \ a \ c - 21480A \ a \ b - 21480B \ a \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 3 \quad 2 \quad 3 \\
\text{--R} & \quad ((64440A \ a \ b + 32220B \ a \ b)c + 10740A \ b + 32220B \ a \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 3 \quad 3 \quad 3 \\
\text{--R} & \quad (- 42960A \ a \ c + (- 42960A \ b - 85920B \ a \ b)c - 14320B \ b \ c)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 4 \quad 2 \\
\text{--R} & \quad ((53700A \ b + 53700B \ a)c + 53700B \ b \ c)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 3 \quad 2 \quad 5 \quad 3 \quad 6 \\
\text{--R} & \quad (- 21480A \ c + 64440B \ b \ c)d \ e + 25060B \ c \ d \\
\text{--R} & \quad * \\
\text{--R} & \quad 4 \\
\text{--R} & \quad m \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 6 \\
\text{--R} & \quad (45867A \ a \ b + 15289B \ a \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 2 \quad 2 \quad 5 \\
\text{--R} & \quad (- 91734A \ a \ c - 91734A \ a \ b - 91734B \ a \ b)d \ e \\
\text{--R} & \quad + \\
\text{--R} & \quad 2 \quad 3 \quad 2 \quad 2 \quad 4 \\
\end{align*} \]
\[(275202A \ a \ b + 137601B \ a \ c + 45867A \ b + 137601B \ a \ b) \cdot d \cdot e
\]

\[+ (\ -183468A \ a \ c + (-183468A \ b - 366936B \ a \ b) \cdot c - 61156B \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 3 \quad 3 \quad 3\]

\[((-229335A \ b + 229335B \ a) \cdot c + 229335B \ b \ c) \cdot d \cdot e\]

\[+ 3 \quad 2 \quad 5 \quad 3 \quad 6\]

\[(-91734A \ c - 275202B \ b \ c) \cdot d \cdot e + 107023B \ c \cdot d\]

\[\star_{3}\]

\[m\]

\[+\]

\[2 \quad 3 \quad 6\]

\[(110118A \ a \ b + 36706B \ a \ c) \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 2 \quad 5\]

\[((-220236A \ a \ c - 220236A \ a \ b - 220236B \ a \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 2 \quad 4\]

\[((660708A \ a \ b + 330354B \ a \ c + 110118A \ b + 330354B \ a \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 2 \quad 2 \quad 4 \quad 3 \quad 3 \quad 3\]

\[((-440472A \ b + 220236A \ c - 220236B \ a \ c - 146824B \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 4 \quad 2\]

\[((550590A \ b + 550590B \ a) \cdot c + 550590B \ b \ c) \cdot d \cdot e\]

\[+ 3 \quad 2 \quad 5 \quad 3 \quad 6\]

\[(-220236A \ c - 660708B \ b \ c) \cdot d \cdot e + 256942B \ c \cdot d\]

\[\star_{2}\]

\[m\]

\[+\]

\[2 \quad 3 \quad 6\]

\[(134136A \ a \ b + 44712B \ a \ c) \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 2 \quad 5\]

\[((-268272A \ a \ c - 268272A \ a \ b - 268272B \ a \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 2 \quad 4\]

\[((804816A \ a \ b + 402408B \ a \ c + 134136A \ b + 402408B \ a \ b) \cdot d \cdot e\]

\[+ 2 \quad 2 \quad 2 \quad 3\]

\[((-536544A \ a \ c + (-536544A \ b - 1073088B \ a \ c - 178848B \ b) \cdot d \cdot e\]

\[\star_{3}\]

\[m\]

\[+\]

\[96\]
\begin{align*}
&2242 \\
&((670680A \ b + 670680B \ a)c + 670680B \ b \ c)d e \\
&+ 32536 \\
&(- 268272A \ c - 804816B \ b \ c)d e + 312984B \ c \ d \\
&* \ m \\
&+ \\
&236 \\
&(60480A \ a \ b + 20160B \ b \)e \\
&+ \\
&2225 \\
&(- 120960A \ a \ c - 120960A \ a \ b - 120960B \ a \ b)d e \\
&+ \\
&2333 \\
&((362880A \ a \ b + 181440B \ a \ c + 60480A \ b + 181440B \ a \ b)d e \\
&+ \\
&222 \\
&(- 241920A \ a \ c - (- 241920A \ b - 483840B \ a \ b)c - 80640B \ b \ )d e \\
&+ \\
&2242 \\
&((302400A \ a \ b + 302400B \ a \ c + 302400B \ b \ c)d e \\
&+ \\
&32536 \\
&(- 120960A \ c - 362880B \ b \ c)d e + 141120B \ c \ d \\
&* \ m + 2 \\
&(e x + d) \\
&+ \\
&3723622225 \\
&A \ a \ e + (- 3A \ a \ b - B \ a \ )d e + (3A \ a \ c + 3A \ a \ b + 3B \ a \ b \ )d e \\
&+ \\
&2334 \\
&((- 6A \ a \ b - 3B \ a \ )c - A \ b - 3B \ a \ b \ )d e \\
&+ \\
&22343 \\
&(3A \ a \ c + (3A \ b + 6B \ a \ b \ )c + B \ b \ )d e \\
&+ \\
&225232637 \\
&((- 3A \ b - 3B \ a \ c - 3B \ b \ c)d e + (A \ c + 3B \ b \ c \ )d e - B \ c \ d \\
&* \\
&7 \\
&\ m \\
&+ \\
&37236 \\
&35A \ a \ e + (- 105A \ a \ b - 35B \ a \ )d e \\
&+ \\
&2225 \\
&(105A \ a \ c + 105A \ a \ b + 105B \ a \ b \ )d e \\
&+ \\

97
\end{align*}
\[
\begin{align*}
& (-210A \ a \ b - 105B \ a \ b) c - 35A \ b - 105B \ a \ b d e + \\
& (105A \ a \ c + (105A \ b + 210B \ a \ b) c + 35B \ b) d e + \\
& (-105A \ b - 105B \ a \ c - 105B \ b \ c) d e + (35A \ c + 105B \ b \ c) d e + \\
& 37 - 35B \ c \ d \times m + \\
& (-3066A \ a \ b - 1533B \ a \ b c - 511A \ b - 1533B \ a \ b) d e + \\
& (1533A \ a \ c + 1533A \ b + 3066B \ a \ b) c + 511B \ b \ c) d e + \\
& (-1533A \ b - 1533B \ a \ c - 1533B \ b \ c) d e + (511A \ c + 1533B \ b \ c) d e - 511B \ c \ d \times m + \\
& (24150A \ a \ b - 12075B \ a \ b \ c) - 4025A \ b - 12075B \ a \ b) d e + \\
& (12075A \ a \ c + 12075A \ b + 24150B \ a \ b) c + 4025B \ b \ c) d e + \\
& (-12075A \ b - 12075B \ a \ c - 12075B \ b \ c) d e
\end{align*}
\]
\begin{verbatim}
--R 69264A a e + (- 207792A a b - 69264B a )d e
--R +
--R 2 \quad 2 \quad 2 \quad 2 \quad 5
--R (207792A a c + 207792A a b + 207792B a b)d e
--R +
--R 2 \quad 3 \quad 2 \quad 3 \quad 4
--R ((- 415584A a b - 207792B a )c - 69264A b - 207792B a b)d e
--R +
--R 2 \quad 2\quad 3 \quad 4 \quad 3
--R (207792A a c + (207792A b + 415584B a b)c + 69264B b )d e
--R +
--R 2 \quad 2 \quad 5 \quad 2
--R ((- 207792A b - 207792B a)c - 207792B b c)d e
--R +
--R 3 \quad 2 \quad 6 \quad 3 \quad 7
--R (69264A c + 207792B b c )d e - 69264B c d
--R *
--R m
--R +
--R 3 \quad 7 \quad 2 \quad 3 \quad 6
--R 40320A a e + (- 120960A a b - 40320B a )d e
--R +
--R 2 \quad 2 \quad 2 \quad 2 \quad 5
--R (120960A a c + 120960A a b + 120960B a b)d e
--R +
--R 2 \quad 3 \quad 2 \quad 3 \quad 4
--R ((- 241920A a b - 120960B a )c + 40320A b - 120960B a b)d e
--R +
--R 2 \quad 2 \quad 3 \quad 4 \quad 3
--R (120960A a c + (120960A b + 241920B a b)c + 40320B b )d e
--R +
--R 2 \quad 2 \quad 5 \quad 2
--R ((- 120960A b - 120960B a)c - 120960B b c)d e
--R +
--R 3 \quad 2 \quad 6 \quad 3 \quad 7
--R (40320A c + 120960B b c )d e - 40320B c d
--R *
--R (e x + d)
--R /
--R 8 \quad 8 \quad 8 \quad 6 \quad 8 \quad 5 \quad 8 \quad 4 \quad 8 \quad 3 \quad 8 \quad 2
--R e m + 36e m + 546e m + 4536e m + 22449e m + 67284e m + 118124e m
--R +
--R 8 \quad 8
--R 109584e m + 40320e
--R Type: Expression(Integer)
--E 185

--S 186 of 1035
\end{verbatim}
t0:=(A+B*x)*(d+e*x)^5*(a+b*x+c*x^2)^3

B c e x + ((A c + 3B b c )e + 5B c d e )x

((3A b + 3B a)c + 3B b c)e + (5A c + 15B b c )d e + 10B c d e )x

(3A a c + (3A b + 6B a b)c + B b )e

(((3A b + 15B a)c + 15B b c)d e + (10A c + 30B b c )d e + 10B c d e )x

(6A a b + 3B a )c + A b + 3B a b )e

((15A a c + (15A b + 30B a b)c + 5B b )d e

(30A b + 30B a)c + 30B b c)d e + (10A c + 30B b c )d e + 5B c d e

(3A a c + 3A a b + 3B a b)e

((30A a b + 15B a )c + 5A b + 15B a b )d e

(30A a c + (30A b + 60B a b)c + 10B b )d e

(30A a c + (30A b + 60B a b)c + 10B b )d e

2 2 3 2 3 2 5

2 2 2 3 2 3 4

2 2 3 2 3 2 4

2 3 4 3 2 3 5

101
---R  (((30A a b + 30B a)c + 30B b c)d e + (5A c + 15B b c )d e + B c d
---R  *
---R  7
---R  x
---R  +
---R  2 3 5 2 2 2 4
---R  (3A a b + B a )e + (15A a c + 15A a b + 15B a b )d e
---R  +
---R  2 3 2 2 3
---R  (60A a b + 30B a)c + 10A b + 30B a b )d e
---R  +
---R  2 2 3 3 2
---R  (30A a c + (30A b + 60B a b)c + 10B b )d e
---R  +
---R  2 2 4 3 2 5
---R  ((15A b + 15B a)c + 15B b c)d e + (A c + 3B b c )d
---R  *
---R  6
---R  x
---R  +
---R  3 5 2 3 4 2 2 2 2 3
---R  A a e + (15A a b + 5B a )d e + (30A a c + 30A a b + 30B a b)d e
---R  +
---R  2 3 2 3 2
---R  (60A a b + 30B a)c + 10A b + 30B a b )d e
---R  +
---R  2 2 3 4
---R  (15A a c + (15A b + 30B a b)c + 5B b )d e
---R  +
---R  2 2 5
---R  ((3A b + 3B a)c + 3B b c)d
---R  *
---R  5
---R  x
---R  +
---R  3 4 2 3 2 3 2 2 2 3 2
---R  5A a d e + (30A a b + 10B a )d e + (30A a c + 30A a b + 30B a b)d e
---R  +
---R  2 3 2 4
---R  ((30A a b + 15B a)c + 5A b + 15B a b )d e
---R  +
---R  2 2 3 5
---R  (3A a c + (3A b + 6B a b)c + B b )d
---R  *
---R  4
---R  x
---R  +
---R  3 2 3 2 3 3 2 2 2 2 4
---R  10A a d e + (30A a b + 10B a )d e + (15A a c + 15A a b + 15B a b)d e
---R  +
\[-\frac{1}{6} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^6 / e^8 -
\frac{1}{7} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^7 / e^8 \cdot 3 / (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^8 / e^8 -
\frac{3}{8} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^9 / e^8 -
\frac{1}{9} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^10 / e^8 -
\frac{3}{11} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^11 / e^8 -
\frac{1}{12} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^12 / e^8 +
\frac{1}{13} (a^2 d - b^2 e + a^2 e^2 \cdot 3 d + e x)^13 / e^8\]
\[-R \left((- A \ a \ b + - B \ a) \ c + - B \ b \ c\right) \ d \ e + (A \ c + 3B \ b \ c \ )d \ e + B \ c \ d \ e\]

\[-R \left((- A \ a \ b + - B \ a) \ c + - A \ b + - B \ a \ b\right) \ e\]

\[-R \left((- A \ a \ c + (- A b + -- B a) b) c + - B b \ b\right) \ d \ e\]

\[-R \left((- A b + -- B a) b + (- A c + -- B b c) d \ e\right)\]

\[-R \left((- A b + -- B a) c + -- B b \ c\right) \ d \ e + (A \ c + 3B \ b \ c \ )d \ e\]

\[-R \left((- A a \ b + - B a) c + - A b + - B a \ b\right) \ e\]

\[-R \left((- A a \ c + (- A b + -- B a) b) c + - B b \ b\right) \ d \ e\]

\[-R \left((- A b + -- B a) b + (- A c + -- B b c) d \ e\right)\]

\[-R \left((- A a \ c + - A a \ b + - B a \ b\right) \ e\]

\[-R \left((- A a \ c + (- A b + -- B a) b) c + - B b \ b\right) \ d \ e\]

\[-R \left((- A b + -- B a) b + (- A c + -- B b c) d \ e\right)\]

\[-R \left((- A a \ b + - B a) c + - A b + - B a \ b\right) \ e\]

\[-R \left((- A a \ c + (- A b + -- B a) b) c + - B b \ b\right) \ d \ e\]

\[-R \left((- A b + -- B a) b + (- A c + -- B b c) d \ e\right)\]

\[-R \left((- A a \ b + - B a) b + (- A b + -- B a) b\right) \ d \ e\]

\[-R \left((- A a \ c + (- A b + -- B a) b) c + - B b \ b\right) \ d \ e\]

\[-R \left((- A b + -- B a) b + (- A c + -- B b c) d \ e\right)\]
---R 7 7 7 7 7 7
---R +
---R 60 30 2 10 3 30 2 2 11
---R ( (-- A a b + -- B a )c + -- A b + -- B a b )d e
---R 7 7 7 7
---R +
---R 30 2 30 2 60 10 3 3 10
---R ( -- A a c + ( -- A b + -- B a b )c + -- B b )d e
---R 7 7 7 7
---R +
---R 15 15 2 15 2 4 9 1 3 3 2 5 8
---R ( ( -- A b + -- B a )c + -- B b c )d e + ( -- A c + -- B b c )d e
---R 7 7 7 7 7
---R *
---R 7
---R x
---R +
---R 1 3 13 5 2 5 3 12
---R - A a e + ( -- A a b + -- B a )d e
---R 6 2 6
---R +
---R 2 2 2 2 11
---R ( 5A a c + 5A a b + 5B a b )d e
---R +
---R 2 5 3 2 3 10
---R ( ( 10A a b + 5B a )c + -- A b + 5B a b )d e
---R 3
---R *
---R 5 2 5 2 5 3 4 9
---R ( -- A a c + ( -- A b + 5B a b )c + -- B b )d e
---R 2 2 6
---R +
---R 1 1 2 1 2 5 8
---R ( ( -- A b + -- B a )c + -- B b c )d e
---R 2 2 2
---R *
---R 6
---R x
---R +
---R 3 12 2 3 2 11 2 2 2 2 3 10
---R A a d e + ( 6A a b + 2B a )d e + ( 6A a c + 6A a b + 6B a b )d e
---R +
---R 3 2 3 2 4 9
---R ( ( 6A a b + 3B a )c + A b + 3B a b )d e
---R +
---R 3 2 3 2 6 1 3 5 8
---R ( -- A a c + ( -- A b + -- B a b )c + -- B b )d e
---R 5 5 5 5
---R *
---R 5

105
(- (A a b + - B a )c + - A b + - B a b )d e

(- A a d e + (5A a b + - B a )d e + (A a c + A a b + B a b)d e )x

(10 3 10 2 5 3 4 9 2 2 2 5 8)

((- A a b + - B a )d e + (- A a c + - A a b + - B a b)d e )x + A a d e x + - A a d e

((- - A a b - --- B a )c - --- A b - --- B a b )d e

((- --- A b - --- B a)c - --- B b c)d e

((--- A c + ----- B b c)d e - ----- B c d

Type: Fraction(Polynomial(Fraction(Integer)))
d0 := normalize(t0-D(r0,x))

\[
\begin{align*}
\text{Type: Expression(Integer)}
\end{align*}
\]

clear all

t0 := (A+B*x)*(d+e*x)^4*(a+b*x+c*x^2)^3

\[
\begin{align*}
\text{Type: Expression(Integer)}
\end{align*}
\]
\[(12A b + 12B a)c + 12B b c)d e + (A c + 3B b c )d + (12A b + 12B a)b + 12B a b)d e + (36A a b + 18B a )c + 6A b + 18B a b )d e + (24A a b + 12B a )c + 4A b + 12B a b )d e + (3A b + 3B a)c + 3B b c)d + (3A a b + B a )e + (12A a c + 12A a b + 12B a b)d e + (24A a b + 12B a )c + 4A b + 12B a b )d e + (6A a b + 3B a )c + A b + 3B a b )d x + A a d \]

Type: Polynomial(Integer)

108
\begin{align*}
r_0 &= -1/5*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)^3*(d+e*x)^5/e^8-1/6*(c*d^2-b*d*e+a*e^2)^2*(3*A*e*(2*c*d-b*e)-B*(7*c^2*d^3-c*d*e*(8*b*d-3*a*e)+b*e^2*(2*b*d-a*e)-A*e*(5*c^2*d^2-2*b^2*e^2-2*c*e*(5*b*d-a*e)))*(d+e*x)^7/e^8-1/8*(A*e*(2*c*d-b*e)*(10*c^2*d^2-3*d*e^2-2*c*e*(5*b*d-3*a*e))-B*(35*c^3*d^3-3*b^3*e^3+3*b*c*e^2*(5*b*d-2*a*e)-15*c^2*d*e*(3*b*d-a*e))-3*A*c*e*(5*c^2*d^2-2*b^2*e^2-c*e)*(5*b*d-a*e)))*(d+e*x)^9/e^8-3/10*(c*b*e-A*c*e)+(d+e*x)^11/e^8+1/12*(c*b*c^3*(d+e*x)^12/e^8
\end{align*}
--R 3 2 3 2 1 3 11
--R (\(- A \ a \ c + (- A \ b + 3B \ a \ b)\)c + - B \ b \)d e
--R 2 2 2
--R +
--R 9 9 2 9 2 2 10 1 3 3 2 3 9
--R ((- A b + - B a)c + - B b c)d e + (- A c + - B b c)d e
--R 4 4 4 2 2
--R +
--R 1 3 4 8
--R - B \ c \ d \ e
--R 8
--R *
--R 8
--R x
--R +
--R 3 2 3 2 3 2 12
--R (\(- A \ a \ c + - A \ a \ b + - B \ a b)\)e
--R 7 7 7
--R +
--R 24 12 2 4 3 12 2 11
--R ((\(- A \ a \ b + - B \ a \)c + - A b + - B a b)\)d e
--R 7 7 7
--R +
--R 18 2 18 2 36 6 3 2 10
--R (\(- A \ a \ c + (- A b + - B a b)\)c + - B \ b \)d e
--R 7 7 7 7
--R +
--R 12 12 2 12 2 3 9 1 3 3 2 4 8
--R ((\(- A b + - B a \)c + - B b c)\)d e + (- A c + - B b c)d e
--R 7 7 7 7 7
--R *
--R 7
--R x
--R +
--R 1 2 1 3 12 2 2 2 2 11
--R (\(- A a b + - B a \)\)e + (2A a c + 2A a b + 2B a b)\)d e
--R 2 6
--R +
--R 2 3 2 2 10
--R ((6A a b + 3B a )\)c + A b + 3B a b\)d e
--R +
--R 2 2 2 3 3 9
--R (2A a c + (2A b + 4B a b)c + - B b \)d e
--R 3
--R +
--R 1 1 2 1 2 4 8
--R ((\(- A b + - B \ a \)c + - B b c)\)d e
--R 2 2 2
--R *
--R 6

110
--R 210 210 105 630
--R +
--R 1 1 2 1 2 10 2 1 3 1 2 11
--R ((- --- A b - --- B a)c - --- B b c)d e + (--- A c + --- B b c )d e
--R 420 420 420 2310 770
--R +
--R 1 3 12
--R - ---- B c d
--R 3960
--R / 8
--R e
--R Type: Fraction(Polynomial(Fraction(Integer)))
--E 191

--S 192 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 192

)clear all

--S 193 of 1035
t0:=(A+B*x)*(d+e*x)^3*(a+b*x+c*x^2)^3
--R
--R
--R (1)
--R 3 3 10 3 2 3 3 2 9
--R B c e x + ((A c + 3B b c )e + 3B c d e )x
--R +
--R 2 2 3 3 2 2 3 2 8
--R (((3A b + 3B a)c + 3B b c)e + (3A c + 9B b c )d e + 3B c d e)x
--R +
--R 2 2 3 3 2 2 2 2 2
--R (3A a c + (3A b + 6B a b)c + B b e + ((9A b + 9B a)c + 9B b c)d e
--R +
--R 3 2 2 3 3
--R (3A c + 9B b c )d e + B c d
--R *
--R 7
--R x
--R +
--R 2 3 2 3
--R ((6A a b + 3B a )c + A b + 3B a b )e
--R +
--R 2 2 3 2
--R (9A a c + (9A b + 18B a b)c + 3B b )d e
Type: Polynomial(Integer)

$$r_0 := -\frac{1}{4} * (B * d - A * e) * (c * d^2 - b * d * e + a * e^2) - 3 * (d + e) * x^4 / e - 1 / 5 * (c * d^2 - b * d * e + \_193$$

193 of 1035
+-R  9  9  2  9  2  2  9  1  3  3  2  3  8
+-R  ((-A b + -B a)c + -B b c)d e + (-A c + -B b c)d e
+-R  7  7  7  7  7
+-R  *  7
+-R  x
+-R  1  2  1  2  1  2  11
+-R  (-A a c + -A a b + -B a b)e
+-R  2  2  2
+-R  +
+-R  3  2  1  3  3  2  10
+-R  ((3A a b + -B a)c + -A b + -B a b)d e
+-R  2  2  2
+-R  +
+-R  3  2  3  2  1  3  2  9
+-R  (-A a c + (-A b + 3B a b)c + -B b)d e
+-R  2  2  2
+-R  +
+-R  1  1  2  1  2  3  8
+-R  ((-A b + -B a)c + -B b c)d e
+-R  2  2  2
+-R  *
+-R  6
+-R  x
+-R  +
+-R  3  2  1  3  11  9  2  9  2  9  2  10
+-R  (-A a b + -B a )e + (-A a c + -A a b + -B a b)d e
+-R  5  5  5  5  5
+-R  +
+-R  18  9  2  3  3  9  2  2  9
+-R  ((--A a b + -B a)c + -A b + -B a b)d e
+-R  5  5  5  5  5
+-R  +
+-R  3  2  3  2  6  1  3  3  8
+-R  (-A a c + (-A b + -B a b)c + -B b)d e
+-R  5  5  5  5  5
+-R  *
+-R  5
+-R  x
+-R  +
+-R  1  3  11  9  2  3  3  10
+-R  -A a e + (-A a b + -B a )d e
+-R  4  4  4
+-R  +
+-R  9  2  9  2  9  2  2  9
+-R  (-A a c + -A a b + -B a b)d e
+-R  4  4  4
+-R  +

115
The text contains mathematical expressions and calculations, likely related to polynomial or algebraic operations. The expressions are in a format that suggests they are being processed by a computer algebra system. The text includes commands and results from a computational process, indicated by the use of commands like `)(clear all)`. The expressions involve variables such as `a`, `b`, `c`, and `d`, and the calculations are performed with operations like addition, multiplication, and normalization. The final result is a fraction, which is further divided by 8, and the type of the final expression is specified as a fraction of polynomials.
t0:=(A+B*x)*(d+e*x)^2*(a+b*x+c*x^2)^3
--R
--R (1)
--R
--R 3 2 9 3 2 2 3 8
--R B c e x + ((A c + 3B b c )e + 2B c d e)x
--R +
--R 2 2 2 3 2 3 2 7
--R (((3A b + 3B a)c + 3B b c)e + (2A c + 6B b c )d e + B c d )x
--R +
--R 2 2 3 2 2 2
--R (3A a c + (3A b + 6B a b)c + B b )e + ((6A b + 6B a)c + 6B b c)d e
--R +
--R 3 2 2
--R (A c + 3B b c )d
--R *
--R 6
--R x
--R +
--R 2 3 2 2
--R ((6A a b + 3B a )c + A b + 3B a b)e
--R +
--R 2 2 3 2 2 2
--R (6A a c + (6A b + 12B a b)c + 2B b d e + ((3A b + 3B a)c + 3B b c)d
--R *
--R 5
--R x
--R +
--R 2 2 2 2
--R (3A a c + 3A a b + 3B a b)e
--R +
--R 2 3 2
--R (((12A a b + 6B a )c + 2A b + 6B a b )d e
--R +
--R 2 2 3 2
--R (3A a c + (3A b + 6B a b)c + B b )d
--R *
--R 4
--R x
--R +
--R 2 3 2 2 2
--R (3A a b + B a )e + (6A a c + 6A a b + 6B a b)d e
--R +
--R 2 3 2 2
--R ((6A a b + 3B a )c + A b + 3B a b)d
--R *
--R 3
--R x
--R +
--R 3 2 2 3 2 2 2 2 2
r0 := a^3*A*d^2*x+1/2*a^2*d*(3*A*b*d+a*B*d+2*a*A*e)*x^2+1/3*a*(a*B*d_*
(3*b*d+2*a*e))+A*(3*b^2*d^2+6*a*b*d*e+a*(3*c*d^2+a*e^2)))*x^3+1/4*(A*_
(b^3*d^2+6*a*b^2*d^2+6*a^2*2*c*d^2+3*a*b*(2*c*d^2+a*e^2)))+a*B_*
(3*b^2*d^2+6*a*b*d*e+a*(3*c*d^2+a*e^2)))*x^4+1/5*(b^3*d^2(B*d^2+a*A*e)+_*
3*b^2*(A*c*d^2+2*a*B*d*e+a*A*e^2)+3*a*c*(A*c*d^2+2*a*B*d*e+a*A*e^2)+_*
3*a*b*(2*B*c*d^2+4*a*c*d^2+a*A*e^2)+3*b^2*(B*c*d^2+2*a*B*c*d^2+a*B*e^2)+_*
3*a*c*(B*c*d^2+2*a*B*c*d^2+a*B*e^2))*x^5+1/6*(b^3*B*e^2+3*b^2*c*e_*
(2*B*d+a*e)+c^2*(A*c*d^2+6*a*B*d*e+3*a*A*e^2)+3*b*c*(B*c*d^2+2*B*c*d^2+_*
2*a*B*e^2)))*x^6+1/7*(b^3*B*e^2+3*b^2*c*e^2*(2*b*d+a*e))*x^7+1/8*c^2*(A*c*e^2(2*c*d^3+3*b*e)+B*(c^2*d^2+2*b^2+2*e^2)+_*
3*c*e^2(2*b*d+a*e))*x^8+1/9*c^2*e^2(2*B*c*d^3+3*b*B*e+A*c*e)*x^9+_*
1/10*B*c^3*e^2*x^10

---

---E 196

---S 197 of 1035

--R Type: Polynomial(Integer)
\[
\begin{align*}
(3) & \quad 0 \\
\text{Type: Polynomial(Fraction(Integer))} \\
\text{E 197} \\
\text{S 198 of 1035} \\
d0:=\text{normalize}(t0-D(r0,x)) \\
\text{R} \\
\text{R} \\
(3) & \quad 0 \\
\text{Type: Expression(Integer)} \\
\text{E 198} \\
)\text{clear all} \\
\text{S 199 of 1035}
\end{align*}
\]
\[ t_0 := (A + Bx) (d + ex) (a + b + c + x^2)^3 \]

\[ r_0 := a^3A \cdot d \cdot x + \frac{1}{2} \cdot a^2 \cdot (3A + b + aB + d + aA + e) \cdot x^2 + \frac{1}{3} \cdot a \cdot (aB + 3A + b + d + aA + e) \cdot x^3 + \frac{1}{4} \cdot (3A + B + 3A + b + d + aA + e) \cdot x^4 + \frac{1}{5} \cdot (b + 3A + B + 3A + b + d + aA + e) \cdot x^5 + \frac{1}{6} \cdot (b + 3A + B + 3A + b + d + aA + e) \cdot x^6 + \frac{1}{7} \cdot c \cdot (3A + b + d + 3A + b + e + 3A + c + e) \cdot x^7 + \frac{1}{8} \cdot c \cdot (3A + b + d + 3A + b + e + 3A + c + e) \cdot x^8 + \frac{1}{9} \cdot B \cdot c^3 \cdot e \cdot x^9 \]
\[
\begin{align*}
&7 + 7 + 7 + 7 + 7 + 7 \\
&= 1 + 2 + 1 + 2 + 1 + 3 \\
&- A a c + (- A b + B a b)c + - B b e \\
&= 2 + 2 + 6 \\
&1 + 1 + 2 + 1 + 2 \\
&((- A b + - B a)c + - B b c)d \\
&= 2 + 2 + 2 \\
&* \\
&6 \\
&x \\
&+ \\
&6 + 3 + 2 + 1 + 3 + 3 + 2 \\
&((- A a b + - B a )c + - A b + - B a b)e \\
&= 5 + 5 + 5 + 5 \\
&1 + 3 \\
&((- A a c + (- A b + - B a b)c + - B b )d \\
&= 5 + 5 + 5 + 5 \\
&* \\
&5 \\
&x \\
&+ \\
&3 + 2 + 3 + 2 + 3 + 2 \\
&(- A a c + - A a b + - B a b)e \\
&= 4 + 4 + 4 \\
&+ \\
&3 + 3 + 2 + 1 + 3 + 3 + 2 \\
&((- A a b + - B a )c + - A b + - B a b )d \\
&= 2 + 4 + 4 + 4 \\
&* \\
&4 \\
&x \\
&+ \\
&2 + 1 + 3 + 2 + 2 + 2 + 3 \\
&((A a b + - B a )e + (A a c + A a b + B a b)d)x \\
&= 3 \\
&+ \\
&1 + 3 + 3 + 2 + 1 + 3 + 2 + 3 \\
&(- A a e + (- A a b + - B a )d)x + A a d x \\
&= 2 + 2 + 2 \\
&\text{Type: Polynomial(Fraction(Integer))}
\end{align*}
\]

```
d0:=normalize(t0-D(r0,x))
```

---

121
t0:=(A+B*x)*(a+b*x+c*x^2)^3

r0:=a^3*A*x+1/2*a^2*(3*A*b+a*B)*x^2+a*(a*b*B+A*(b^2+a*c))*x^3+_1/4*(3*a*B*(b^2+a*c)+A*(b^3+6*a*b*c))x^4+1/5*(b^3*B+3*A*b^2*c+3*a*A*c^2)*x^5+1/2*c*(b^2*B+A*b*c+a*B*c)*x^6+_
1/7*c^2*(3*b*B+A*c)*x^7+1/8*B*c^3*x^8

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (A + B x) (a + b x + c x^2)^3/(d + e x) \]

\[ r_0 := -(c d^2 - b d e + a e^2)^2 (3 A e (2 c d - b e) - B (7 c^2 d^3 - 2 c e (5 b d - a e))) \times x/e^7 - 3/2 (c d^2 - b d e + a e^2) (B (35 c^3 d^4 - b^3 e^3 + 3 b c e^2 (5 b d - a e)) - A e (35 c^3 d^3 - 2 c e (3 b d - a e))) \times (d + e x)^3/e^8 - 1/4 (B (35 c^3 d^3 - b^3 e^3 + 3 b c e^2 (5 b d - a e)) - 3 A c e (5 c^2 d^2 + b^2 e^2 - c e (5 b d - a e))) \times (d + e x)^4/e^8 - 3/5 c (A c e (2 + c d - b e) - B (7 c^2 d^2 + b^2 e^2 - c e (6 b d - a e))) \times (d + e x)^5/e^8 - 1/6 (c d^2 - b d e + a e^2)^3 \times \log(d + e x)/e^8 \]
\begin{align*}
&\quad (1260A \ a \ c + 1260A \ a \ b + 1260B \ a \ b) d e \\
&\quad + \\
&\quad 2 \quad 3 \quad 2 \quad 3 \quad 4 \\
&\quad ((-2520A \ a \ b - 1260B \ a \ c) - 420A \ b - 1260B \ a \ b) d e \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 4 \quad 3 \\
&\quad (1260A \ a \ c + (1260A \ b + 2520B \ a \ b)c + 420B \ b) d e \\
&\quad + \\
&\quad 2 \quad 2 \quad 5 \quad 2 \quad 3 \quad 2 \quad 6 \\
&\quad ((-1260B \ a \ b - 1260B \ a \ c) - 1260B \ b \ c) d e + (420A \ c + 1260B \ b \ c) d e \\
&\quad + \\
&\quad 3 \quad 7 \\
&\quad - 420B \ c \ d \\
&\quad * \\
&\quad \log(e \ x + d) \\
&\quad + \\
&\quad 3 \quad 7 \quad 7 \quad 3 \quad 6 \quad 6 \\
&\quad 60B \ c \ e \ x + ((70A \ c + 210B \ b \ c)e - 70B \ c \ d \ e)x \\
&\quad + \\
&\quad 2 \quad 2 \quad 7 \quad 3 \quad 2 \quad 6 \\
&\quad ((252A \ b + 252B \ a)c + 252B \ b \ c)e + (-84A \ c - 252B \ b \ c)d e \\
&\quad + \\
&\quad 3 \quad 2 \quad 5 \\
&\quad 84B \ c \ d \ e \\
&\quad * \\
&\quad 5 \\
&\quad x \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 7 \\
&\quad (315A \ a \ c + (315A \ b + 630B \ a \ b)c + 105B \ b)e \\
&\quad + \\
&\quad 2 \quad 2 \quad 6 \quad 3 \quad 2 \quad 2 \quad 5 \\
&\quad ((-315A \ b - 315B \ a \ c) - 315B \ b \ c)d e + (105A \ c + 315B \ b \ c)d e \\
&\quad + \\
&\quad 3 \quad 3 \quad 4 \\
&\quad - 105B \ c \ d \ e \\
&\quad * \\
&\quad 4 \\
&\quad x \\
&\quad + \\
&\quad 2 \quad 3 \quad 2 \quad 7 \\
&\quad ((840A \ a \ b + 420B \ a \ c) + 140A \ b + 420B \ a \ b)e \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 6 \\
&\quad (-420A \ a \ c + (-420A \ b - 840B \ a \ b)c - 140B \ b \ c)d e \\
&\quad + \\
&\quad 2 \quad 2 \quad 2 \quad 5 \quad 3 \quad 2 \quad 3 \quad 4 \\
&\quad ((420A \ b + 420B \ a \ c) + 420B \ b \ c)d e + (-140A \ c - 420B \ b \ c)d e \\
&\quad + \\
&\quad 3 \quad 4 \quad 3
\end{align*}
\begin{verbatim}
--R  140B c d e
--R  *
--R  3
--R  x
--R  +
--R  2  2  2  7
--R  (630A a c + 630A a b + 630B a b)e
--R  +
--R  2  3  2  6
--R  ((- 1260A a b - 630B a )c - 210A b - 630B a b)d e
--R  +
--R  2  2  3  5
--R  (630A a c + (630A b + 1260B a b)c + 210B b )d e
--R  +
--R  2  2  3  4  3  2  4  3
--R  ((- 630A a b - 630B a)c - 630B b c)d e + (210A c + 630B b c )d e
--R  +
--R  3  5  2
--R  - 210B c d e
--R  *
--R  2
--R  x
--R  +
--R  2  3  7  2  2  2  6
--R  (1260A a b + 420B a )e + (- 1260A a c - 1260A a b - 1260B a b)d e
--R  +
--R  2  3  2  6
--R  ((2520A a b + 1260B a )c + 420B b + 1260B a b )d e
--R  +
--R  2  2  3  3  4
--R  (- 1260A a c + (- 1260A b - 2520B a b)c - 420B b )d e
--R  +
--R  2  2  3  3  4
--R  (- 1260A b + 1260B a)c + 1260B b c)d e
--R  +
--R  3  2  5  2  3  6
--R  (- 420A c - 1260B b c )d e + 420B c d e
--R  *
--R  x
--R  +
--R  3  5  2
--R  2  2  2  5
--R  (630A a c + 630A a b + 630B a b)d e
--R  +
--R  2  3  2  4  4
--R  ((- 2940A a b - 1470B a )c - 490A b - 1470B a b )d e
--R  +
--R  2  2  3  4  3
--R  (2415A a c + (2415B b + 4830B a b)c + 805B b )d e
--R  +
--R  2  2  2  2  6
\end{verbatim}

125
\begin{verbatim}
\texttt{--R ((-3423A \ b - 3423B \ a)c - 3423B \ b \ c)d e + (1491A \ c + 4473B \ b \ c)d e} \\
\texttt{--R +} \\
\texttt{--R 3 7} \\
\texttt{--R - 1851B \ c \ d} \\
\texttt{--R /} \\
\texttt{--R 8} \\
\texttt{--R 420e} \\
\texttt{--R Type: Expression(Integer)}
\end{verbatim}

\begin{verbatim}
\texttt{--E 206} \\
\texttt{--S 207 of 1035} \\
\texttt{d0:=normalize(t0-D(r0,x))} \\
\texttt{--R} \\
\texttt{--R (3) 0} \\
\texttt{--R Type: Expression(Integer)} \\
\texttt{--E 207} \\
\texttt{)clear all} \\
\texttt{--S 208 of 1035} \\
\texttt{t0:=(A+B*x)*(a+b*x+c*x^2)^3/(d+e*x)^2} \\
\texttt{--R} \\
\texttt{--R (1)} \\
\texttt{\begin{verbatim} \\
\texttt{--R 3 7 3 2 6 2 2 5} \\
\texttt{--R B c x + (A c + 3B b c )x + ((3A b + 3B a)c + 3B b c)x} \\
\texttt{--R +} \\
\texttt{--R 2 2 2 3 4} \\
\texttt{--R (3A a c + (3A b + 6B a b)c + B b )x} \\
\texttt{--R +} \\
\texttt{--R 2 3 3 2 3 2 2 2} \\
\texttt{--R ((6A a b + 3B a )c + A b + 3B a b )x + (3A a c + 3A a b + 3B a b)x} \\
\texttt{--R +} \\
\texttt{--R 2 3 3} \\
\texttt{--R (3A a b + B a )x + A a} \\
\texttt{--R /} \\
\texttt{--R 2 2} \\
\texttt{--R e x + 2d e x + d} \\
\texttt{--R Type: Fraction(Polynomial(Integer))} \\
\texttt{--E 208} \\
\texttt{--S 209 of 1035} \\
\texttt{r0:=-3*(c*d^2-b*d*e+a*e^2)^2/(B*(7*c^2*d^3-c*d*e*(8*b*d-3*a*e)+b*e^2_} \\
\texttt{\begin{verbatim} \\
\texttt{(2*b*d-a*e))-(A*e*(5*c^2*d^2+2*b*e^2-c*e*(5*b*d-a*e)))/x/e^7}(B*d-A*e)*_} \\
\texttt{\begin{verbatim} \\
\texttt{(c*d^2-b*d*e+a*e^2)^2)/(e^8*(d+e*x)))}-1/2*(A*e*(2*c*d-b*e)*(10*c^2*d^2+_
\texttt{\begin{verbatim} \\
\texttt{b^2*e^2-2*c*e*(5*b*d-3*a*e)))-B*(35*c^3*d^4-b^3*e^3+3*b*c*e^2*(5*b*d-3*a*e))_} \\
\texttt{\begin{verbatim} \\
\texttt{-30*c^2*d^2*e^2*(2*b*d-a*e)+3*c*e^2*(-10*b^2*d^2-8*a*b*d*e+a^2*e^2))}_*} \\
\texttt{\begin{verbatim} \\
\texttt{(d+e*x))}^2/e^8-1/3(B*(35*c^3*d^3-b^3*e^3+3*b*c*e^2*(5*b*d-2*a*e))}_*} \\
\texttt{\begin{verbatim} \\
\texttt{-15*c^2*d*e*(3*b*d-a*e))-3*A*c*e*(5*c^2*d^2+b^2*e^2-c*e*(5*b*d-a*e))}_*} \\
\end{verbatim}
\end{verbatim}
\end{verbatim}}

126
\[(d+e*x)^3/e^8-3/4*c*(A*c*e*(2*c*d-b*e)-B*(7*c^2*d^2+b^2*e^2-c*e*e_+(6*b*d-a*e)))*(d+e*x)^4/e^8-1/5*c^2*(7*B*c*d-3*b*B*e-A*c*e)*_e^8-(c*d^2-b*d*e+a*e^2)^2*(3*A*e*_e^8-(2*c*d-b*e)-B*(7*c*d^2-e*(4*b*d-a*e)))*1og(d+e*x)/e^8\]

--R

--R

--R (2)

--R 2 3 7 2 2 2 6

--R (180A a b + 60B a )e + (- 360A a c - 360A a b - 360B a b)d e

--R +

--R 2 3 2 2 5

--R ((1080A a b + 540B a )c + 180A b + 540B a b )d e

--R +

--R 2 2 3 3 4

--R (- 720A a c + (- 720A b - 1440B a b)c - 240B b )d e

--R +

--R 2 2 4 3

--R ((900B a + 900B a)c + 900B b c)d e

--R +

--R 2 5 2 3 6

--R (- 360A c - 1080B b c)d e + 420B c d e

--R *

--R x

--R +

--R 2 3 6 2 2 2 5

--R (180A a b + 60B a )d e + (- 360A a c - 360A a b - 360B a b)d e

--R +

--R 2 3 2 3 4

--R ((1080A a b + 540B a )c + 180A b + 540B a b )d e

--R +

--R 2 2 3 4 3

--R (- 720A a c + (- 720A b - 1440B a b)c - 240B b )d e

--R +

--R 2 2 5 2 3 6

--R ((900B a + 900B a)c + 900B b c)d e + (- 360A c - 1080B b c)d e

--R +

--R 3 7

--R 420B c d

--R *

--R log(e x + d)

--R +

--R 3 7 7 3 2 7 3 6 6

--R 10B c e x + ((12A c + 36B b c)e - 14B c d e)x

--R +

--R 2 2 7 3 2 6

--R ((45A b + 45B a)c + 45B b c)e + (- 18A c - 54B b c)d e

--R +

--R 3 2 5

--R 21B c d e

--R *
\[
\begin{align*}
&5 \times\left(\frac{2}{3} \times \left(2 \times 7 \times \left(60A a c + (60A b + 120B a b)c + 20B b \right)e + \frac{2}{3} \times \left(2 \times 6 \times \left((- 75A b - 75B a)c - 75B b c\right)d e + (30A c + 90B b c \right)\right)\right) + 3 \times 4 \times \left(70B c d e\right) * 3 \times \left(2 \times 6 \times \left(180A a c + 180A a b + 180B a b\right)e + \frac{2}{3} \times \left(2 \times 6 \times \left((- 540A a b - 270B a )c - 90A b - 270B a b \right)d e + \frac{2}{3} \times \left(2 \times 5 \times \left(360A a c + (360A b + 720B a b)c + 120B b \right)d e + \frac{2}{3} \times \left(2 \times 4 \times \left((- 450A b - 450B a)c - 450B b c\right)d e + (180A c + 540B b c \right)\right)\right)\right) + 3 \times 5 \times \left(210B c d e\right) * 2 \times \left(2 \times 6 \times \left(180A a c + 180A a b + 180B a b\right)d e\right)\right)\right)\right)\right)\right)
\end{align*}
\]
\[\begin{align*}
&\quad + \\
&2 \quad 3 \quad 2 \quad 2 \quad 5 \\
&((- 540A \ a \ b - 270B \ a )c - 90A \ b - 270B \ a \ b )d \ e \\
&+ \\
&2 \quad 2 \quad 3 \quad 3 \quad 4 \\
&(240A \ a \ c + (240A \ b + 480B \ a \ b)c + 80B \ b \ b)d \ e \\
&+ \\
&2 \quad 2 \quad 4 \quad 3 \quad 2 \quad 2 \quad 5 \quad 2 \\
&((- 75A \ b - 75B \ a)c - 75B \ b \ c)d \ e + (- 78A \ c - 234B \ b \ c)d \ e \\
&+ \\
&3 \quad 6 \\
&231B \ c \ d \ e \\
&\times \\
&3 \quad 7 \quad 2 \quad 3 \quad 6 \\
&- 60A \ a \ e + (180A \ a \ b + 60B \ a \ a)d \ e \\
&+ \\
&2 \quad 2 \quad 2 \quad 2 \quad 5 \\
&(- 180A \ a \ c - 180A \ a \ b - 180B \ a \ b)d \ e \\
&+ \\
&2 \quad 3 \quad 2 \quad 3 \quad 4 \\
&(540A \ a \ b + 270B \ a \ b)c + 90A \ b + 270B \ a \ a \ b)d \ e \\
&+ \\
&2 \quad 2 \quad 3 \quad 4 \quad 3 \\
&(- 480A \ a \ c + (- 480A \ b - 960B \ a \ b)c - 160B \ b \ b)d \ e \\
&+ \\
&2 \quad 2 \quad 5 \quad 2 \quad 3 \quad 2 \quad 6 \\
&((825A \ b + 825B \ a \ a)c + 825B \ b \ b \ b)d \ e + (- 438A \ c - 1314B \ b \ b \ c)d \ e \\
&+ \\
&3 \quad 7 \\
&651B \ c \ d \\
&/ \\
&9 \quad 8 \\
&60e \ x + 60d \ e \\
&\quad \text{Type: Expression(Integer)} \\
\end{align*}\]

\[\begin{align*}
t0 &:= (A+B*x)*(a+b*x+c*x^2)^3/(d+e*x)^3 \\
&\quad \text{Type: Expression(Integer)} \\
\end{align*}\]
\[ (60A \ a \ c + 60A \ a \ b + 60B \ a \ b) e \]

\[ + \]

\[ (360A \ a \ b - 180B \ a) c - 60A \ b - 180B \ a \ b) d \]

\[ + \]

\[ (360A \ a \ c + (360A \ a \ b + 720B \ a \ b) c + 120B \ b \ d \ e \]

\[ + \]

\[ (60A \ a \ c + 900B \ b \ c) d e - 420B \ c \ d \ e \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

---

Type: Fraction(Polynomial(Integer))
--R 2
--R x
--R +

2 2 2 6
(120A a c + 120A a b + 120B a b)d e
--R +

2 3 2 5
((- 720A a b - 360B a )c - 120A b - 360B a b )d e
--R +

2 2 3 4
(720A a c + (720A b + 1440B a b)c + 240B b )d e
--R +

2 2 4 3
((- 1200A b - 1200B a)c - 1200B b c)d e
--R +

3 2 5 2 3 6
(600A c + 1800B b c )d e - 840B c d e
--R *
--R x
--R +

2 2 2 2 5
(60A a c + 60A a b + 60B a b)d e
--R +

2 3 2 3 4
((- 360A a b - 180B a )c - 60A b - 180B a b )d e
--R +

2 2 3 4 3
(360A a c + (360A b + 720B a b)c + 120B b )d e
--R +

2 2 5 2 3 2 6
((- 600A b - 600B a)c - 600B b c)d e + (300A c + 900B b c )d e
--R +

3 7
--R - 420B c d
--R *

log(e x + d)
--R +

3 7 7 3 2 7 3 6 6
4B c e x + ((5A c + 15B b c)e - 7B c d e)x
--R +

2 2 7 3 2 6
((20A b + 20B a)c + 20B b c)e + (- 10A c - 30B b c )d e
--R +

3 2 5
--R 14B c d e
--R *

5
--R x
--R +

2 2 3 7
\[(30A \ a \ c + (30A \ b + 60B \ a \ b)c + 10B \ b )e + 2^{2}2 \ 6 \ 3 \ 2 \ 2 \ 5 \ ((- 50A \ b - 50B \ a)c - 50B \ b \ c)d \ e + (25A \ c + 75B \ b \ c)d \ e + 3 \ 3 \ 4 \ - 35B \ c \ d \ e * 4 \ x + 2^{2}3 \ 2 \ 7 \ ((120A \ a \ b + 60B \ a \ )c + 20A \ b + 60B \ a \ b )e + 2^{2}2 \ 3 \ 6 \ (- 120A \ a \ c + (- 120A \ b - 240B \ a \ b)c - 40B \ b \ c)d \ e + 3 \ 4 \ 3 \ 140B \ c \ d \ e * 3 \ x + 2^{2}3 \ 2 \ 6 \ ((240A \ a \ b + 120B \ a \ )c + 40A \ b + 120B \ a \ b )d \ e + 2^{2}2 \ 3 \ 2 \ 5 \ (- 330A \ a \ c + (- 330A \ b - 660B \ a \ b)c - 110B \ b \ c)d \ e + 3 \ 5 \ 2 \ 500B \ c \ d \ e * 2 \ x + 2^{2}3 \ 2 \ 7 \ 2 \ 2 \ 2 \ 6 \ (- 60A \ a \ b - 20B \ a )e + (120A \ a \ c + 120A \ a \ b + 120B \ a \ b)d \ e + 2^{3}3 \ 2 \ 2 \ 5 \ ((- 240A \ a \ b - 120B \ a \ )c - 40A \ b - 120B \ a \ b \ )d \ e + 2^{2}3 \ 3 \ 4 \ (60A \ a \ c + (60A \ b + 120B \ a \ b)c + 20B \ b \ )d \ e + \n\]
\[
\begin{align*}
&((60A b + 60B a)c + 60B b c)d e + (- 80A c - 240B b c )d e \\
&+ 3 6 \\
&160B c d e \\
&* \\
&x \\
&+ \\
&3 7 \\
&2 3 6 \\
&- 10A a e + (- 30A a b - 10B a )d e \\
&+ \\
&2 2 2 2 5 \\
&(90A a c + 90A a b + 90B a b)d e \\
&+ \\
&2 2 2 3 4 \\
&((- 300A a b - 150B a )c - 50A b - 150B a b )d e \\
&+ \\
&2 2 3 4 3 \\
&(210A a c + (210A b + 420B a b)c + 70B b )d e \\
&+ \\
&2 2 5 2 3 2 6 \\
&((- 270A b - 270B a)c - 270B b c)d e + (110A c + 330B b c )d e \\
&+ \\
&3 7 \\
&- 130B c d \\
&/ \\
&10 2 9 2 8 \\
&20e x + 40d e x + 20d e \\
\end{align*}
\]
\[-R (3A a c + (3A b + 6B a b)c + B b)x\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 2 \hspace{1cm} 2 \hspace{1cm} 2\]
\[-R (6A a b + 3B a )c + A b + 3B a b)x + (3A a c + 3A a b + 3B a b)x\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 3\]
\[-R (3A a b + B a )x + A a\]
\[-R /\]
\[-R ^{\frac{e x + 4d e x + 6d e x + 4d e x + d}{4 4 3 3 2 2 2 3 4}}\]
\[-R \text{ Type: Fraction(Polynomial(Integer))}\]
\[-R\]
\[-R \hspace{1cm} 2\]
\[-R \hspace{1cm} 3\]
\[-R \hspace{1cm} 7\]
\[-R (72A a b + 36B a )c + 12A b + 36B a b )e\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 6\]
\[-R (- 144A a c + (- 144A b - 288B a b)c - 48B b )d e\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 2 \hspace{1cm} 5\]
\[-R ((360A b + 360B a)c + 360B b c)d e\]
\[-R +\]
\[-R \hspace{1cm} 3 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 3 \hspace{1cm} 4 \hspace{1cm} 3\]
\[-R (- 240A c - 720B b c )d e + 420B c d e\]
\[-R *\]
\[-R \hspace{1cm} 3\]
\[-R \hspace{1cm} x\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 2 \hspace{1cm} 6\]
\[-R ((216A a b + 108B a )c + 36A b + 108B a b )d e\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 2 \hspace{1cm} 5\]
\[-R (- 432A a c + (- 432A b - 864B a b)c - 144B b )d e\]
\[-R +\]
\[-R \hspace{1cm} 2 \hspace{1cm} 2 \hspace{1cm} 3 \hspace{1cm} 4\]
\[\begin{align*}
&(-720A c - 2160B b c)d e + 1260B c d e \\
&+ 3 2 4 3 3 5 2 \\
&((1080A b + 1080B a)c + 1080B b c)d e + (-720A c - 2160B b c)d e + 1260B c d e \\
&+ 2 3 2 2 5 \\
&((-432A a c + (-432A b - 864B a b)c - 144B b)d e \\
&+ 2 2 3 3 4 \\
&((1080A b + 1080B a)c + 1080B b c)d e \\
&+ 3 2 5 2 3 6 \\
&((-720A c - 2160B b c)d e + 1260B c d e \\
&+ 2 3 2 3 4 \\
&((72A a b + 36B a)c + 12A b + 36B a b)d e \\
&+ 2 2 3 4 3 \\
&((-144A a c + (-144A b - 288B a b)c - 48B b)d e \\
&+ 2 2 5 2 3 2 6 \\
&((360A b + 360B a)c + 360B b c)d e + (-240A c - 720B b c)d e \\
&+ 3 7 \\
&420B c d \\
&+ x \\
&log(e x + d) \\
&+ 3 7 7 3 2 7 3 6 6 \\
&3B c e x + ((4A c + 12B b c)e - 7B c d e)x \\
&+ 2 2 7 3 2 6 \\
&((-18A b + 18B a)c + 18B b c)e + (-12A c - 36B b c)d e \\
&+ 3 2 5 \\
&21B c d e \\
&+ 5 \\
&x \\
&+ 2 2 3 7 \\
&((36A a c + (36A b + 72B a b)c + 12B b)e \\
\end{align*}\]
\[
\begin{align*}
&\quad + \quad 2 \quad 2 \quad 6 \quad 3 \quad 2 \quad 2 \quad 5 \\
&\quad (-90A \ b - 90B \ a)c \ - 90B \ b \ c)d \ e \ + \ (60A \ c + 180B \ b \ c)d \ e \\
&\quad + \\
&\quad 3 \quad 3 \quad 4 \\
&\quad - 105B \ c \ d \ e \\
&\quad * \\
&\quad 4 \\
&\quad x \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 6 \\
&\quad (108A \ a \ c + (108A \ b + 216B \ a \ b)c + 36B \ b) \ d \ e \\
&\quad + \\
&\quad 2 \quad 2 \quad 5 \quad 3 \quad 2 \quad 3 \quad 4 \\
&\quad ((-378A \ b - 378B \ a)c \ - 378B \ b \ c)d \ e \ + \ (292A \ c + 876B \ b \ c)d \ e \\
&\quad + \\
&\quad 3 \quad 4 \quad 3 \\
&\quad - 556B \ c \ d \ e \\
&\quad * \\
&\quad 3 \\
&\quad x \\
&\quad + \\
&\quad 2 \quad 2 \quad 2 \quad 7 \\
&\quad (-36A \ a \ c - 36A \ a \ b - 36B \ a \ b)e \\
&\quad + \\
&\quad 2 \quad 3 \quad 2 \quad 6 \\
&\quad ((216A \ a \ b + 108B \ a)c + 36A \ b + 108B \ a \ b) \ d \ e \\
&\quad + \\
&\quad 2 \quad 2 \quad 5 \\
&\quad (-108A \ a \ c + (-108A \ b \ - 216B \ a \ b)c - 36B \ b) \ d \ e \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 4 \quad 3 \quad 2 \quad 4 \quad 3 \\
&\quad ((-54A \ b - 54B \ a)c \ - 54B \ b \ c)d \ e \ + \ (156A \ c + 468B \ b \ c)d \ e \\
&\quad + \\
&\quad 3 \quad 5 \quad 2 \\
&\quad - 408B \ c \ d \ e \\
&\quad * \\
&\quad 2 \\
&\quad x \\
&\quad + \\
&\quad 2 \quad 3 \quad 7 \quad 2 \quad 2 \quad 2 \quad 6 \\
&\quad (-18A \ a \ b - 6B \ a) \ e \ + \ (-36A \ a \ c - 36A \ a \ b - 36B \ a \ b) \ d \ e \\
&\quad + \\
&\quad 2 \quad 3 \quad 2 \quad 2 \quad 5 \\
&\quad ((324A \ a \ b + 162B \ a)c + 54A \ b + 162B \ a \ b) \ d \ e \\
&\quad + \\
&\quad 2 \quad 2 \quad 3 \quad 3 \quad 4 \\
&\quad (-324A \ a \ c + (-324A \ b \ - 648B \ a \ b)c - 108B \ b \ d \ e \\
&\quad + \\
&\quad 2 \quad 2 \quad 4 \quad 3 \quad 3 \quad 2 \quad 5 \quad 2
\end{align*}
\]
\[
\begin{align*}
\text{Type: Expression(Integer)} & \quad 215 \\
\text{d0:=normalize(t0-D(r0,x))} & \\
\text{Type: Expression(Integer)} & \quad 216 \\
\text{)}clear all \\
\text{Type: Expression(Integer)} & \quad 217 \\
t0:=(A+B*x)*(a+b*x+c*x^2)^3/(d+e*x)^5 & \\
\text{137}
\end{align*}
\]
\[
\frac{(3A \ a \ b + B \ a) x + A \ a}{5542332245 e^x + 5d e^x + 10d e^x + 10d e^x + 5d e^x + d}
\]

Type: Fraction(Polynomial(Integer))
(216A a c + (216A b + 432B a b)c + 72B b )d e
R +
R 2 2 3 4
R ((- 1080A b - 1080B a)c - 1080B b c)d e
R +
R 3 2 4 3 3 5 2
R (1080A c + 3240B b c )d e - 2520B c d e
R *
R 2
R x
R +
R 2 2 3 3 4
R (144A a c + (144A b + 288B a b)c + 48B b )d e
R +
R 2 2 4 3
R ((- 720A b - 720B a)c - 720B b c)d e
R +
R 3 2 5 2 3 6
R (720A c + 2160B b c )d e - 1680B c d e
R *
R 2
R x
R +
R 2 2 3 3 4
R (36A a c + (36A b + 72B a b)c + 12B b )d e
R +
R 2 2 5 2 3 2 6
R ((- 180A b - 180B a)c - 180B b c)d e + (180A c + 540B b c )d e
R +
R 3 7
R - 420B c d
R *
R log(e x + d)
R +
R 3 7 7 3 2 7 3 6 6
R 4B c e x + ((6A c + 18B b c )e - 14B c d e )x
R +
R 2 2 7 3 2 6
R ((36A b + 36B a)c + 36B b c)e + (- 36A c - 108B b c )d e
R +
R 3 2 5
R 84B c d e
R *
R 5
R x
R +
R 2 2 6 3 2 2 5
R ((144A b + 144B a)c + 144B b c)d e + (- 204A c - 612B b c )d e
R +
R 3 3 4
R 556B c d e
\begin{math}
\begin{align*}
&\frac{-R}{*} \\
&\frac{-R}{*} 4 \\
&\frac{-R}{*} x \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{3}{3} \frac{2}{2} \frac{7}{7} \\
&\frac{-R}{*} \frac{(- 72A a b - 36B a )c - 12A b - 36B a b }{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{3}{3} \frac{6}{6} \\
&\frac{-R}{*} \frac{(144A a c + (144A b + 288B a b)c + 48B b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{5}{5} \frac{3}{3} \frac{2}{2} \frac{3}{3} \frac{4}{4} \\
&\frac{-R}{*} \frac{((- 144A b - 144B a)c - 144B b c)d e + (- 96A c - 288B b c )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{3}{3} \frac{4}{4} \frac{3}{3} \\
&\frac{-R}{*} 544B c d e \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{3}{3} \\
&\frac{-R}{*} x \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{7}{7} \\
&\frac{-R}{*} \frac{(- 18A a c - 18A a b - 18B a b )e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{3}{3} \frac{2}{2} \frac{6}{6} \\
&\frac{-R}{*} \frac{((- 108A a b - 54B a )c - 18A b - 54B a b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{3}{3} \frac{2}{2} \frac{5}{5} \\
&\frac{-R}{*} \frac{(324A a c + (324A b + 648B a b)c + 108B b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{3}{3} \frac{4}{4} \frac{3}{3} \frac{2}{2} \frac{4}{4} \frac{3}{3} \\
&\frac{-R}{*} \frac{((- 756A b - 756B a)c - 756B b c)d e + (396A c + 1188B b c )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{3}{3} \frac{5}{5} \frac{2}{2} \\
&\frac{-R}{*} - 444B c d e \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \\
&\frac{-R}{*} x \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{3}{3} \frac{7}{7} \frac{2}{2} \frac{2}{2} \frac{2}{2} \frac{6}{6} \\
&\frac{-R}{*} \frac{((- 12A a b - 4B a )e + (- 12A a c - 12A a b - 12B a b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{3}{3} \frac{2}{2} \frac{2}{2} \frac{5}{5} \\
&\frac{-R}{*} \frac{((- 72A a b - 36B a )c - 12A b - 36B a b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{3}{3} \frac{3}{3} \frac{4}{4} \\
&\frac{-R}{*} \frac{(264A a c + (264A b + 528B a b)c + 88B b )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{2}{2} \frac{2}{2} \frac{4}{4} \frac{3}{3} \frac{3}{3} \frac{2}{2} \frac{5}{5} \frac{2}{2} \\
&\frac{-R}{*} \frac{((- 744A b - 744B a)c - 744B b c)d e + (504A c + 1512B b c )d e}{e} \\
&\frac{-R}{*} + \\
&\frac{-R}{*} \frac{3}{3} \frac{6}{6} 
\end{align*}
\end{math}
d0:=normalize(t0-D(r0, x))

(3) 0

(1)
\[ r_0 := -c^2(6Bc^2d - 3bB^2c + A^2e) + x/e^7 + 1/2Bc^2/2x^2/e^6 + 1/5(Bd - A)e * (c*d^2 - 2b*b + d + e + a + e^2) \]

\[ (3Ae + (2c + d - b + e) - 7(c + d - 2 - a + 4b + d - a e) + e^4) + (c*d^2 - 2b*b + d + e + a + e^2) \]

\[ (2b*b + d - a e) - A*e(5c - 2d^2 + 2b + 2e^2 - c e(5b + d - a e)) + (e^4 + (d + e)/x)^3 \]

\[ 1/2(Ae + (2c + d - b + e) - 10c^2 + 2d^2 + 2b + 2e^2 - 2 - 2c + e + (5b = d - 3a e)) + \]

\[ B(35c - 3d + 4b - 2e^3 + (4b + d - 3a e) - 30c^2 - 2d^2 - 2c + e + (2b + d - a e) + \]

\[ 3c + e + 2(10b^2 + 2d^2 - 2a^2 + d + e + a + e^2) + (e^4 + (d + e)/x)^2 + \]

\[ B(35c - 3d + 3b + 3c = e^2 - 15c - 2d - 2e + (3b + d - a e) - 3 \]

\[ 3c + e(5c + 2d + 2e^2 - 2c + e + (5b = d - a e)) + (e^4 + (d + e)/x)^2 - \]

\[ 3c + e(2c + d + b + e) - B(7c^2 + 2d^2 + 2e^2 - 2c + e + (6b + d - a e)) \]

\[ \log(d + e)/x + \text{e}^8 \]

\[ \begin{align*}
(2) & \quad 2^2 7^3 2^6 \\
& \quad ((60A b + 60B a)c + 60B b c)e + (-120A c - 360B b c)d e \\
& \quad + \quad 3^2 5 \\
& \quad 420B c d e \\
& \quad * \\
& \quad 5 \\
& \quad x \\
& \quad + \\
& \quad 2^2 6 \\
& \quad ((300A b + 300B a)c + 300B b c)d e \\
& \quad + \\
& \quad 3^2 5^3 4 \\
& \quad (-600A c - 1800B b c)d e + 2100B c d e \\
& \quad * \\
& \quad 4 \\
& \quad x \\
& \quad + \\
& \quad 2^2 2^5 \\
& \quad ((600A b + 600B a)c + 600B b c d e \\
& \quad + \\
& \quad 3^2 3^4 3^4 3 \\
& \quad (-1200A c - 3600B b c)d e + 4200B c d e \\
& \quad * \\
& \quad 3 \\
& \quad x \\
& \quad + \\
& \quad 2^2 3^4 
\end{align*} \]
\[\begin{align*}
&(-600A \ b + 600B \ a)c + 600B \ b \ c)d \ e + (-1200A \ c - 3600B \ b \ c)d \ e + 4200B \ c \ d \ e \\
&+ 3 2 4 3 3 5 2 \\
&(-600A \ c - 1800B \ b \ c)d \ e + 2100B \ c \ d \ e \\
&\times \\
&2 \\
&x \\
&+ \\
&((300A \ b + 300B \ a)c + 300B \ b \ c)d \ e \\
&+ 3 2 5 2 3 6 \\
&((-600A \ c - 1800B \ b \ c)d \ e + 2100B \ c \ d \ e \\
&\times \\
&420B \ c \ d \\
&\times \\
&\log(e \ x + d) \\
&+ \\
&10B \ c \ e \ x + ((20A \ c + 60B \ b \ c)e - 70B \ c \ d \ e)x \\
&+ 3 2 6 3 2 5 5 \\
&((100A \ c + 300B \ b \ c)d \ e - 500B \ c \ d \ e)x \\
&+ \\
&(-60A \ a \ c + (-60A \ b - 120B \ a \ b)c - 20B \ b)e \\
&+ \\
&2 2 2 2 2 3 3 7 \\
&((-60A \ a \ b - 30B \ a \ )c - 10A \ b - 30B \ a \ b)e \\
&+ \\
&2 2 3 2 3 6 \\
&((-120A \ a \ c + (-120A \ b - 240B \ a \ b)c - 40B \ b)d \ e \\
&+ \\
&2 2 2 2 2 3 3 3 2 3 4 \\
&((900A \ b + 900B \ a)c + 900B \ b \ c)d \ e + (-800A \ c - 2400B \ b \ c)d \ e \\
\end{align*}\]
\[\begin{align*}
&-R \quad + \\
&-R \quad 2 \quad 2 \quad 5 \quad 2 \quad 3 \quad 2 \quad 6 \\
&-R \quad ((137A \ b + 137B \ a)c + 137B \ b \ c)d \ e + (-174A \ c - 522B \ b \ c)d \ e \\
&-R + \\
&-R \quad 3 \ 7 \\
&-R \quad 4598 \ c \ d \\
&-R / \\
&-R \quad 13 \ 5 \quad 12 \ 4 \quad 2 \ 11 \ 3 \quad 3 \ 10 \ 2 \quad 4 \ 9 \quad 5 \ 8 \\
&-R \quad 20e \ x + 100d \ e \ x + 200d \ e \ x + 200d \ e \ x + 100d \ e \ x + 20d \ e \\
&-R \\
&-E 221 \\
&
\end{align*}\]

\[d0:=\text{normalize}(t0-D(r0,x))\]

\[t0:=(A+B*x)*(a+b*x+c*x^2)^3/(d+e*x)^7\]

\[r0:=B*c^3*x/e^7+1/6*(B*d-A*e)*(c*d^2-b*d*e+a*e^2)^3/(e^8*(d*e*x)^6)+_1/5*(c*d^2-b*d*e+a*e^2)^2*3*A*e*(2*c*d-b*e)-B*(7*c*d^2-e*(4*b*d-_a*e))/((e^8*(d+e*x)^5)+3/4*(c*d^2-b*d*e+a*e^2)*(B*7*c^2*d^3-_c*d*e)(8*b^2*d^3-a*e)(b*e^2*(2*b*d-a*e)))*A*e*(5*c^2*d^2+b^2*e^2-_c*e*(5*b*d-a*e))/((e^8*(d+e*x)^4)+1/3*(A*e*(2*c*d-b*e)*)(10*c^2*d^2+_}

\]
\[ b^2e^2-2c^2e(5b^2d-3a^2e)-B(35c^3d^3-4b^2e^2+3(4b^2d-3a^2e)-
30c^2d^2+2c^2e(2b^2d-a^2e)+3c^2e^2(10b^2d-2b^2e^2)+
(10b^2d-2b^2e^2)))/
(e^8(d+e^2)^3)+1/2B(35c^3d^3-3b^2e^2+3b^2c^2e^2(5b^2d-2a^2e)-
15c^2d^2e(3b^2d-a^2e))-3A^2c^2e(5c^2d^2+2b^2e^2-2c^2e(5b^2d-a^2e))/
(e^8(d+e^2)^2)+3c^2e(2c^2d+b^2e)-B(7c^2d^2+2b^2e^2-2c^2e(e^2-
(6b^2d-a^2e)))/(e^8(d+e^2)^2)-c^2(7Bc^2d-3b^2B^2e-A^2c^2e)log(d+e^2)/e^8
\]
\[-R 3 3 4\]
\[-R - 4050B c d e\]
\[-R *\]
\[-R 4\]
\[-R x\]
\[-R +\]
\[-R 2 3 2 7\]
\[-R ((- 120A a b - 60B a )c - 20A b - 60B a b )e\]
\[-R +\]
\[-R 2 2 3 6\]
\[-R (- 120A a c + (- 120A b - 240B a b)c - 40B b )d e\]
\[-R +\]
\[-R 2 2 5 3 2 4\]
\[-R ((- 600B b a c - 600B b c)d e + (2200A c + 6600B b c )d e\]
\[-R +\]
\[-R 3 4 3\]
\[-R - 8200B c d e\]
\[-R *\]
\[-R 3\]
\[-R x\]
\[-R +\]
\[-R 2 2 2 7\]
\[-R (- 45A a c - 45A a b - 45B a b)e\]
\[-R +\]
\[-R 2 3 2 6\]
\[-R ((- 90A a b - 45B a )c - 15A b - 45B a b )d e\]
\[-R +\]
\[-R 2 2 3 5\]
\[-R (- 90A a c + (- 90A b - 180B a b)c - 30B b )d e\]
\[-R +\]
\[-R 2 2 3 4\]
\[-R ((- 450B b a c - 450B b c)d e + (1875A c + 5625B b c )d e\]
\[-R +\]
\[-R 3 5 2\]
\[-R - 7725B c d e\]
\[-R *\]
\[-R 2\]
\[-R x\]
\[-R +\]
\[-R 2 3 7 2 2 2 6\]
\[-R (- 36A a b - 12B a )e + (- 18A a c - 18A a b - 18B a b)d e\]
\[-R +\]
\[-R 2 3 2 5\]
\[-R ((- 36A a b - 18B a )c - 6A b - 18B a b )d e\]
\[-R +\]
\[-R 2 2 3 4\]
\[-R (- 36A a c + (- 36A b - 72B a b)c - 12B b )d e\]
\[-R +\]
\[-R 2 2 4 3\]
\[-R ((- 180A b - 180B a )c - 180B b c)d e + (822A c + 2466B b c )d e\]

147
\[
\frac{60e x + 360d e x + 900d e x + 1200d e x + 900d e x + 360d e x}{148}
\]
\[ \begin{align*}
&(-1050A b - 1050B a)c - 1050B b c)d e + 26950B c d e \\
&+ 2

&(-2100A c - 6300B b c)d e + 30625B c d e \\
&+ 3

&(-630A a b - 315B a )c - 105A b - 315B a b )e

&+ 4

&x

&+ 2

&(-630A a b - 315B a )c - 105A b - 315B a b )e

&+ 3

&x

&+ 2

&(-252A a c - 252A a b - 252B a b)e

&+ 2

&((-378A a b - 189B a )c - 63A b - 189B a b )d e

&+ 2

&((-252A a c + (-252A b - 504B a b)c - 84B b )d e

&+ 2

&((-630A b - 630B a)c - 630B b c)d e

&+ 2

&((-1260A c - 3780B b c )d e + 20139B c d e

&* 3

&x

&+ 2

&((-210A a b - 70B a )e + (-84A a c - 84A a b - 84B a b)d e

&+ 2

&((-126A a b - 63B a)c - 21A b - 63B a b )d e

&+ 2

&((-84A a c + (-84A b - 168B a b)c - 28B b )d e

\end{align*} \]
\[
\begin{align*}
&\frac{d_0}{\text{normalize}(t_0-D(r_0,x))} \\
&t_0 := \frac{(A+B*x)*(a+b*x+c*x^2)^3}{(d+e*x)^9} \\
&\text{clear all}
\end{align*}
\]
--R 3 7 3 2 6 2 2 5
--R B c x + (A c + 3B b c)x + ((3A b + 3B a)c + 3B b c)x
--R +
--R 2 2 3 4
--R (3A a c + (3A b + 6B a b)c + B b )x
--R +
--R 2 3 2 2 2 2 2 2
--R (((6A a b + 3B a)c + A b + 3B a b)x + (3A a c + 3A a b + 3B a b)x
--R +
--R 2 3 3
--R (3A a b + B a )x + A a
--R /
--R 9 9 8 8 2 7 7 3 6 6 4 5 5 5 4 4 6 3 3
--R e x + 9d e x + 36d e x + 84d e x + 126d e x + 126d e x + 84d e x
--R +
--R 7 2 2 8 9
--R 36d e x + 9d e x + d
--R Type: Fraction(Polynomial(Integer))
--R
--R (2)
--R 3 7 7 1 3 3 2 7 7 3 6 6
--R - B c e x + ((- A c - - B b c)e - - B c d e )x
--R +
--R 2 2 2 2
--R +
--R 2 2 7 3 2 6 3 2 5 5
--R (((- A b - - B a)c - B b c)e + (- A c - - B b c)d e - - 7B c d e )x
--R +
--R 3 2 3 2 3 1 3 7
--R ( - A a c + ( - - A b - - B a b)c - - B b )e
--R +
--R 4 4 2 4
--R +
--R 5 5 2 5 2 6 5 3 15 2 2 5
--R (((- A b - - B a)c - - B b c)d e + (- A c - - B b c)d e
--R +
--R 4 4 4 4 4
\[
\begin{align*}
&+ \quad 3 \quad 2 \quad 3 \quad 3 \quad 3 \quad 6 \quad 1 \quad 3 \quad 3 \quad 4 \\
&+ \quad 1 \quad 1 \quad 2 \quad 1 \quad 2 \quad 4 \quad 3 \quad 1 \quad 3 \quad 3 \quad 2 \quad 5 \quad 2 \\
&+ \quad 7 \quad 7 \quad 7 \quad 7 \quad 7 \quad 7 \\
&+ \quad 3 \quad 6 \\
&- \quad B \quad c \quad d \quad e \\
&* \quad x \\
&+ \quad 1 \quad 3 \quad 7 \quad 3 \quad 2 \quad 1 \quad 3 \quad 6 \\
&- \quad A \quad a \quad e \quad + \quad (- \quad A \quad a \quad b \quad - \quad - \quad B \quad a \quad b \quad )d \quad e \\
&+ \quad 8 \quad 56 \quad 56 \\
&+ \quad 1 \quad 2 \quad 1 \quad 2 \quad 1 \quad 2 \quad 2 \quad 5 \\
&- \quad A \quad a \quad c \quad - \quad A \quad a \quad b \quad - \quad B \quad a \quad b \quad e \\
&+ \quad 56 \quad 56 \quad 56 \\
&+ \quad 3 \quad 3 \quad 2 \quad 1 \quad 3 \quad 3 \quad 2 \quad 3 \quad 4 \\
&+ \quad 140 \quad 280 \quad 280 \quad 280 \\
&+ \quad 3 \quad 2 \quad 3 \quad 2 \quad 3 \quad 1 \quad 3 \quad 4 \quad 3 \\
&+ \quad 280 \quad 280 \quad 140 \quad 280 \\
&+ \quad 1 \quad 1 \quad 2 \quad 1 \quad 2 \quad 5 \quad 2 \quad 1 \quad 3 \quad 3 \quad 2 \quad 6 \\
&+ \quad 56 \quad 56 \quad 56 \quad 56 \quad 56 \\
&+ \quad 1 \quad 3 \quad 7 \\
&- \quad B \quad c \quad d \\
&8 \\
&/ \\
&\quad 16 \quad 8 \quad 15 \quad 7 \quad 2 \quad 14 \quad 6 \quad 3 \quad 13 \quad 5 \quad 4 \quad 12 \quad 4 \quad 5 \quad 11 \quad 3 \\
&\quad e \quad x \quad + \quad 8d \quad e \quad x \quad + \quad 28d \quad e \quad x \quad + \quad 56d \quad e \quad x \quad + \quad 70d \quad e \quad x \quad + \quad 56d \quad e \quad x \\
&+ \\
&\quad 6 \quad 10 \quad 2 \quad 7 \quad 9 \quad 8 \quad 8 \\
&28d \quad e \quad x \quad + \quad 8d \quad e \quad x \quad + \quad d \quad e \\
&\quad \text{Type: Fraction(Polynomial(Fraction(Integer)))} \\
&\quad \text{E 230} \\
&\quad \text{S 231 of 1035} \\
\end{align*}
\]
\( t_0 := (A + B \cdot x) \cdot (a + b \cdot x + c \cdot x^2)^3 / (d + e \cdot x)^{10} \)

\[
\frac{1}{9} (B \cdot d - A \cdot e) \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)^3 / (e^8 \cdot (d + e \cdot x)^8) + \frac{1}{8} (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)^2 \cdot (3 \cdot A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (7 \cdot c \cdot d^3 - c \cdot d \cdot e + (8 \cdot b \cdot d - 3 \cdot a \cdot e) + b \cdot e^2 \cdot (2 \cdot b \cdot d - a \cdot e)) / (e^8 \cdot (d + e \cdot x)^7) + 1 / 6 \cdot (A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) \cdot (10 \cdot c \cdot d^2 - 2 \cdot b \cdot e^2 - 2 \cdot c \cdot e^2 \cdot (5 \cdot b \cdot d - 3 \cdot a \cdot e)) - B \cdot (35 \cdot c \cdot d^3 - 3 \cdot d^2 - 3 \cdot a \cdot e) - 30 \cdot c \cdot d^2 - 2 \cdot b \cdot e^2 \cdot (2 \cdot b \cdot d - a \cdot e) + 3 \cdot c \cdot e^2 \cdot (10 \cdot b \cdot d - 8 \cdot a \cdot b \cdot d \cdot e + a \cdot e^2) / (e^8 \cdot (d + e \cdot x)^6) + 1 / 5 \cdot (B \cdot (35 \cdot c \cdot d^3 - 3 \cdot d^2 - 3 \cdot a \cdot e) - 3 \cdot b \cdot c \cdot e^2 \cdot (5 \cdot b \cdot d - 2 \cdot a \cdot e) - 15 \cdot c \cdot d^2 - 2 \cdot a \cdot e) - 3 \cdot A \cdot c \cdot e^2 \cdot (5 \cdot c \cdot d^2 - 2 \cdot b \cdot e^2 - 2 \cdot c \cdot e^2 \cdot (6 \cdot b \cdot d - a \cdot e)) / (e^8 \cdot (d + e \cdot x)^5) + 3 / 4 \cdot c \cdot (A \cdot c \cdot e \cdot (2 \cdot c \cdot b \cdot d - e) - B \cdot (7 \cdot c \cdot d^2 - 2 \cdot b \cdot e^2 - 2 \cdot c \cdot e^2 \cdot (6 \cdot b \cdot d - a \cdot e)) / (e^8 \cdot (d + e \cdot x)^4) + 1 / 3 \cdot c \cdot e^2 \cdot (7 \cdot B \cdot c \cdot d - 3 \cdot b \cdot b \cdot e - A \cdot c \cdot e) / (e^8 \cdot (d + e \cdot x)^3) - 1 / 2 \cdot B \cdot c \cdot d^3 / (e^8 \cdot (d + e \cdot x)^2) \]
\begin{verbatim}
R 1 1 2 1 3 1 2 3 4
R ((- --- A a b - --- B a )c - --- A b - --- B a b )d e
R 84 168 504 168
R +
R 1 2 1 2 1 1 3 4 3
R (- --- A a c + (- --- A b - --- B a b)c - --- B b )d e
R 210 210 105 630
R +
R 1 1 2 1 2 5 2 1 3 1 2 6
R ((- --- A b - --- B a)c - --- B b c)d e + (- --- A c - --- B b c )d e
R 168 168 168 252 84
R +
R 1 1 2 1 2 1 1 3 4 3
R (- --- A a c + (- --- A b - --- B a b)c - --- B b )d e
R 210 210 105 630
R +
R 1 1 2 1 2 5 2 1 3 1 2 6
R ((- --- A b - --- B a)c - --- B b c)d e + (- --- A c - --- B b c )d e
R 168 168 168 252 84
R +
R 1 3 7
R - --- B c d
R 72
R /
R 17 9 16 8 2 15 7 3 14 6 4 13 5 5 12 4
R e x + 9d e x + 36d e x + 84d e x + 126d e x + 126d e x
R +
R 6 11 3 7 10 2 8 9 9 8
R 84d e x + 36d e x + 9d e x + d e
R Type: Fraction(Polynomial(Fraction(Integer)))
R E 233

S 234 of 1035
d0:=normalize(t0-D(r0,x))
R
R (3) 0
R Type: Expression(Integer)
R E 234

)clear all

S 235 of 1035
t0:=(A+B*x)*(a+b*x+c*x^2)^3/(d+e*x)^11
R
R (1)
R 3 7 3 2 6 2 2 2 5
R B c x + (A c + 3B b c )x + ((3A b + 3B a)c + 3B b c)x
R +
R 2 2 3 4
R (3A a c + (3A b + 6B a b)c + B b )x
R +
R 2 3 2 3 2 2 2 2
R ((6A a b + 3B a )c + A b + 3B a b )x + (3A a c + 3A a b + 3B a b)x
R +
R 2 3 3
R (3A a b + B a )x + A a

158
\end{verbatim}
Type: Fraction(Polynomial(Integer))
\[\begin{align*}
&\text{---R 12} \\
&\text{---R *} \\
&\text{---R 4} \\
&\text{---R x} \\
&\text{---R +} \\
&\text{---R 6 3 2 1 3 3 2 7} \\
&\text{---R } ((- A a b - B a)c - A b - B a b)e \\
&\text{---R 7 7 7 7} \\
&\text{---R +} \\
&\text{---R 2 2 2 2 4 2 3 6} \\
&\text{---R } (- A a c + (- A b - B a b)c - B b)d e \\
&\text{---R 7 7 7 7 21} \\
&\text{---R +} \\
&\text{---R 1 3 4 3} \\
&\text{---R - B c d e} \\
&\text{---R 3} \\
&\text{---R *} \\
&\text{---R 3} \\
&\text{---R x} \\
&\text{---R +} \\
&\text{---R 3 2 3 2 3 2 7} \\
&\text{---R } (- A a c - A a b - B a b)e \\
&\text{---R 8 8 8} \\
&\text{---R +} \\
&\text{---R 9 9 2 3 3 9 2 6} \\
&\text{---R } ((- A a b - B a)c - A b - B a b)d e \\
&\text{---R 28 56 56 56} \\
&\text{---R +} \\
&\text{---R 3 2 3 2 3 3 1 3 2 5} \\
&\text{---R } (- A a c + (- A b - B a b)c - B b)d e \\
&\text{---R 28 28 28 14 28} \\
&\text{---R +} \\
&\text{---R 3 3 2 3 2 3 2 3 4} \\
&\text{---R } ((- A b - B a)c - B b c)d e + (- A c - B b c)d e \\
&\text{---R 28 28 28 56 56} \\
&\text{---R +} \\
&\text{---R 1 3 5 2} \\
&\text{---R - B c d e} \\
&\text{---R 8} \\
&\text{---R *} \\
&\text{---R 2} \\
&\text{---R x} \\
&\text{---R +} \\
&\text{---R 1 2 1 3 7} \\
&\text{---R } ((- A a b - B a)e + (- A a c - A a b - B a b)d e \\
&\text{---R 3 9 12 12 12 12} \\
\end{align*}\]
\[\begin{array}{c}
\text{Type: Fraction(Polynomial(Fraction(Integer)))}
\end{array}\]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ t_0 := (e^x)^m (A + B x) \]
\[ r_0 := A(e^x)^{(1+m)}/(e^{(1+m)}) + B(e^x)^{(2+m)}/(e^{2*(2+m)}) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ t_0 := (e^x)^m (A + B x) (a + b x + c x^2) \]

\[ r_0 := A(e^x)^{(1+m)}/(e^{(1+m)}) + B(e^x)^{(2+m)}/(e^{2*(2+m)}) \]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (e^x)^m (A + B x) (a + b x + c x^2) \]
\[ r_0 := aA(e^x)^{(1+m)}/(e^x) + (A+b+aB)(e^x)^{(2+m)}/(e^x) + (bB+A)(e^x)^{(3+m)}/(e^x) + Bc(e^x)^{(4+m)}/(e^x) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (e^x)^m(A+Bx)(a+b+cx^2)^2 \]
\[ r_0 := a^2 A (e x)^m + (2 A b + 2 B a) c + 2 A b + 2 B a ) x + A a \]

\[ + (2 A a c + A b + 2 B b c) x + (2 A a b + B a ) x + A a \]

\[ + (2 A a b + 2 B a c + B b ) x + ((2A b + 2 B a)c + B b )x \]

\[ + (2A a c + A b + 2 B b c)x + (2A a b + B a )x + A a \]

\[ + \]

\[ + (2A a c + A b + 2 B b c) x + (2A a b + B a ) x + A a \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]

\[ + \]
\[
(2A \ a \ c + 2B \ a \ b)e^m + (36A \ a \ c + 18A \ b + 36B \ a \ b)e^m
\]
\[
+ 2 \ 3 3
\]
\[
(242A \ a \ c + 121A \ b + 242B \ a \ b)e^m
\]
\[
+ 2 \ 3 2
\]
\[
(744A \ a \ c + 372A \ b + 744B \ a \ b)e^m
\]
\[
+ 2 \ 3
\]
\[
(1016A \ a \ c + 508A \ b + 1016B \ a \ b)e^m
\]
\[
+ 2 \ 3
\]
\[
(480A \ a \ c + 240A \ b + 480B \ a \ b)e^m
\]
\[
* m + 3
\]
\[
(e^x)
\]
\[
+ 2 \ 4 5 2 \ 4 4
\]
\[
(2A \ a \ b + 2B \ a \ )e^m + (38A \ a \ b + 19B \ a \ )e^m
\]
\[
+ 2 \ 4 3 2 \ 4 2
\]
\[
(274A \ a \ b + 137B \ a \ )e^m + (922A \ a \ b + 461B \ a \ )e^m
\]
\[
+ 2 \ 4 2 \ 4
\]
\[
(1404A \ a \ b + 702B \ a \ )e^m + (720A \ a \ b + 360B \ a \ )e^m
\]
\[
* m + 2
\]
\[
(e^x)
\]
\[
+ 2 \ 5 5 2 \ 5 4 2 \ 5 3 2 \ 5 2 2 \ 5
\]
\[
A \ a \ e^m + 20A \ a \ e^m + 155A \ a \ e^m + 580A \ a \ e^m + 1044A \ a \ e^m
\]
\[
+ 2 \ 5
\]
\[
720A \ a \ e^m
\]
\[
* m + 1
\]
\[
(e^x)
\]
\[
/ 6 \ 6 6 \ 5 6 \ 4 6 \ 3 6 \ 2 6 6
\]
\[
A \ e^m + 21e^m + 175e^m + 735e^m + 1624e^m + 1764e^m + 720e^m
\]

Type: Expression(Integer)

--E 245

--S 246 of 1035

d0:=normalize(t0-D(r0,x))

--R
--R
--R (3) 0

Type: Expression(Integer)

--E 246

165
\text{clear all}

\texttt{--S 247 of 1035}
\texttt{t0:=(e*x)^m*(A+B*x)*(a+b*x+c*x^2)^3}
\texttt{--R}
\texttt{--R}
\texttt{--R (1)}
\texttt{--R 3 7 3 2 6 2 2 2 5}
\texttt{--R B c x + (A c + 3B b c )x + ((3A b + 3B a)c + 3B b c)x}
\texttt{--R +}
\texttt{--R 2 2 3 4}
\texttt{--R (3A a c + (3A b + 6B a b)c + B b )x}
\texttt{--R +}
\texttt{--R 2 3 2 3 2 2 2 2}
\texttt{--R ((6A a b + 3B a )c + A b + 3B a b )x + (3A a c + 3A a b + 3B a b)x}
\texttt{--R +}
\texttt{--R 2 3 3}
\texttt{--R (3A a b + B a )x + A a}
\texttt{--R *}
\texttt{--R m}
\texttt{--R (e x)}
\texttt{--R Type: Expression(Integer)}
\texttt{--E 247}

\texttt{--S 248 of 1035}
\texttt{r0:=a^3*A*(e*x)^(1+m)/(e*(1+m))+a^2*(3*A*b+a*B)*(e*x)^(2+m)/(e^2*(2+m))+}
\texttt{3*a*(a*b*B+A*(b^2+a*c))*(e*x)^(3+m)/(e^3*(3+m))+(3*a*B*(b^2+a*c)+A*}
\texttt{(b^3+6*a*b*c))*(e*x)^(4+m)/(e^4*(4+m))+(b^3*B+3*A*b^2*c+6*a*b*B*c+}
\texttt{3*a*B*c^2)*(e*x)^(5+m)/(e^5*(5+m))+(b^4+B*a+b*c+a*B*c)*_}
\texttt{(e*x)^6+m)/(e^6*(6+m))+(e^7*B+3*b*B+A*c)*(e*x)^(7+m)/(e^7*(7+m))+_}
\texttt{B*c^3)*(e*x)^(8+m)/(e^8*(8+m))}
\texttt{--R}
\texttt{--R}
\texttt{--R (2)}
\texttt{--R 3 7 3 6 3 5 3 4 3 3 3 2}
\texttt{--R B c m + 28B c m + 322B c m + 1960B c m + 6769B c m + 13132B c m}
\texttt{--R +}
\texttt{--R 3 3}
\texttt{--R 1306B c m + 5040B c}
\texttt{--R *}
\texttt{--R m + 8}
\texttt{--R (e x)}
\texttt{--R +}
\texttt{--R 3 2 7 3 2 6}
\texttt{--R (A c + 3B b c )e m + (29A c + 87B b c )e m}
\texttt{--R +}
\texttt{--R 3 2 5 3 2 4}
\texttt{--R (343A c + 1029B b c )e m + (2135A c + 6405B b c )e m}
\texttt{--R +}
\begin{align*}
&\text{---R} 3 2 3 2 2 \\
&\text{---R} (7504A c + 22512B b c)e m + (14756A c + 44268B b c)e m \\
&\text{---R} + \\
&\text{---R} 3 2 3 2 \\
&\text{---R} (14832A c + 44496B b c)e m + (5760A c + 17280B b c)e m \\
&\text{---R} * \\
&\text{---R} m + 7 \\
&\text{---R} (e x) \\
&\text{---R} + \\
&\text{---R} 2 2 2 7 2 2 2 6 \\
&\text{---R} ((3A b + 3B a)c + 3B b c)e m + ((90A b + 90B a)c + 90B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 5 \\
&\text{---R} ((1098A b + 1098B a)c + 1098B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 4 \\
&\text{---R} ((7020A b + 7020B a)c + 7020B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 3 \\
&\text{---R} ((25227A b + 25227B a)c + 25227B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 2 \\
&\text{---R} ((50490A b + 50490B a)c + 50490B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 \\
&\text{---R} ((51432A b + 51432B a)c + 51432B b c)e m \\
&\text{---R} + \\
&\text{---R} 2 2 2 \\
&\text{---R} ((20160A b + 20160B a)c + 20160B b c)e \\
&\text{---R} * \\
&\text{---R} m + 6 \\
&\text{---R} (e x) \\
&\text{---R} + \\
&\text{---R} 2 2 3 7 \\
&\text{---R} (3A a c + (3A b + 6B a b)c + B b )e m \\
&\text{---R} + \\
&\text{---R} 2 2 3 6 \\
&\text{---R} (93A a c + (93A b + 186B a b)c + 31B b )e m \\
&\text{---R} + \\
&\text{---R} 2 2 3 5 \\
&\text{---R} (1173A a c + (1173A b + 2346B a b)c + 391B b )e m \\
&\text{---R} + \\
&\text{---R} 2 2 3 4 \\
&\text{---R} (7743A a c + (7743A b + 15466B a b)c + 2581B b )e m \\
&\text{---R} + \\
&\text{---R} 2 2 3 3 \\
&\text{---R} (28632A a c + (28632A b + 57264B a b)c + 9544B b )e m \\
&\text{---R} + \\
&\text{---R} 2 2 3 2 \\
&\text{---R} (58692A a c + (58692A b + 117384B a b)c + 19564B b )e m
\end{align*}
\[\begin{align*}
&+ \quad 2 \quad 2 \quad 3 \quad 3 \\
&+ \quad (60912A \ a \ c + (60912A \ b + 121824B \ a \ b) \ c + 20304B \ b) \ e \ m \\
&+ \quad 2 \quad 2 \quad 3 \quad 3 \\
&+ \quad (24192A \ a \ c + (24192A \ b + 48384B \ a \ b) \ c + 8064B \ b) \ e \\
&* \quad m + 5 \\
&(e \ x) \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 7 \\
&+ \quad ((6A \ a \ b + 3B \ a) \ c + A \ b + 3B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 6 \\
&+ \quad ((192A \ a \ b + 96B \ a) \ c + 32A \ b + 96B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 5 \\
&+ \quad ((2508A \ a \ b + 1254B \ a) \ c + 418A \ b + 1254B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 4 \\
&+ \quad ((17184A \ a \ b + 8592B \ a) \ c + 2864A \ b + 8592B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 3 \\
&+ \quad ((65958A \ a \ b + 32979B \ a) \ c + 10993A \ b + 32979B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \quad 2 \\
&+ \quad ((139872A \ a \ b + 69936B \ a) \ c + 23312A \ b + 69936B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 3 \quad 2 \quad 4 \\
&+ \quad ((149256A \ a \ b + 74628B \ a) \ c + 24876A \ b + 74628B \ a \ b) \ e \ m \\
&* \quad m + 4 \\
&(e \ x) \\
&+ \quad 2 \quad 2 \quad 2 \quad 5 \quad 7 \quad 2 \quad 2 \quad 2 \quad 5 \quad 6 \\
&+ \quad (3A \ a \ c + 3A \ a \ b + 3B \ a \ b) \ e \ m + (99A \ a \ c + 99A \ a \ b + 99B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 2 \quad 2 \quad 5 \quad 5 \\
&+ \quad (1341A \ a \ c + 1341A \ a \ b + 1341B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 2 \quad 2 \quad 5 \quad 4 \\
&+ \quad (9585A \ a \ c + 9585A \ a \ b + 9585B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 2 \quad 2 \quad 5 \quad 3 \\
&+ \quad (38592A \ a \ c + 38592A \ a \ b + 38592B \ a \ b) \ e \ m \\
&+ \quad 2 \quad 2 \quad 2 \quad 5 \quad 2 \\
\end{align*}\]
\[
\begin{align*}
\text{R} & \quad (86076A \ a \ c + 86076A \ a \ b + 86076B \ a \ b)e^m \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 2 \quad 2 \quad 5 \\
\text{R} & \quad (96144A \ a \ c + 96144A \ a \ b + 96144B \ a \ b)e^m \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 2 \quad 2 \quad 5 \\
\text{R} & \quad (40320A \ a \ c + 40320A \ a \ b + 40320B \ a \ b)e \\
\text{R} & \quad * \\
\text{R} & \quad m + 3 \\
\text{R} & \quad (e \ x) \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 6 \quad 7 \quad 2 \quad 3 \quad 6 \quad 6 \\
\text{R} & \quad (3A \ a \ b + B \ a \ e)m + (102A \ a \ b + 34B \ a \ e)m \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 6 \quad 5 \quad 2 \quad 3 \quad 6 \quad 4 \\
\text{R} & \quad (1434A \ a \ b + 478B \ a \ e)m + (10740A \ a \ b + 3580B \ a \ e)m \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 6 \quad 3 \quad 2 \quad 3 \quad 6 \quad 2 \\
\text{R} & \quad (45867A \ a \ b + 15289B \ a \ e)m + (110118A \ a \ b + 36706B \ a \ e)m \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 6 \quad 3 \quad 2 \quad 3 \quad 6 \quad 6 \\
\text{R} & \quad (134136A \ a \ b + 44712B \ a \ e)m + (60480A \ a \ b + 20160B \ a \ e)m \\
\text{R} & \quad * \\
\text{R} & \quad m + 2 \\
\text{R} & \quad (e \ x) \\
\text{R} & \quad + \\
\text{R} & \quad 3 \quad 7 \quad 7 \quad 3 \quad 7 \quad 6 \quad 3 \quad 7 \quad 5 \quad 3 \quad 7 \quad 4 \quad 3 \quad 7 \quad 3 \\
\text{R} & \quad A \ a \ e \ m + 35A \ a \ e \ m + 511A \ a \ e \ m + 4025A \ a \ e \ m + 18424A \ a \ e \ m \\
\text{R} & \quad + \\
\text{R} & \quad 3 \quad 7 \quad 2 \quad 3 \quad 7 \quad 2 \quad 3 \quad 7 \\
\text{R} & \quad 48860A \ a \ e \ m + 69264A \ a \ e \ m + 40320A \ a \ e \\
\text{R} & \quad * \\
\text{R} & \quad m + 1 \\
\text{R} & \quad (e \ x) \\
\text{R} & \quad / \\
\text{R} & \quad 8 \quad 8 \quad 8 \quad 7 \quad 8 \quad 6 \quad 8 \quad 5 \quad 8 \quad 4 \quad 8 \quad 3 \quad 8 \quad 2 \\
\text{R} & \quad e \ m + 36e \ m + 546e \ m + 4536e \ m + 22449e \ m + 67284e \ m + 118124e \ m \\
\text{R} & \quad + \\
\text{R} & \quad 8 \quad 8 \\
\text{R} & \quad 109584e \ m + 40320e \\
\text{R} & \quad Type: Expression(Integer) \\
\text{E} & \quad 248 \\
\end{align*}
\]
\[ t_0 = \frac{(A+Bx)(d+ex)^m}{(a+b+cx^2)} \]

\[ t_0 = \frac{(Bx+A)(e+d)}{2} \]

\[ t_0 = \frac{c x + bx + a}{2} \]

\[ \text{Type: Expression(Integer)} \]
\[ d_0 := D(m_0, x) \]

\[ \text{clear all} \]

\[ t_0 := (A + B x) (d + e x)^2 / (a + b x + c x^2) \]

\[ \begin{align*}
2 & 3 & 2 & 2 & 2 & 2 \\
B & e & x & + & (A & e & + & 2 B & d & e) x & + & (2 A & d & e & + & B & d) & x & + & A & d \\
\end{align*} \]

\[ r_0 := e \left( 2 B c e d - b B ^ 2 - a A c e \right) x / c^2 + 1 / 2 B e ^ 2 / c^2 + 1 / 2 \left( A c e \left( 2 c d - b e \right) + B \left( c^2 d^2 - b^2 e^2 - c e \left( 2 b d + a e \right) \right) \right) * \log(c x + b x + a) / c^3 + (b^3 B e^2 - b^2 c e \left( 2 B b + a c \right) + 2 c^2 \left( A c d^2 - 2 a B d e - a A e ^ 2 \right) + b c \left( B c d^2 + 2 A c e d - 3 a B e^2 \right) ) * \text{atanh}((b + 2 c x) / \sqrt{b^2 - 4 a c}) / (c^3 * \sqrt{b^2 - 4 a c}) \]
d0 := normalize(t0 - D(r0, x))
(3) 0
r0 := B*e*x/c + 1/2*(B*c*d-b*B*e+A*c*e)*log(a+b*x+c*x^2)/c^2-(b^2*B*e-b*c*(B*d+A*e)+2*c*(A*c*d-a*B*e))*atanh((b+2*c*x)/sqrt(b^2-4*a*c))/c^2*sqrt(b^2-4*a*c)
\( d_0 := \text{normalize}(t_0 - D(r_0, x)) \)  
\( t_0 := (A + B \times x)/(a + b \times x + c \times x^2) \)  
\( r_0 := \frac{1/2 \times B \times \log(a + b \times x + c \times x^2)}{c} + \frac{(b \times B - 2 \times A \times c) \times \text{atanh}((b + 2 \times c \times x)/\sqrt{b^2 - 4 \times a \times c})}{c \times \sqrt{b^2 - 4 \times a \times c}} \)
\( t_0 := \frac{A + Bx}{(d + ex)(a + bx + cx^2)} \)

\[
\begin{align*}
(1) & \quad \frac{Bx + A}{3 - 2} \\
& \quad \frac{cx + (be + cd)x + (ae + bd)x + ad}{cex + (be + cd)x + (ae + bd)x + ad}
\end{align*}
\]

\( r_0 := -\frac{(Bd - Ae)\log(d + ex)}{(cd^2 - bde + e^2) + \frac{1}{2}(Bd - Ae)\log(a + bx + cx^2)} + \frac{(Bd - Ae)\log(a + bx + cx^2)}{(cd^2 - bde + e^2)} + \frac{(2Ae - 4Bd)\text{atanh}(\frac{2c}{\sqrt{b^2 - 4ac}})}{(cd^2 - bde + e^2)\sqrt{b^2 - 4ac}}
\]

\( d_0 := \text{normalize}(t0 - D(r0, x)) \)

\( \frac{2c}{\sqrt{b^2 - 4ac}} \)
\[ t_0 := \frac{(A + B \cdot x)}{((d + e \cdot x) - 2 \cdot (a + b \cdot x + c \cdot x^2))} \]

(1)

\[ \frac{B \cdot x + A}{2 + 4 \cdot c \cdot e \cdot x + (b \cdot e + 2 \cdot c \cdot d \cdot e) \cdot x + (a \cdot e + 2 \cdot b \cdot d \cdot e + c \cdot d) \cdot x + (2 \cdot a \cdot d \cdot e + b \cdot d) \cdot x} \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

(2)

\[ \frac{B \cdot d - A \cdot e}{((c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) \cdot (d + e \cdot x))} + \frac{(A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (c \cdot d^2 - a \cdot e^2) \cdot \log(d + e \cdot x)}{(c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)^2} - \frac{1}{2} \cdot \frac{(A \cdot e \cdot (2 \cdot c \cdot d - b \cdot e) - B \cdot (c \cdot d^2 - a \cdot e^2) \cdot \log(a + b \cdot x + c \cdot x^2)}{(c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)^2} - \frac{1}{2} \cdot \frac{2 \cdot c \cdot (c \cdot d^2 - 2 \cdot a \cdot b \cdot e + a \cdot e^2 \cdot e^2) \cdot \text{atanh}((b + 2 \cdot c) \cdot x)}{(c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2)^2 \cdot \sqrt(b^2 - 4 \cdot a \cdot c)} \]
\[ \log(c \, x + b \, x + a) + \]
\[ \frac{(- \, 2A \, b + 2B \, a) \, e + 4A \, c \, d \, e - 2B \, c \, d \, e \, x + (- \, 2A \, b + 2B \, a) \, d \, e \, x + (- \, 2A \, b + 2B \, a) \, d \, e}{-2A \, b + 2B \, a \, d \, e + (2A \, b + 2B \, a) \, d \, e - 2B \, c \, d \, e} \]
\[ \frac{4A \, c \, d \, e - 2B \, c \, d \, e}{-2A \, b + 2B \, a \, d \, e + (2A \, b + 2B \, a) \, d \, e - 2B \, c \, d \, e} \]
\[ \log(e \, x + d) + \]
\[ \frac{(- \, 2A \, b + 2B \, a) \, d \, e + (2A \, b + 2B \, a) \, d \, e - 2B \, c \, d \, e}{-2A \, b + 2B \, a \, d \, e + (2A \, b + 2B \, a) \, d \, e - 2B \, c \, d \, e} \]
\[ \frac{(- \, 2A \, b + 2B \, a) \, e + (2A \, b + 2B \, a) \, e - 2B \, c \, d \, e}{-2A \, b + 2B \, a \, e + (2A \, b + 2B \, a) \, e - 2B \, c \, d \, e} \]
\[(3a\ d\ e + 3b\ d\ e + c\ d)x + (3a\ d\ e + b\ d)x + a\ d\]

Type: Fraction(Polynomial(Integer))
\[ \text{atanh}(\ldots - 4a \cdot c + b) + \frac{2 \cdot 5 \cdot 4 \cdot 2 \cdot 3}{(A \cdot a \cdot c - A \cdot b + B \cdot a \cdot b) \cdot e + (3A \cdot b - 3B \cdot a) \cdot c \cdot d \cdot e - 3A \cdot c \cdot d \cdot e} + 2 \cdot 3 \cdot 2 \cdot B \cdot c \cdot d \cdot e \]

\[ \times \]

\[ = \frac{2 \cdot 4 \cdot 2 \cdot 3}{(2A \cdot a \cdot c - 2A \cdot b + 2B \cdot a \cdot b) \cdot d \cdot e + (6A \cdot b - 6B \cdot a) \cdot c \cdot d \cdot e} + 2 \cdot 3 \cdot 2 \cdot 4 \cdot B \cdot c \cdot d \cdot e \]

\[ \times \]

\[ = \frac{2 \cdot 2 \cdot 3 \cdot 3 \cdot 2 \cdot 2 \cdot 4}{(A \cdot a \cdot c - A \cdot b + B \cdot a \cdot b) \cdot d \cdot e + (3A \cdot b - 3B \cdot a) \cdot c \cdot d \cdot e - 3A \cdot c \cdot d \cdot e} + 2 \cdot 5 \cdot B \cdot c \cdot d \cdot e \]

\[ \times \]

\[ = \frac{2}{\log(c \cdot x + b \cdot x + a)} + \frac{2 \cdot 5 \cdot 4}{(- 2A \cdot a \cdot c + 2A \cdot b - 2B \cdot a \cdot b) \cdot e + (- 6A \cdot b + 6B \cdot a) \cdot c \cdot d \cdot e} + 2 \cdot 2 \cdot 3 \cdot 2 \cdot 3 \cdot 2 \cdot 4 \cdot 12A \cdot c \cdot d \cdot e - 4B \cdot c \cdot d \cdot e \]

\[ \times \]

\[ = \frac{2 \cdot 4 \cdot 2 \cdot 3}{(- 4A \cdot a \cdot c + 4A \cdot b - 4B \cdot a \cdot b) \cdot d \cdot e + (- 12A \cdot b + 12B \cdot a) \cdot c \cdot d \cdot e} + 2 \cdot 3 \cdot 2 \cdot 2 \cdot 4 \cdot 12A \cdot c \cdot d \cdot e - 4B \cdot c \cdot d \cdot e \]

\[ \times \]

\[ = \frac{2 \cdot 2 \cdot 3 \cdot 3 \cdot 2}{(- 2A \cdot a \cdot c + 2A \cdot b - 2B \cdot a \cdot b) \cdot d \cdot e + (- 6A \cdot b + 6B \cdot a) \cdot c \cdot d \cdot e} \]
\[ \log(e^x + d) + 2^5 \cdot (2a b - 2b a) e + (-4a c - 2A b + 2B a b) d e + \]
\[ + 2^3 \cdot 2^3 \cdot 2^4 \cdot 6a b c d e + (-4A c - 2B b c) d e + 2B c d e * x + 2^5 \cdot 2^4 \cdot 2^2 \cdot 3^2 \cdot 2^3 \cdot (-A a e + (4A a b - B a) d e + (-6A a c - 3A b) d e + 2B b a c + 8 b b b) d e + (-5A c - 4B b c) d e + 3B c d * x + \]
\[ + \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
\[ x \]
\[ 2 \]
\[ \]
d0:=normalize(t0-D(r0,x))

T0:=(5-x)*(3+2*x)^4/(2+5*x+3*x^2)

R 5 4 3 2
R - 16x - 16x + 264x + 864x + 999x + 405
R (1) ------------------------------------------
R 2
R 3x + 5x + 2

R Type: Fraction(Polynomial(Integer))

R 10625log(3x + 2) - 1458log(x + 1) - 324x + 288x + 10404x + 34728x
R (2) --------------------------------------------------------------------
R 243

R Type: Expression(Integer)

r0:=11576/81*x+1156/27*x^2+32/27*x^3-4/3*x^4-6*log(1+x)+10625/243*log(2+3*x)

R 4 3 2
R 10625log(3x + 2) - 1458log(x + 1) - 324x + 288x + 10404x + 34728x
R (2) --------------------------------------------------------------------
R 243

R Type: Expression(Integer)

d0:=normalize(t0-D(r0,x))

T0:=(5-x)*(3+2*x)^3/(2+5*x+3*x^2)
\[ r_0 := \frac{922}{27}x + \frac{26}{9}x^2 - \frac{8}{9}x^3 - 6\log(1+x) + \frac{2125}{81}\log(2+3x) \]

(1) \[ \frac{2125\log(3x + 2) - 486\log(x + 1) - 72x + 234x + 2766x}{81} \]

Type: Expression(Integer)

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

(3) \(0\)

Type: Expression(Integer)

\)clear all\)

\[ t_0 := \frac{(5-x)(3+2x)^2}{(2+5x+3x^2)^2} \]

(1) \[ \frac{3x + 5x + 2}{2} \]

Type: Fraction(Polynomial(Integer))

\[ r_0 := \frac{44}{9}x - \frac{2}{3}x^2 - 6\log(1+x) + \frac{425}{27}\log(2+3x) \]

(2) \[ \frac{425\log(3x + 2) - 162\log(x + 1) - 18x + 132x}{27} \]

Type: Expression(Integer)
\[
d0:=\text{normalize}(t0-D(r0,x)) \\
--R \\
--R (3) 0 \\
--R \text{ Type: Expression(Integer)} \\
--E 282 \\
\]

)clear all

\[
t0:=(5-x)*(3+2*x)/(2+5*x+3*x^2) \\
--R \\
--R 2 \\
--R -2x + 7x + 15 \\
--R (1) ---------- \\
--R 2 \\
--R 3x + 5x + 2 \\
--R \text{ Type: Fraction(Polynomial(Integer))} \\
--E 283 \\
\]

\[
r0:=-2/3*x-6*log(1+x)+85/9*log(2+3*x) \\
--R \\
--R 85\log(3x+2) - 54\log(x+1) - 6x \\
--R (2) ------------------------ \\
--R 9 \\
--R \text{ Type: Expression(Integer)} \\
--E 284 \\
\]

\[
d0:=\text{normalize}(t0-D(r0,x)) \\
--R \\
--R (3) 0 \\
--R \text{ Type: Expression(Integer)} \\
--E 285 \\
\]

)clear all

\[
t0:=(5-x)/(2+5*x+3*x^2) \\
--R \\
--R -x + 5 \\
--R (1) ---------- \\
\]
\[
\begin{align*}
&---R \quad 2 \\
&---R \quad 3x + 5x + 2 \\
&---R \quad \text{Type: Fraction(Polynomial(Integer))} \\
&---E 286 \\
&---S 287 \text{ of } 1035 \\
r0 := -6 \log(1+x) + 17/3 \log(2+3x) \\
&---R \\
&---R \\
&---R \quad 17 \log(3x + 2) - 18 \log(x + 1) \\
&---R \quad (2) \quad \text{-----------------------------} \\
&---R \quad 3 \\
&---R \quad \text{Type: Expression(Integer)} \\
&---E 287 \\
&---S 288 \text{ of } 1035 \\
d0 := \text{normalize}(t0-D(r0,x)) \\
&---R \\
&---R \\
&---R \quad (3) \quad 0 \\
&---R \quad \text{Type: Expression(Integer)} \\
&---E 288 \\
&\text{)clear all} \\
&---S 289 \text{ of } 1035 \\
t0 := (5-x)/((3+2x)*(2+5x+3x^2)) \\
&---R \\
&---R \\
&---R \quad - x + 5 \\
&---R \quad (1) \quad \text{-----------------} \\
&---R \quad 3 \quad 2 \\
&---R \quad 6x + 19x + 19x + 6 \\
&---R \quad \text{Type: Fraction(Polynomial(Integer))} \\
&---E 289 \\
&---S 290 \text{ of } 1035 \\
r0 := -6 \log(1+x) + 13/5 \log(3+2x)+17/5 \log(2+3x) \\
&---R \\
&---R \\
&---R \quad 17 \log(3x + 2) + 131 \log(2x + 3) - 30 \log(x + 1) \\
&---R \quad (2) \quad \text{--------------------------------------------} \\
&---R \quad 5 \\
&---R \quad \text{Type: Expression(Integer)} \\
&---E 290 \\
&---S 291 \text{ of } 1035 \\
d0 := \text{normalize}(t0-D(r0,x)) \\
&---R \\
&---R
\end{align*}
\]
R (3) 0

Type: Expression(Integer)

E 291

clear all

---S 292 of 1035
t0:=(5-x)/((3+2*x)^2*(2+5*x+3*x^2))
---R
---R
---R - x + 5
---R (1) -----------------------------
---R 4 3 2
---R 12x + 56x + 95x + 69x + 18
---R Type: Fraction(Polynomial(Integer))
---E 292

---S 293 of 1035
r0:=(-13/5)/(3+2*x)-6*log(1+x)+99/25*log(3+2*x)+51/25*log(2+3*x)
---R
---R
---R (2)
---R (102x + 153)log(3x + 2) + (198x + 297)log(2x + 3)
---R +
---R (- 300x - 450)log(x + 1) - 65
---R /
---R 50x + 75
---R Type: Expression(Integer)
---E 293

---S 294 of 1035
d0:=normalize(t0-D(r0,x))
---R
---R
---R (3) 0
---R Type: Expression(Integer)
---E 294

clear all

---S 295 of 1035
t0:=(5-x)/((3+2*x)^3*(2+5*x+3*x^2))
---R
---R
---R - x + 5
---R (1) ----------------------------------------
---R 5 4 3 2
---R 24x + 148x + 358x + 423x + 243x + 54
---R Type: Fraction(Polynomial(Integer))
---E 295
\[ r_0 := \frac{-13/10}{(3+2x)^2} + \frac{-99/25}{3+2x} - 6\log(1+x) + \frac{597/125}{3+2x} + \frac{153/125}{2+3x} \]

\[ (1224x + 3672x + 2754)\log(3x + 2) + (4776x + 14328x + 10746)\log(2x + 3) + (- 6000x - 18000x - 13500)\log(x + 1) - 1980x - 3295 \]

\[ \frac{1000x + 3000x + 2250}{1000x + 3000x + 2250} \]

\[ \text{Type: Expression(Integer)} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ (3) 0 \]

\[ \text{Type: Expression(Integer)} \]

\[ )\text{clear all} \]

\[ t_0 := \frac{(5-x)}{((3+2x)^4(2+5x+3x^2))} \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

\[ r_0 := \frac{-13/15}{(3+2x)^3} + \frac{-99/50}{(3+2x)^2} + \frac{-597/125}{(3+2x)} - 6\log(1+x) + \frac{3291/625}{3+2x} + \frac{459/625}{2+3x} \]

\[ (22032x + 99144x + 148716x + 74358)\log(3x + 2) + (157968x + 710856x + 1066284x + 533142)\log(2x + 3) \]
(--R +
  (--R 3 2 2
  (--R (- 180000x - 810000x - 1215000x - 607500)log(x + 1) - 71640x - 229770x
  (--R +
  (--R - 186715
  (--R /
  (--R 3 2
  (--R 30000x + 135000x + 202500x + 101250
  (--R Type: Expression(Integer)
  (--R (3) 0
  (--R Type: Expression(Integer)
  (--R )
)

--S 300 of 1035
d0:=normalize(t0-D(r0,x))

--R

--R (3) 0

--R

--E 300

)clear all

--S 301 of 1035
t0:=(5-x)*(3+2*x)^4/(2+5*x+3*x^2)^2

--R

--R

(--R 5 4 3 2
  (--R - 16x - 16x + 264x + 864x + 999x + 405
  (--R (1) ------------------------------------------
  (--R 4 3 2
  (--R 9x + 30x + 37x + 20x + 4
  (--R Type: Fraction(Polynomial(Integer))
  (--E 301

--S 302 of 1035
r0:=15496/9*x+2888/3*x^2+560/3*x^3-(3+2*x)^4*(29+35*x)/(2+5*x+3*x^2)+_
  83*log(1+x)-1625/27*log(2+3*x)

--R

--R (2)

--R

(--R 4 3 2
  (--R (- 4875x - 8125x - 3250)log(3x + 2) + (6723x + 11205x + 4482)log(x + 1)
  (--R +
  (--R 4 3 2
  (--R - 72x + 216x - 88824x - 152697x - 63423
  (--R /
  (--R 2
  (--R 81x + 135x + 54
  (--R Type: Expression(Integer)
  (--E 302

186
d0:=normalize(t0-D(r0,x))
--R
--R (3) 0
--R Type: Expression(Integer)
--E 303

)clear all

---S 304 of 1035

t0:=(5-x)*(3+2*x)^3/(2+5*x+3*x^2)^2
--R
--R
--R 4 3 2
--R - 8x + 4x + 126x + 243x + 135
--R (1) --------------------------------
--R 4 3 2
--R 9x + 30x + 37x + 20x + 4
--R Type: Fraction(Polynomial(Integer))
--E 304

---S 305 of 1035

r0:=3068/9*x+280/3*x^2-(3+2*x)^3*(29+35*x)/(2+5*x+3*x^2)+71*log(1+x)-
1825/27*log(2+3*x)
--R
--R
--R (2)
--R 2
--R (- 5475x - 9125x - 3650)log(3x + 2) + (5751x + 9585x + 3834)log(x + 1)
--R +
--R 3 2
--R - 72x - 28158x - 49389x - 21141
--R /
--R 2
--R 81x + 135x + 54
--R Type: Expression(Integer)
--E 305

---S 306 of 1035

d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 306

)clear all

---S 307 of 1035
\[
t_0 := \frac{(5-x)(3+2x)^2}{(2+5x+3x^2)^2}
\]

---R
---R
---R \[
\begin{align*}
&3x^2 - 4x + 8x + 51x + 45 \\
&4x^3 + 3x^2 + 2x^2
\end{align*}
\]

---R

\[
9x^4 + 30x^3 + 37x^2 + 20x^4
\]

---R Type: Fraction(Polynomial(Integer))
---E 307

---S 308 of 1035

\[
r_0 := \frac{140}{3x} - (3+2x)^2 \left( \frac{29+35x}{(2+5x+3x^2)^2} + 59 \log(1+x) - 535/9 \log(2+3x) \right)
\]

---R
---R
---R \[
\begin{align*}
&2 \quad 2 \\
&- 1605x - 2675x - 1070 \log(3x + 2) + (1593x + 2655x + 1062) \log(x + 1) \\
&+ \\
&2724x + 5127x + 2349
\end{align*}
\]

---R /
---R \[
27x + 45x + 18
\]

---R Type: Expression(Integer)
---E 308

---S 309 of 1035

\[
d_0 := \text{normalize}(t_0 - D(r_0, x))
\]

---R
---R
---R \[
(3) \quad 0
\]

---R Type: Expression(Integer)
---E 309

)clear all

---S 310 of 1035

\[
t_0 := \frac{(5-x)(3+2x)^2}{(2+5x+3x^2)^2}
\]

---R
---R
---R \[
2 \\
- 2x + 7x + 15
\]

---R \[
\begin{align*}
&4x^3 + 3x^2 + 2x^2 \\
&9x^4 + 30x^3 + 37x^2 + 20x^4
\end{align*}
\]

---R Type: Fraction(Polynomial(Integer))
---E 310

---S 311 of 1035
\( r_0 := -(3+2x)(29+35x)/(2+5x+3x^2) - 94\cdot \text{atanh}(5+6x) \)

\( -x + 5 \)

\( \frac{189}{4} \)
\[ t_0 := \frac{5-x}{((3+2x)^2)(2+5x+3x^2)^2} \]

\[ r_0 := -\frac{3}{5} \left(37+47x\right)/(2+5x+3x^2) + 23\log(1+x) + 52/25\log(3+2x) - 627/25\log(2+3x) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[
\frac{-454}{25} \div (3+2x) - \frac{3}{5} \frac{(37+47x)}{(3+2x)(2+5x+3x^2)} + 11 \log(1+x) + \frac{812}{125} \log(3+2x) - \frac{2187}{125} \log(2+3x)
\]

\[
-\frac{13122x - 41553x - 41553x - 13122}{3+2x^2} + \frac{4872x + 15428x + 15428x + 4872}{3+2x^2} \log(2x + 3) + \frac{8250x + 26125x + 26125x + 8250}{3+2x^2} \log(x + 1) - \frac{6810x - 14875x - 7315}{750x + 2375x + 2375x + 750}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
-d0 = \text{normalize}(t0 - D(r0, x))
\]

\[
-\frac{-x + 5}{72x + 564x + 1862x + 3355x + 3560x + 2223x + 756x + 108}
\]

\[
\text{Type: Fraction(Polynomial(Integer))}
\]

\[
r_0 := \frac{-428/25}{(3+2x)^2} + \frac{-2618/125}{(3+2x)} - \frac{3}{5} \frac{(37+47x)}{(3+2x)^2(2+5x+3x^2)} - \log(1+x) + \frac{8104}{625} \log(3+2x) - \frac{7479}{625} \log(2+3x)
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{clear all}
\]

\[
t_0 := \frac{5-x}{((3+2x)^3(2+5x+3x^2)^2)}
\]

\[
\text{Type: Fraction(Polynomial(Integer))}
\]
\[-R \quad (-89748x - 418824x - 710505x - 516051x - 134622)\log(3x + 2)\]

\[-R + 4 \quad 3 \quad 2\]

\[-R \quad (97248x + 453824x + 769880x + 559176x + 145872)\log(2x + 3)\]

\[-R + 4 \quad 3 \quad 2\]

\[-R \quad (-7500x - 35000x - 59375x - 43125x - 11250)\log(x + 1) - 78540x\]

\[-R + 2\]

\[-R \quad -280810x - 319835x - 113815\]

\[-R / 4 \quad 3 \quad 2\]

\[-R \quad 7500x + 36000x + 59375x + 43125x + 11250\]

\[-R \quad \frac{7500x + 35000x + 59375x + 43125x + 11250}{4}\]

\[-R \quad \text{Type: Expression(Integer)}\]

\[-E 323\]

\[-S 324 \text{ of 1035}\]

\[d0:=\text{normalize}(t0-D(r0,x))\]

\[-R\]

\[-R \quad (3) 0\]

\[-R \quad \text{Type: Expression(Integer)}\]

\[-E 324\]

\)\text{clear all}\)

\[-S 325 \text{ of 1035}\]

\[t0:=(5-x)/((3+2x)^4*(2+5x+3x^2)^2)\]

\[-R\]

\[-R \quad (1)\]

\[-R \quad -x + 5\]

\[-R \quad \frac{144x + 1344x + 5416x + 12296x + 17185x + 15126x + 8181x + 2484x + 324}{8 \quad 7 \quad 6 \quad 5 \quad 4 \quad 3 \quad 2}\]

\[-R \quad \text{Type: Fraction(Polynomial(Integer))}\]

\[-E 325\]

\[-S 326 \text{ of 1035}\]

\[r0:=(-1258/75)/(3+2x)^3+(-2212/125)/(3+2x)^2+(-16522/625)/(3+2x)-3/5*(37+47x)/(3+2x)^3*(2+5x+3x^2)-13*\log(1+x)+65816/3125*\log(3+2x)-25191/3125*\log(2+3x)\]

\[-R\]

\[-R \quad (2)\]

\[-R \quad 5 \quad 4 \quad 3 \quad 2\]

\[-R \quad -1813752x - 11184804x - 27055134x - 31967379x - 18364239x\]

\[-R +\]

\[-R \quad -4080942\]

\[-R \quad \ast\]
\[-R \log(3x + 2) +
\]
\[-R \left(\begin{array}{cccc}
5 & 4 & 3 & 2 \\
4738752x & + & 29222304x & + 70686384x & + 83520504x & + 4797864x \\
\end{array}\right) +
\]
\[-R 10662192\]
\[-R \log(2x + 3) +
\]
\[-R \left(\begin{array}{cccc}
5 & 4 & 3 & 2 \\
2925000x & - & 18037500x & - 43631250x & - 51553125x & - 29615625x \\
\end{array}\right) +
\]
\[-R 6581250\]
\[-R \log(x + 1) +
\]
\[-R \left(\begin{array}{cccc}
4 & 3 & 2 \\
2973960x & - & 14873880x & - 27167700x & - 21302995x & - 5978965 \\
\end{array}\right) /
\]
\[-R \left(\begin{array}{cccc}
5 & 4 & 3 & 2 \\
225000x & + & 1387500x & + 3356250x & + 3965625x & + 2278125x & + 506250 \\
\end{array}\right)
\]

Type: Expression(Integer)

E 326

S 327 of 1035

\(\text{d0:=normalize(t0-D(r0,x))}\)

\(-R\)
\[-R \quad (3) 0\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 327\]

\)

\(\text{clear all}\)

\(\text{S 328 of 1035}\)

\(\text{t0:=(5-x)*(3+2*x)^5/(2+5*x+3*x^2)^3}\)

\(-R\)
\[-R \quad \text{Type: Fraction(Polynomial(Integer))}\]
\[-E 328\]

\(\text{S 329 of 1035}\)

\(\text{r0:=-182920/9*x-34760/3*x^-2-6800/3*x^-3-1/2*(3+2*x)^5*(29+35*x)/(2+5*x+3*x^2)^2+5/2*(3+2*x)^4*(137+170*x)/(2+5*x+3*x^2)-1085*log(1+x)+29375/27*log(2+3*x)}\)
\[- \frac{576x + 6126120x + 20591850x + 25603665x + 13944270x + 2805921}{486x + 1620x + 1998x + 1080x + 216} \]

Type: Expression(Integer)

\[d0:=\text{normalize}(t0-D(r0,x))\]

\[
\begin{align*}
(2) & \quad 4 \quad 3 \quad 2 \\
& \quad (528750x + 1762500x + 2173750x + 1175000x + 235000) \log(3x + 2) \\
& \quad + \\
& \quad (527310x - 1757700x - 2167830x - 1171800x - 234360) \log(x + 1) \\
& \quad + \\
& \quad 5 \quad 4 \quad 3 \quad 2 \\
& \quad - 576x + 6126120x + 20591850x + 25603665x + 13944270x + 2805921 \\
& \quad / \\
& \quad 4 \quad 3 \quad 2 \\
& \quad 486x + 1620x + 1998x + 1080x + 216
\end{align*}
\]

Type: Expression(Integer)

\[t0:=(5-x)*(3+2x)^4/(2+5x+3x^2)^3\]

\[
(1) \quad \frac{-16x - 16x + 264x + 864x + 999x + 405}{6 \quad 5 \quad 4 \quad 3 \quad 2} \\
\frac{27x + 135x + 279x + 305x + 186x + 60x + 8}{6 \quad 5 \quad 4 \quad 3 \quad 2}
\]

Type: Fraction(Polynomial(Integer))

\[194\]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (5 - x) * (3 + 2x)^3 / (2 + 5x + 3x^2)^3 \]

\[ r_0 := -1/2 * (3 + 2x)^3 * (29 + 35x) / (2 + 5x + 3x^2)^2 + 141/2 * (3 + 2x) * (7 + 8x) / (2 + 5x + 3x^2) - 1410 * \text{atanh}(5 + 6x) \]
t0:=(5-x)*(3+2*x)^2/(2+5*x+3*x^2)^3

r0:=-1/2*(3+2*x)^2*(29+35*x)/(2+5*x+3*x^2)^2+1/2*(7+8*x)*(199+70*x)/(2+5*x+3*x^2)-1102*atanh(5+6*x)

d0:=normalize(t0-D(r0,x))
\[2 \times (2 \times 2 \times x + 7 \times x + 15) = 2 \times \frac{27x + 135x + 279x + 305x + 186x + 60x + 8}{(2 + 5 \times x + 3 \times x^2)^2} \]

\[\text{Type: Fraction(Polynomial(Integer))}\]

\[r_0 := -\frac{1}{2} \times (3 + 2 \times x) \times (29 + 35 \times x) / (2 + 5 \times x + 3 \times x^2)^2 + \frac{1}{2} \times \frac{725 + 842 \times x}{2 + 5 \times x + 3 \times x^2} - 842 \times \text{atanh}(5 + 6 \times x) \]

\[=-\frac{1}{2} \times (3 + 2 \times x) \times (29 + 35 \times x) / (2 + 5 \times x + 3 \times x^2)^2 + \frac{1}{2} \times \frac{725 + 842 \times x}{2 + 5 \times x + 3 \times x^2} - 842 \times \text{atanh}(5 + 6 \times x) \]

\[= \frac{(-15156 \times x - 50520 \times x - 62308 \times x - 33680 \times x - 6736) \times \text{atanh}(6 \times x + 5) + 2526 \times x + 6315 \times x + 5146 \times x + 1363}{4 \times 3 \times 2} \times 18 \times x + 60 \times x + 74 \times x + 40 \times x + 8 \]

\[\text{Type: Expression(Integer)}\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[= \frac{-x + 5}{6 \times 5 \times 4 \times 3 \times 2} \times 27 \times x + 135 \times x + 279 \times x + 305 \times x + 186 \times x + 60 \times x + 8 \]

\[\text{Type: Fraction(Polynomial(Integer))}\]

\[\text{Type: Expression(Integer)}\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[= \frac{-x + 5}{6 \times 5 \times 4 \times 3 \times 2} \times 27 \times x + 135 \times x + 279 \times x + 305 \times x + 186 \times x + 60 \times x + 8 \]

\[\text{Type: Fraction(Polynomial(Integer))}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]

\[\text{Type: Expression(Integer)}\]
\[ \frac{-11340x - 37800x - 46620x - 25200x - 5040}{atanh(6x + 5) + 1890x + 2 \cdot 4725x + 3850x + 1021} \]

\[ \frac{18x + 60x + 74x + 40x + 8}{4 \cdot 3 \cdot 2} \]

Type: Expression(Integer)

\[ \text{d0} := \text{normalize(t0-D(r0,x))} \]

\[ \text{t0} := \frac{5-x}{(3+2x)(2+5x+3x^2)^3} \]

\[ -x + 5 \]

\[ 54x + 351x + 963x + 1447x + 1287x + 678x + 196x + 24 \]

Type: Fraction(Polynomial(Integer))

\[ \text{r0} := -\frac{3}{10} \cdot \frac{37+47x}{(2+5x+3x^2)^2} + \frac{1}{50} \cdot \frac{9587+11442x}{(2+5x+3x^2)} - 233 \text{log}(1+x) + 208/125 \text{log}(3+2x) + 28917/125 \text{log}(2+3x) \]

\[ \text{r0} \]

\[ \frac{(520506x + 1735020x + 2139858x + 1156680x + 231336) \text{log}(3x + 2)}{4 \cdot 3 \cdot 2} \]

\[ \frac{(3744x + 12480x + 15392x + 8320x + 1664) \text{log}(2x + 3)}{4 \cdot 3 \cdot 2} \]

\[ \frac{(- 524250x - 1747500x - 2155250x - 1165000x - 233000) \text{log}(x + 1)}{3 \cdot 2} \]

198
d0:=normalize(t0-D(r0,x))

r0:=12946/125/(3+2*x)-3/10*(37+47*x)/((3+2*x)*(2+5*x+3*x^2)^2)+1/50*(9293+10848*x)/((3+2*x)*(2+5*x+3*x^2))-175*log(1+x)+4912/625*log(3+2*x)+104463/625*log(2+3*x)
\[
\log(x + 1) + 4 + 3 + 2 = 1165140x + 4697400x + 6842995x + 4275600x + 968615 \\
/ \\
5 + 4 + 3 + 2 = 22500x + 108750x + 205000x + 188750x + 85000x + 15000 \\
\text{Type: Expression(Integer)}
\]

\[d0:=\text{normalize}(t0-D(r0,x))\]

\[
\text{clear all}
\]

\[\text{t0}:=(5-x)/((3+2x)^3*(2+5x+3x^2)^3)\]

\[
\text{r0}:=11856/125/(3+2x)^2+35886/625/(3+2x)-3/10*(37+47x)/((3+2x)^2*(2+5x+3x^2)^2)+1/50*(8999+10254x)/((3+2x)^2*(2+5x+3x^2)^2)-141*\log(1+x)+68592/3125*\log(3+2x)+372033/3125*\log(2+3x)\]
\begin{verbatim}
-- R

-- R 6 5 4 3 2
-- R 4938624x + 31277952x + 80801376x + 108924096x + 80801376x
-- R +
-- R 31277952x + 4938624
-- R *
-- R log(2x + 3)
-- R +
-- R 6 5 4 3 2
-- R - 31725000x - 200925000x - 519056250x - 699712500x - 519056250x
-- R +
-- R - 200925000x - 31725000
-- R *
-- R log(x + 1)
-- R +
-- R 5 4 3 2
-- R 6459480x + 36556020x + 80482290x + 85904835x + 44358230x + 8857895
-- R /
-- R 6 5 4 3 2
-- R 225000x + 1425000x + 3681250x + 4962500x + 3681250x + 1425000x
-- R +
-- R 225000
-- R Type: Expression(Integer)
-- E

-- S

D0 := normalize(t0 - D(r0, x))
-- R
-- R
-- R (3) 0
-- R Type: Expression(Integer)
-- E

)clear all

-- S

t0 := x/((-1 + x)^3*(3 + 5*x + 4*x^2)^2)
-- R
-- R
-- R x
-- R Type: Fraction(Polynomial(Integer))
-- E

)--S

r0 := (-21/736)/(1-x)^2 + (-97/4416)/(1-x) + 1/276*(39 + 44*x)/(1-x)^2*
(3 + 5*x + 4*x^2)^2)*11/2304*log(5 + 8*x)/sqrt(23))/sqrt(23)
-- R

201
\end{verbatim}
\[
\begin{align*}
&\frac{-1012x + 759x + 759x + 253x - 759}{23 \log(4x + 5) - x + 1} \\
&+ \frac{2024x - 1518x - 1518x - 506x + 1518}{23 \log(-x + 1)} \\
&+ \frac{8x + 5}{23} \\
&\frac{48184x - 36138x - 36138x - 12046x + 36138}{23 \arctan(\text{-----------})} \\
&+ \frac{9312x - 9768x - 2880x - 1080}{23} \\
&/ \\
&\frac{423936x - 317952x - 317952x - 105984x + 317952}{23} \\
\end{align*}
\]

Type: Expression(Integer)

```plaintext
d0:=normalize(t0-D(r0,x))
```
d0:=normalize(t0-D(r0,x))

(3) 0

r0:=19609/3402*(2+5*x+3*x^2)^(3/2)+478/315*(3+2*x)^2*(2+5*x+3*x^2)^(3/2)+
229/378*(3+2*x)^3*(2+5*x+3*x^2)^(3/2)-1/21*(3+2*x)^4*(2+5*x+3*x^2)^(3/2)+
1/7560*(53569+42086*x)*(2+5*x+3*x^2)^(3/2)-25969/31104*atanh(1/2*(_
(5+6*x)/(sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)+25969/15552*(5+6*x)*_
sqrt(2+5*x+3*x^2)

(2) 6x + 5

908915atanh(------------)

+ 2\3 13x + 5x + 2

+ 6 5 4 3 2

- 2488320x - 3248640x + 57298176x + 247266720x + 417203088x

+ 323830900x + 94018206

* 

+------------+

\3 13x + 5x + 2

+--

1088640\3
(3) 0

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (5-x)(3+2x)^3\sqrt{2+5x+3x^2} \]

\[ r_0 := \frac{304}{81}(2+5x+3x^2)^{3/2} + \frac{11}{15}(3+2x)^2(2+5x+3x^2)^{3/2} - \frac{1}{18}(3+2x)^3(2+5x+3x^2)^{3/2} + \frac{1}{360}(1703+1282x)(2+5x+3x^2)^{3/2} - \frac{6221}{10368}\text{atanh}\left(\frac{1}{2}\left(\frac{5+6x}{\sqrt{3}\sqrt{2+5x+3x^2}}\right)\right)\sqrt{3} + \frac{6221}{5184}(5+6x)\sqrt{2+5x+3x^2} \]

\[ = 4 \quad 3 \quad 2 \quad \text{Type: Expression(Integer)} \]

\[ = \quad 1 \quad (- 8x + 4x^2 + 126x + 243x^3 + 135)\frac{3x + 5x^2 + 2}{2} \]

\[ \text{clear all} \]

\[ \text{t0:=}(5-x)*(3+2x)^3*sqrt(2+5x+3*x^2) \]

\[ \text{r0:=}304/81*(2+5*x+3*x^2)^(3/2)+11/15*(3+2*x)^2*(2+5*x+3*x^2)^(3/2)-1/18*(3+2*x)^3*(2+5*x+3*x^2)^(3/2)+1/360*(1703+1282*x)*(2+5*x+3*x^2)^(3/2)-6221/10368*atanh(1/2*(5+6*x)/(sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)+6221/5184*(5+6*x)*sqrt(2+5*x+3*x^2) \]

\[ \text{204} \]
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 366
)
clear all

--S 367 of 1035
t0:=(5-x)*(3+2*x)^2*sqrt(2+5*x+3*x^2)
--R
--R
--R +------------+
--R 3 2 | 2
--R (1) (- 4x + 8x + 51x + 45)\|3x + 5x + 2
--R Type: Expression(Integer)
--E 367

--S 368 of 1035
r0:=337/162*(2+5*x+3*x^2)^(3/2)-1/15*(3+2*x)^2*(2+5*x+3*x^2)^(3/2)+
1/180*(511+334*x)*(2+5*x+3*x^2)^(3/2)-2267/5184*atanh(1/2*(5+6*x)/
(sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)+2267/2592*(5+6*x)*sqrt(2+5*x+3*x^2)
--R
--R
--R (2)
--R 6x + 5
--R - 11335atanh(---------------------)
--R +---------------------+
--R 2\|3 \|3x + 5x + 2
--R +
--R +---------------------+
--R 4 3 2 ++ | 2
--R (- 20736x + 47520x + 458832x + 750500x + 337254)/\|3 \|3x + 5x + 2
--R /
--R ++
--R 25920\|3
--R Type: Expression(Integer)
--E 368

--S 369 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 369
)
clear all
\( t_0 := (5-x)(3+2x)\sqrt{2+5x+3x^2} \)

\[ 2 \begin{array}{c} 2 \\ \begin{array}{c} (1) (-2x + 7x + 15) \\ \frac{3x + 5x + 2}{3x + 5x + 2} \end{array} \end{array} \]

Type: Expression(Integer)

\[ r_0 := \frac{34}{27}(2+5x+3x^2)^{3/2} - \frac{1}{12}(3+2x)(2+5x+3x^2)^{3/2} - \frac{559}{1728}\text{atanh}\left(\frac{1}{2}(5+6x)/(\sqrt{3}\sqrt{2+5x+3x^2})\right)/\sqrt{3} + \frac{559}{864}(5+6x)\sqrt{2+5x+3x^2} \]

\[ 6x + 5 \]

\[ - 559\text{atanh}\left(\frac{1}{2}(5+6x)/(\sqrt{3}\sqrt{2+5x+3x^2})\right)/\sqrt{3} + \frac{559}{864}(5+6x)\sqrt{2+5x+3x^2} \]

\[ 2/3 \begin{array}{c} 2 \\ \begin{array}{c} x + 5 \\ \frac{3x + 5x + 2}{3x + 5x + 2} \end{array} \end{array} \]

\[ (3) 0 \]

Type: Expression(Integer)

\( d_0 := \text{normalize}(t_0 - D(r_0,x)) \)

\[ 1728/3 \]

Type: Expression(Integer)

\( )\text{clear all} \)

\[ t_0 := (5-x)\sqrt{2+5x+3x^2} \]

\[ (1) (-x + 5)/3x + 5x + 2 \]
\[ r_0 = -\frac{1}{9}(2+5x+3x^2)^{\frac{3}{2}} - \frac{35}{144} \text{atanh} \left( \frac{1}{2} \left( \frac{5+6x}{\sqrt{3} \sqrt{2+5x+3x^2}} \right) \right) \sqrt{3} + \frac{35}{72}(5+6x) \sqrt{2+5x+3x^2} \]

\[ d_0 = \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 = \frac{(5-x)\sqrt{2+5x+3x^2}}{3+2x} \]

\[ r_0 = -\frac{311}{48} \text{atanh} \left( \frac{1}{2} \left( \frac{5+6x}{\sqrt{5} \sqrt{2+5x+3x^2}} \right) \right) \sqrt{5} + \frac{13}{8} \text{atanh} \left( \frac{1}{2} \left( \frac{7+8x}{\sqrt{5} \sqrt{2+5x+3x^2}} \right) \right) \sqrt{5} + \frac{1}{24}(73-6x) \sqrt{2+5x+3x^2} \]
\[
\begin{align*}
-31\text{atanh}(\frac{2\sqrt{3|x + 5x + 2|}}{5\sqrt{3|x + 5x + 2|}}) &+ 78\sqrt{3} &\text{atanh}(\frac{2\sqrt{3|x + 5x + 2|}}{5\sqrt{3|x + 5x + 2|}}) \\
2\sqrt{3} &+ 2 &2\sqrt{5}
\end{align*}
\]
d0 := normalize(t0-D(r0,x))

r0 := -13/10*(2+5*x+3*x^2)^(3/2)/(3+2*x)^2 - 1/8*atanh(1/2*(5+6*x)/sqrt(3)*sqrt(2+5*x+3*x^2))*sqrt(3) + 27/80*atanh(1/2*(7+8*x)/sqrt(5)*sqrt(2+5*x+3*x^2))/sqrt(5) + 3/40*(25+26*x)*sqrt(2+5*x+3*x^2)/(3+2*x)
\[
\begin{align*}
&\frac{2}{3x + 5x + 2} + \frac{8x + 7}{2\sqrt{3x + 5x + 2}}
\end{align*}
\]

\[
\begin{align*}
&\frac{(108x + 324x + 243)\arctanh\left(\frac{\sqrt{2 + 5x + 3x^2}}{\sqrt{5}}\right)}{2\sqrt{5} \sqrt{3x + 5x + 2}}
\end{align*}
\]

\[
\begin{align*}
&\frac{(248x + 242)\sqrt{3x + 5x + 2}}{2\sqrt{30x + 960x + 720}}
\end{align*}
\]

\[
\begin{align*}
&\frac{16x + 96x + 216x + 216x + 81}{4^3 2^8}
\end{align*}
\]

\[
\begin{align*}
&\frac{1}{6}(2-3x)\sqrt{2+5x+3x^2}/(3+2x)^3 + \frac{37}{120}\sqrt{2+5x+3x^2}/(3+2x)^2 + \frac{29}{100}\sqrt{2+5x+3x^2}/(3+2x)
\end{align*}
\]

\[
\begin{align*}
&\frac{16x + 96x + 216x + 216x + 81}{4^3 2^8}
\end{align*}
\]

\[
\begin{align*}
&\frac{1}{6}(2-3x)\sqrt{2+5x+3x^2}/(3+2x)^3 + \frac{37}{120}\sqrt{2+5x+3x^2}/(3+2x)^2 + \frac{29}{100}\sqrt{2+5x+3x^2}/(3+2x)
\end{align*}
\]

\[
\begin{align*}
&\frac{16x + 96x + 216x + 216x + 81}{4^3 2^8}
\end{align*}
\]

\[
\begin{align*}
&\frac{1}{6}(2-3x)\sqrt{2+5x+3x^2}/(3+2x)^3 + \frac{37}{120}\sqrt{2+5x+3x^2}/(3+2x)^2 + \frac{29}{100}\sqrt{2+5x+3x^2}/(3+2x)
\end{align*}
\]

\[
\begin{align*}
&\frac{16x + 96x + 216x + 216x + 81}{4^3 2^8}
\end{align*}
\]

\[
\begin{align*}
&\frac{1}{6}(2-3x)\sqrt{2+5x+3x^2}/(3+2x)^3 + \frac{37}{120}\sqrt{2+5x+3x^2}/(3+2x)^2 + \frac{29}{100}\sqrt{2+5x+3x^2}/(3+2x)
\end{align*}
\]

\[
\begin{align*}
&\frac{16x + 96x + 216x + 216x + 81}{4^3 2^8}
\end{align*}
\]

\[
\begin{align*}
&\frac{1}{6}(2-3x)\sqrt{2+5x+3x^2}/(3+2x)^3 + \frac{37}{120}\sqrt{2+5x+3x^2}/(3+2x)^2 + \frac{29}{100}\sqrt{2+5x+3x^2}/(3+2x)
\end{align*}
\]
\[ \frac{2(1392x + 5516x + 3842) - 5(3x + 5x + 2) + 3(9600x + 43200x + 64800x + 32400)}{5} \]

Type: Expression(Integer)

\[ (3) \]

\[ 5 4 3 2 \]

\[ 32x + 240x + 720x + 1080x + 810x + 243 \]

Type: Expression(Integer)

\[ (2) \]

\[ 4 3 2 \]

\[ (- 2448x - 14688x - 33048x - 33048x - 12393) \]

\[ 8x + 7 \]

\[ \text{atanh}(\ldots) \]

\[ \text{atanh}(\ldots) \]

\[ \text{atanh}(\ldots) \]

\[ ++ | 2 \]
\[
\begin{align*}
\text{d0} & := \text{normalize(t0-D(r0,x))} \\
\text{t0} & := (5-x)\sqrt{2+5x+3x^2}/(3+2x)^6 \\
\text{r0} & := -3159/40000\text{atanh}(1/2*(7+8x)/(\sqrt{5}\sqrt{2+5x+3x^2})))/\sqrt{5} -
\end{align*}
\]
d0:=normalize(t0-D(r0,x))

r0:=-26453/40000*atanh(1/2*(7+8*x)/(sqrt(5)*sqrt(2+5*x+3*x^2)))/sqrt(5)_ + 1/48*(17-6*x)*sqrt(2+5*x+3*x^2)/(3+2*x)^6 + 89/1200*sqrt(2+5*x+3*x^2)/(3+2*x)^5 + 259/4000*sqrt(2+5*x+3*x^2)/(3+2*x)^4 + 923/15000*sqrt(2+5*x+3*x^2)/(3+2*x)^3 + 311/4800*sqrt(2+5*x+3*x^2)/(3+2*x)^2 + 4083/50000*sqrt(2+5*x+3*x^2)/(3+2*x)

213
\[\frac{313574x + 24762080x + 78608960x + 125594400x + 101415280x}{64 \times 5^{5/2} \times 3^{2/3} + 5x + 2}\]
\[ \frac{1}{34992}(150539+113346x)(2+5x+3x^2)^{\frac{5}{2}} + \frac{454969}{8957952}\text{atanh}\left(\frac{5+6x}{\sqrt{3}\sqrt{2+5x+3x^2}}\right)\right) / \sqrt{3} - \frac{454969}{4478976}(5+6x)\sqrt{2+5x+3x^2} \]

\[ (2) \]

\[ 6x + 5 \]

\[ 2274845\text{atanh}\left(\frac{5+6x}{\sqrt{3}\sqrt{3x + 5x + 2}}\right) \]

\[ 2\left(\frac{8}{\sqrt{3}}\right) + 7 \frac{6}{\sqrt{3}} + 74837820x - 741519360x + 29622965760x \]

\[ + 4 \frac{3}{\sqrt{3}} + 74525490432x + 99834752160x + 30098597300x \]

\[ + 44789760\frac{3}{\sqrt{3}} \]

\[ Type: \text{Expression}(\text{Integer}) \]

\[ d0:=\text{normalize}(t0-D(r0,x)) \]

\[ Type: \text{Expression}(\text{Integer}) \]

\[ )\text{clear all} \]

\[ t0:=(5-x)*(3+2x)^3*(2+5x+3x^2)^{\frac{3}{2}} \]

\[ Type: \text{Expression}(\text{Integer}) \]

\[ )\text{clear all} \]

\[ Type: \text{Expression}(\text{Integer}) \]
r0:=12277/20736*(5+6*x)*(2+5*x+3*x^2)^(3/2)+22577/11340*(2+5*x+3*x^2)^(5/2)+67/126*(3+2*x)^2*(2+5*x+3*x^2)^(5/2)-1/24*(3+2*x)^3*(2+5*x+3*x^2)^(5/2)+1/9072*(27209+19926*x)*(2+5*x+3*x^2)^(5/2)+12277/331776*atanh(1/2*(5+6*x)/sqrt(3)*sqrt(2+5*x+3*x^2))/sqrt(3)-12277/165888*(5+6*x)*sqrt(2+5*x+3*x^2)

(2)

6x + 5

429695*atanh(-----------------------)

+---------------------+

2|3 \3x + 5x + 2

+---------------------+

7 6 5 4 3

- 34836480x - 50595840x + 736473600x + 3300302592x + 5986095840x

+---------------------+

2

552483576x + 2552224700x + 466274922

*---------------------+

++ | 2

\3 \3x + 5x + 2

/---------------------+

++

11612160\3

Type: Expression(Integer)

E 401

S 402 of 1035
d0:=normalize(t0-D(r0,x))

R

R

(3) 0

Type: Expression(Integer)

E 402

)clear all

S 403 of 1035
t0:=(5-x)*(3+2*x)^2*(2+5*x+3*x^2)^(3/2)

R

R

(1) (- 12x + 4x + 185x + 406x + 327x + 90)\3x + 5x + 2

Type: Expression(Integer)

E 403

S 404 of 1035
$$r_0:=\frac{1129}{2592}(5+6x)(2+5x+3x^2)^{3/2}+\frac{1111}{945}(2+5x+3x^2)^{5/2}$$
$$-\frac{1}{21}(3+2x)^2(2+5x+3x^2)^{5/2}+\frac{1}{378}(721+474x)(2+5x+3x^2)^{5/2}$$
$$+\frac{1129}{41472}\text{atanh}\left(\frac{1}{2}(5+6x)\sqrt{3}\sqrt{2+5x+3x^2}\right)$$
$$-\frac{1}{20736}(5+6x)\sqrt{2+5x+3x^2}$$

\[\text{(2)}\]

\[6x + 5\]

\[39515\text{atanh}\left(-\frac{1}{2}\right)\]

\[+-+ | \quad 2\]

\[2|3 \quad |3x + 5x + 2\]

\[+-+\]

\[6 \quad 5 \quad 4 \quad 3 \quad 2\]

\[-\quad 2488320x + 622080x + 54169344x + 158099040x + 189722352x\]

\[+-+\]

\[103942700x + 21339474\]

\[+-+-\]

\[1451520\sqrt{3}\]

\[\text{Type: Expression(Integer)}\]

\[\text{E 404}\]

\[\text{S 405 of 1035}\]

\[d_0:=\text{normalize}(t_0-D(r_0,x))\]

\[\text{R}\]

\[\text{R (3) 0}\]

\[\text{Type: Expression(Integer)}\]

\[\text{E 405}\]

\[\text{clear all}\]

\[\text{S 406 of 1035}\]

\[t_0:=(5-x)(3+2x)(2+5x+3x^2)^{3/2}(3/2)\]

\[\text{R}\]

\[\text{R (1) (-6x + 11x + 76x + 89x + 30)|3x + 5x + 2}\]

\[\text{Type: Expression(Integer)}\]

\[\text{E 406}\]

\[\text{S 407 of 1035}\]

\[r_0:=\frac{839}{2592}(5+6x)(2+5x+3x^2)^{3/2}(3/2)+\frac{103}{135}(2+5x+3x^2)^{5/2},\quad 1/18(3+2x)(2+5x+3x^2)^{5/2}+\frac{839}{41472}\text{atanh}(1/2(5+6x)/_\]

\[217\]
\[
\frac{\sqrt{3} \sqrt{2 + 5x + 3x^2}}{\sqrt{3}} - \frac{839}{20736} (5 + 6x) \sqrt{2 + 5x + 3x^2}
\]

Type: Expression(Integer)

\(d0:=\text{normalize}(t0-D(r0,x))\)

Type: Expression(Integer)

\(t0:=(5-x)*(2+5x+3x^2)^{3/2}\)

Type: Expression(Integer)

\(r0:=\frac{35}{144} (5 + 6x) (2 + 5x + 3x^2)^{3/2} - \frac{1}{15} (2 + 5x + 3x^2)^{5/2} + \frac{35}{2304} \text{atanh} \left( \frac{1}{2} \frac{5 + 6x}{\sqrt{3} \sqrt{2 + 5x + 3x^2}} \right) / \sqrt{3} - \frac{35}{1152} (5 + 6x) \sqrt{2 + 5x + 3x^2}\)

Type: Expression(Integer)

\(\text{clear all}\)
\[
\begin{align*}
\text{Type: Expression(Integer)}
\end{align*}
\]
\textbf{clear all}

--- S 415 of 1035
\texttt{t0:=(5-x)*(2+5*x+3*x^2)^(3/2)/(3+2*x)^2}

--- E 415

--- S 416 of 1035
\texttt{r0:=-1/6*(21*x)*(2+5*x+3*x^2)^(3/2)/(3+2*x)^2+3743/192*atanh(1/2*(5+6*x)/}
\texttt{(sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)-161/32*atanh(1/2*(7+8*x)/}
\texttt{(sqrt(5)*sqrt(2+5*x+3*x^2)))*sqrt(5)-1/96*(361-726*x)*sqrt(2+5*x+3*x^2)}

--- E 416
\[
\begin{align*}
(384x + 576) / 3
\end{align*}
\]
2 \sqrt{3} \sqrt{3x + 5x + 2} + 2 \\
2 \sqrt{3} \sqrt{8x + 7} \\
(5316x + 15948x + 11961) \arctanh \left( \frac{2 \sqrt{5} \sqrt{3x + 5x + 2}}{3 + 2x} \right) \\
+ \left( \frac{-48x + 568x + 3108x + 3092}{2 \sqrt{3}\sqrt{3x + 5x + 2}} \right) \\
+ \left( - \frac{256x + 768x + 576}{5} \right) \\
Type: Expression(Integer) \\
--E 419 \\

--S 420 of 1035 
\texttt{d0:=normalize(t0-D(r0,x))} \\
--R \\
--R (3) 0 \\
--R \\
--E 420 \\
\texttt{)clear all} \\

--S 421 of 1035 
\texttt{t0:=(5-x)*(2+5*x+3*x^2)^(3/2)/(3+2*x)^4} \\
--R \\
--R \\
--R (1) \\
\frac{16x + 96x + 216x + 216x + 81}{4 \sqrt{3}\sqrt{3x + 5x + 2}} \\
Type: Expression(Integer) \\
--E 421 \\

--S 422 of 1035 
\texttt{r0:=67/40*[(2+5*x+3*x^2)^3/((3+2*x)^2-1/6*(11+3*x)^2*(2+5*x+3*x^2)^2))} \\
\texttt{-(3+2*x)^3/51/32*atanh(1/2*(5+6*x)/(sqrt(3)*sqrt(2+5*x+3*x^2))))} \\
\texttt{+sqrt(3)-1973/320*atanh(1/2*(7+8*x)/(sqrt(5)*sqrt(2+5*x+3*x^2))))} \\
\texttt{-sqrt(5)-1/160*(845+402*x)*sqrt(2+5*x+3*x^2)/(3+2*x)} \\
--R \\
--R (2) \\
\frac{6x + 5}{3 \sqrt{6x + 5}} \\
Type: Expression(Integer)
\[223\]
\[ \text{Type: Expression(Integer)} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{clear all} \]

\[ \text{Type: Expression(Integer)} \]

\[ 224 \]
\[
\begin{align*}
\text{r0} &= \frac{1}{10} \left(1+5x\right) \left(2+5x+3x^2\right)^{3/2} \left(3+2x\right)^{-5} + \frac{141}{32000} \text{atanh} \left(\frac{7+8x}{\sqrt{5} \sqrt{2+5x+3x^2}}\right) \sqrt{5} + \frac{41}{800} \sqrt{2+5x+3x^2} \left(3+2x\right)^{-3} + \frac{23}{640} \sqrt{2+5x+3x^2} \left(3+2x\right)^{-2} - \frac{3}{320} \frac{87+76x}{\left(3+2x\right)^{-4}} \\
\end{align*}
\]

\[
\begin{align*}
\text{t0} &= \left(5-x\right) \left(2+5x+3x^2\right)^{3/2} \left(3+2x\right)^{-7} \\
\end{align*}
\]

\[
\begin{align*}
\text{d0} &= \text{normalize}(\text{t0}-\text{r0}, x) \\
\end{align*}
\]
\[ r0:=\frac{-1/42*(9-7x)*(2+5x+3x^2)^{3/2}}{(3+2x)^7} + \frac{4663/160000*\text{atanh}(\frac{1}{2}*(7+8x)/(\sqrt{5}*(2+5x+3x^2)))}{\sqrt{5}} + \frac{367/33600*\sqrt{2+5x+3x^2}}{(3+2x)^5} + \frac{111/16000*\sqrt{2+5x+3x^2}}{(3+2x)^4} + \frac{1769/420000*\sqrt{2+5x+3x^2}}{(3+2x)^3} + \frac{293/134400*\sqrt{2+5x+3x^2}}{(3+2x)^2} + \frac{249/1400000*\sqrt{2+5x+3x^2}}{(3+2x)} - \frac{1/1344*(559+534x)*\sqrt{2+5x+3x^2}}{(3+2x)^6} \]
(3) 0

(1) 9 8 7 6 5 4 3

- 144x - 624x + 1304x + 14784x + 14784x + 2

38421x + 12096x + 1620

* +------------+

2

| 3x + 5x + 2

(2) 6x + 5

- 95980115atanh(-)
\[ \frac{1}{3} x + 5x + 2 \]

Type: Expression(Integer)

\( t0 := (5-x)*(3+2x)^3*(2+5x+3x^2)^{5/2} \)

(1)

\[ - 72x - 204x + 958x + 5955x + 13215x + 15577x + 10359x + 3672x + 540 \]

Type: Expression(Integer)

\( r0 := -182917/4478976*(5+6x)*(2+5x+3x^-2)^{(3/2)}+182917/466560*(5+6x)*(2+5x+3x^-2)^{(5/2)}+22493/17010*(2+5x+3x^-2)^{(7/2)}+169/405*(3+2x)^2*(2+5x+3x^-2)^{(7/2)}-1/30*(3+2x)^3*(2+5x+3x^-2)^{(7/2)}+1/19440* \]

\( (24251+30554x)*(2+5x+3x^-2)^{(7/2)}-182917/71663616*\text{atanh}(1/2*(5+6x)) - \]
\[
\frac{\sqrt{3}\sqrt{2+5x+3x^2}}{\sqrt{3}} + \frac{182917}{35831808}(5+6x)\sqrt{2+5x+3x^2}
\]

---

(\(\sqrt{3}\ast\sqrt{2+5x+3x^2}\))/\(\sqrt{3}+182917/35831808\ast(5+6x)\ast\_
\sqrt{\(2+5x+3x^2\)})

---

\(6x + 5\)  
---

- \(\text{atanh}(\frac{2\sqrt[3]{3}}{3x + 5})\)

---

\(\frac{9}{3x + 5} + \frac{8}{3x + 5} + \frac{7}{3x + 5} + \frac{6}{3x + 5}\)

---

- \(18059231232x - 58525286400x + 295894093824x + 2173375825920x\)

---

\(\frac{5}{3} + \frac{4}{3} + \frac{3}{3} + \frac{2}{3}\)

---

- \(5786089901568x + 8507866763520x + 7525492434720x + 3991828564960x\)

---

\(1171498832260x + 146357368950\)

---

\(+\frac{2508226560}{3}\)

---

\(\frac{2508226560}{3}\)

---

Type: Expression(Integer)

---

\(\text{d0:=normalize(t0-D(r0,x)})\)

---

\(\text{(3) 0}\)

---

Type: Expression(Integer)

---

\(\)clear all\)

---

\(\text{t0:=(5-x)*(3+2x)^2*(2+5x+3x^2)^{(5/2)}}\)

---

\(\text{(1)}\)

---

\((-36x - 48x + 551x + 2151x + 3381x + 2717x + 1104x + 180)\)

---

\(\ast\)

---

\(\frac{9}{3x + 5} + \frac{8}{3x + 5} + \frac{7}{3x + 5} + \frac{6}{3x + 5}\)

---

\(\frac{2508226560}{3}\)

---

Type: Expression(Integer)
\[ r_0 := -\frac{22535}{746496}(5 + 6x)(2 + 5x + 3x^2)^{3/2} + \frac{4507}{15552}(5 + 6x)(2 + 5x + 3x^2)^{5/2} + \frac{1847}{2268}(2 + 5x + 3x^2)^{7/2} - \frac{1}{27}(3 + 2x)^2(2 + 5x + 3x^2)^{7/2} + \frac{1}{648}(931 + 614x)(2 + 5x + 3x^2)^{7/2} - \frac{22535}{11943936}\text{atanh}\left(\frac{5 + 6x}{\sqrt{3}\sqrt{2 + 5x + 3x^2}}\right)\sqrt{3} + \frac{22535}{5971968}(5 + 6x)\sqrt{2 + 5x + 3x^2} \]

\[ \text{d0 := normalize(t0 - D(r0, x))} \]

\[ t_0 := -(5-x)(3+2x)(2+5x+3x^2) \]

\[ 231 \]
\[ r_0 = \frac{-1865}{82944} (5 + 6x)(2 + 5x + 3x^2)^{3/2} + \frac{373}{1728} (5 + 6x)(2 + 5x + 3x^2)^{5/2} + \frac{23}{42} (2 + 5x + 3x^2)^{7/2} - \frac{1}{24} (3 + 2x)(2 + 5x + 3x^2)^{7/2} - \frac{1865}{1327104} \text{atanh} \left( \frac{1}{2}\frac{5 + 6x}{\sqrt{3} \sqrt{2 + 5x + 3x^2}} \right) / \sqrt{3} + \frac{1865}{663552} (5 + 6x) \sqrt{2 + 5x + 3x^2} \]

\[
6x + 5 - 13055 \text{atanh} \left( \frac{1}{2} \left( \frac{5 + 6x}{\sqrt{3} \sqrt{2 + 5x + 3x^2}} \right)^2 \right)
\]

\[
7 6 5 4 3 2 1 0
\]

\[
20901888x + 1492992x + 422309376x + 1310425344x + 1795636512x + 2
\]

\[
1285991376x + 470446660x + 69554838
\]

\[
9289728 \sqrt{3}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{clear all}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{clear all}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{clear all}
\]

\[
\text{Type: Expression(Integer)}
\]
\[ r_0 = -\frac{175}{10368}(5+6x)(2+5x+3x^2)^{3/2} + 35/216(5+6x)(2+5x+3x^2)^{5/2} - \frac{1}{21}(2+5x+3x^2)^{7/2} - \frac{175}{82944}\text{atanh}\left(\frac{5+6x}{\sqrt{3}(2+5x+3x^2)}\right)/\sqrt{3} + \frac{175}{82944}(5+6x)\sqrt{2+5x+3x^2} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (5-x) \frac{(2+5x+3x^2)^{5/2}}{(2+5x+3x^2)^{1/2}} \]

\[ 2x + 3 \]
\[ r_0 := \frac{1}{3456} \cdot (25-5586x) \cdot (2+5x+3x^2)^{3/2} + \frac{1}{360} \cdot (209-30x) \cdot (2+5x+3x^2)^{5/2} - \frac{543811}{55296} \cdot \text{atanh} \left( \frac{1}{2} \cdot \frac{5+6x}{\sqrt{3} \cdot \sqrt{2+5x+3x^2}} \right) / \sqrt{3} + \frac{325}{128} \cdot \text{atanh} \left( \frac{1}{2} \cdot \frac{7+8x}{\sqrt{5} \cdot \sqrt{2+5x+3x^2}} \right) \cdot \sqrt{5} + \frac{1}{27648} \cdot (51455-106734x) \cdot \sqrt{2+5x+3x^2} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (5-x) \cdot (2+5x+3x^2)^{5/2} / (3+2x)^2 \]
r0:=-1/192*(65-1194*x)*(2+5*x+3*x^2)^(3/2)-1/10*(34+x)*(2+5*x+3*x^2)^(5/2)/(3+2*x)+41053/1024*atanh(1/2*(5+6*x)/sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)-1325/128*atanh(1/2*(7+8*x)/sqrt(5)*sqrt(2+5*x+3*x^2)))*sqrt(5)-1/512*(3865-8082*x)*sqrt(2+5*x+3*x^2)

d0:=normalize(t0-D(r0,x))

)clear all
\[ t_0 := (5-x)(2+5x+3x^2)^{\frac{5}{2}}/(3+2x)^3 \]

\[ r_0 := 5/192(573+164x)(2+5x+3x^2)^{\frac{3}{2}}/(3+2x)-1/16(29+2x)(2+5x+3x^2)^{\frac{5}{2}}/(3+2x)^2-199615/3072\text{atanh}(1/2\sqrt{3\sqrt{2+5x+3x^2}})/\sqrt{3}+4295/256\text{atanh}(1/2\sqrt{5\sqrt{2+5x+3x^2}})*\sqrt{5}+5/1536(3763-7854x)\sqrt{2+5x+3x^2} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ (3) \]
\[
t_0 := \frac{(5-x)(2+5x+3x^2)^{5/2}}{(3+2x)^4}
\]

\[
t_0 = \frac{-9x + 15x + 113x + 165x + 96x + 20}{3x + 5x + 2}
\]

\[
r_0 := \frac{5}{48}(93+43x)(2+5x+3x^2)^{3/2}/(3+2x)^2 - \frac{1}{6}(8+x)/(2+5x+3x^2)^{5/2}/(3+2x)^3 + \frac{13505}{256}\text{atanh}(\frac{1/2(5+6x)}{\sqrt{3}(2+5x+3x^2)})/\sqrt{3} - \frac{3487}{256}\text{atanh}(\frac{1/2(7+8x)}{\sqrt{5}(2+5x+3x^2)})/\sqrt{5} - \frac{5}{64}(736+343x)(2+5x+3x^2)^{3/2}/(3+2x)
\]

\[
r_0 = \frac{324120x + 1458540x + 2187810x + 1093905}{2\|3 \|3x + 5x + 2} 
\]

\[
r_0 = \frac{(-83688x - 376596x - 564894x - 282447)}{2\|5 \|3x + 5x + 2} 
\]

\[
r_0 = \frac{(-1152x + 7584x - 7776x - 257328x - 574132x - 356896)}{\|3 \|3x + 5x + 2} 
\]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(5-x)(2+5x+3x^2)^{5/2}}{(3+2x)^5} \]

\[ r_0 := -\frac{953}{128} \left( \frac{2+5x+3x^2}{{(2+5x+3x^2)}^{3/2}} \right) \frac{1}{(3+2x)^2} + \frac{5}{192} \left( \frac{485+282x}{{(2+5x+3x^2)}^{3/2}} \right) \frac{1}{(3+2x)^3} - \frac{1}{16} \left( \frac{19+4x}{{(2+5x+3x^2)}^{5/2}} \right) \frac{1}{(3+2x)^4} - \frac{1875}{256} \text{atanh} \left( \frac{1/2 (5+6x)}{\sqrt{3} \sqrt{2+5x+3x^2}} \right) \sqrt{3} + \frac{29047}{1024} \text{atanh} \left( \frac{1/2 (7+8x)}{\sqrt{5} \sqrt{2+5x+3x^2}} \right) \sqrt{5} + \frac{1}{512} \left( \frac{12265 + 5718x}{\sqrt{2+5x+3x^2}} \right) \frac{1}{3+2x} \]
d0:=normalize(t0-D(r0,x))

)clear all
\[
\begin{align*}
25806600 \\
* \\
6x + 5 \\
\setlength{\arraycolsep}{2pt} \\
\frac{1}{3} \frac{1}{5} \text{atanh}(-\frac{2}{6x + 5}) \\
\frac{2}{3x + 5x + 2} \\
+ \\
\begin{array}{c}
\begin{array}{cccc}
5 & 4 & 3 & 2 \\
-13162656x & -98719920x & -296159760x & -444239640x & -333179730x \\
+ \\
-99953919 \\
\end{array} \\
\begin{array}{c}
\begin{array}{c}
8x + 7 \\
\text{atanh}(-\frac{2}{6x + 5}) \\
\frac{2}{3x + 5x + 2} \\
+ \\
\begin{array}{c}
\begin{array}{cccc}
5 & 4 & 3 & 2 \\
-345600x & -9261696x & -43173616x & -83282296x & -74039676x \\
+ \\
-25200366 \\
\end{array} \\
\begin{array}{c}
\begin{array}{c}
8x + 7 \\
\text{atanh}(-\frac{2}{6x + 5}) \\
\frac{2}{3x + 5x + 2} \\
+ \\
\begin{array}{c}
\begin{array}{cccc}
5 & 4 & 3 & 2 \\
(2457600x + 18432000x + 55296000x + 82944000x + 62208000x + 18662400) \\
* \\
\frac{1}{5} \\
\end{array} \\
\end{array} \\
\end{array} \\
\end{array} \\
\end{array} \\
\end{array}
\end{align*}
\]
\[
\begin{align*}
(1) \quad & \frac{-9x + 15x^2 + 113x^3 + 165x^4 + 96x^5 + 20}{3x + 5x^2 + 2} \\
& \frac{128x + 1344x^2 + 6048x^3 + 2160x^4 + 22680x^5 + 20412x^6 + 10206x^7 + 2187}{7x + 6x^2 + 5x^3 + 4x^4 + 3x^5 + 2x^6} \\
& \text{Type: Expression(Integer)}
\end{align*}
\]
\[(3) \text{ Type: Expression(Integer)}\]

\[d0:=\text{normalize}(t0-D(r0,x))\]
\[(1) \text{ Type: Expression(Integer)}\]

\[
\begin{align*}
&\text{clear all}
\end{align*}
\]

\[\text{Type: Expression(Integer)}\]

\[
\begin{align*}
&\text{Type: Expression(Integer)}
\end{align*}
\]

\[
\begin{align*}
&\text{Type: Expression(Integer)}
\end{align*}
\]
\( d_0 := \text{normalize}(t_0 - D(r_0, x)) \)

\[
t_0 := \frac{(5-x) \cdot (3+2x)^4}{\sqrt{2+5x+3x^2}}
\]

\[
-16x - 16x + 264x + 864x + 999x + 405
\]

\[
\text{Type: Expression(Integer)}
\]
\[ r_0 := \frac{28051}{1296} \text{atanh} \left( \frac{1}{2} \left( \frac{5+6x}{\sqrt{3} \sqrt{2+5x+3x^2}} \right) \right) + \frac{4043}{162} \sqrt{2+5x+3x^2} + \frac{391}{135} (3+2x)^2 \sqrt{2+5x+3x^2} - \frac{53}{60} (3+2x)^3 \sqrt{2+5x+3x^2} + \frac{1}{15} (3+2x)^4 \sqrt{2+5x+3x^2} + \frac{1}{648} (11347+9650x) \sqrt{2+5x+3x^2} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(5-x)(3+2x)^3}{\sqrt{2+5x+3x^2}} \]

\[ r_0 := \frac{19405}{1296} \text{atanh} \left( \frac{1}{2} \left( \frac{5+6x}{\sqrt{3} \sqrt{2+5x+3x^2}} \right) \right) + \frac{244}{\cdots} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]
\[
\frac{2375}{162}\sqrt{2+5x+3x^2}+\frac{32}{27}(3+2x)^2\sqrt{2+5x+3x^2}-\frac{1}{12}(3+2x)^3\sqrt{2+5x+3x^2}+
\frac{5}{648}(1361+1078x)\sqrt{2+5x+3x^2}
\]

\[
\frac{6x + 5}{2\sqrt{3}} + \frac{19405}{2\sqrt{3}}\operatorname{atanh}\left(\frac{2}{\sqrt{3}} + \frac{5}{2}\right) + \frac{1}{9}(3+2x)^2\sqrt{2+5x+3x^2}+
\frac{1}{54}(301+194x)\sqrt{2+5x+3x^2}
\]

\[
t_0:=\frac{(5-x)(3+2x)^2}{\sqrt{2+5x+3x^2}}
\]

\[
r_0:=\frac{1147}{108}\operatorname{atanh}\left(\frac{1}{2}\left(\frac{5+6x}{\sqrt{3}\sqrt{2+5x+3x^2}}\right)\right)+199/27\sqrt{2+5x+3x^2}+1/9(3+2x)^2\sqrt{2+5x+3x^2}+
\frac{1}{54}(301+194x)\sqrt{2+5x+3x^2}
\]
\begin{verbatim}
---R 6x + 5 2 ++--- | 2
---R 1147atanh(------------------------) + (- 48x + 244x + 1290)\|3 \|3x + 5x + 2
---R ++--- | 2
---R 2\|3 \|3x + 5x + 2
---R +-----------------------------------
---R 108\|3
---R Type: Expression(Integer)
---E 482

---S 483 of 1035
d0:=normalize(t0-D(r0,x))
---R
---R (3) 0
---R Type: Expression(Integer)
---E 483

)clear all

---S 484 of 1035
t0:=(5-x)*(3+2*x)/sqrt(2+5*x+3*x^2)
---R
---R 2
---R - 2x + 7x + 15
---R (1) ---------------
---R ++--- | 2
---R \|3x + 5x + 2
---R Type: Expression(Integer)
---E 484

---S 485 of 1035
r0:=31/4*atanh(1/2*(5+6*x)/sqrt(3)*sqrt(2+5*x+3*x^2)))/sqrt(3)+_ 11/3*sqrt(2+5*x+3*x^2)-1/6*(3+2*x)*sqrt(2+5*x+3*x^2)
---R
---R 6x + 5 ++--- | 2
---R 93atanh(------------------------) + (- 4x + 38)\|3 \|3x + 5x + 2
---R ++--- | 2
---R 2\|3 \|3x + 5x + 2
---R (2) ----------------------------------------
---R ++
---R 12\|3
---R Type: Expression(Integer)

246
\end{verbatim}
\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]

\[t_0 := \frac{5 - x}{\sqrt{2 + 5x + 3x^2}}\]

\[r_0 := \frac{35}{6} \cdot \text{atanh} \left( \frac{1}{2} \cdot \frac{5 + 6x}{\sqrt{3} \cdot \sqrt{2 + 5x + 3x^2}} \right) - \frac{1}{3} \sqrt{2 + 5x + 3x^2}\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]
\[
t_0 := \frac{5-x}{(3+2x)\sqrt{2+5x+3x^2}}
\]

\[
r_0 := \frac{-1}{2} \text{atanh} \left( \frac{5+6x}{2\sqrt{3}} \cdot \sqrt{2+5x+3x^2} \right) + \frac{13}{2} \text{atanh} \left( \frac{5+10x+6x^2}{2\sqrt{5}} \cdot \sqrt{2+5x+3x^2} \right)
\]

\[
d_0 := \text{normalize}(t_0 - D(r_0, x))
\]

\[
)\text{clear all}
\]

\[
t_0 := \frac{5-x}{((3+2x)\sqrt{2+5x+3x^2})^2}
\]
\[ r_0 := \frac{47}{10} \cdot \text{atanh} \left( \frac{1}{2} \left( \frac{7 + 8x}{\sqrt{5} \sqrt{2 + 5x + 3x^2}} \right) \right) / \sqrt{5} - \frac{13}{5} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{5 - x}{((3 + 2x)^3 \sqrt{2 + 5x + 3x^2})} \]

\[ r_0 := \frac{389}{100} \cdot \text{atanh} \left( \frac{1}{2} \left( \frac{7 + 8x}{\sqrt{5} \sqrt{2 + 5x + 3x^2}} \right) \right) // \sqrt{5} - \frac{13}{10} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x)^2 - \frac{73}{25} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x) \]
\begin{verbatim}
d0:=normalize(t0-D(r0,x))
t0:=(5-x)/((3+2*x)^4*sqrt(2+5*x+3*x^2))
r0:=331/100*atanh(1/2*(7+8*x)/(sqrt(5)*sqrt(2+5*x+3*x^2)))/sqrt(5)- 13/15*sqrt(2+5*x+3*x^2)/(3+2*x)^3-49/30*sqrt(2+5*x+3*x^2)/(3+2*x)^2- 72/25*sqrt(2+5*x+3*x^2)/(3+2*x)
\end{verbatim}
\[
\begin{align*}
\text{d0} & := \text{normalize(t0-D(r0,x))} \\
\text{t0} & := (5-x)/((3+2*x)^5*\sqrt{2+5*x+3*x^2}) \\
r0 & := 5771/2000*\text{atanh}(1/2*(7+8*x)/((\sqrt{5}*\sqrt{2+5*x+3*x^2})))/\sqrt{5}-
\end{align*}
\]
\(d_0:=\text{normalize}(t_0-D(r_0,x))\)

\[d_0 = \frac{1}{(3+2x)^6\sqrt{2+5x+3x^2}} - \frac{x + 5}{3x + 5x + 2}\]

\(r_0:=\frac{128381}{50000}\arctanh\left(\frac{1}{2}\frac{(7+8x)/(\sqrt{5}\sqrt{2+5x+3x^2})}{\sqrt{5}}\right)\] - \frac{13}{25}\frac{\sqrt{2+5x+3x^2}}{(3+2x)^5} - \frac{443}{500}\frac{\sqrt{2+5x+3x^2}}{(3+2x)^4} - \frac{2321}{1875}\frac{\sqrt{2+5x+3x^2}}{(3+2x)^3} - \frac{1007}{600}\frac{\sqrt{2+5x+3x^2}}{(3+2x)^2} - \frac{15891}{6250}\frac{\sqrt{2+5x+3x^2}}{(3+2x)}\]
(3) 0

(2)
\textbf{Type: Expression(Integer)}

\textbf{d0}:=\text{normalize(t0-D(r0,x))}

\textbf{Type: Expression(Integer)}

)clear all

\textbf{t0}:=(5-x)*(3+2*x)^3/(2+5*x+3*x^2)^(3/2)

\textbf{r0}:=247/9*\text{atanh}(1/2*(5+6*x)/(\text{sqrt}(3)*\text{sqrt}(2+5*x+3*x^2)))\text{/sqrt}(3)-
  2*(3+2*x)^3*(29+35*x)/\text{sqrt}(2+5*x+3*x^2)+272/3*\text{sqrt}(2+5*x+3*x^2)+
  554/9*(3+2*x)*\text{sqrt}(2+5*x+3*x^2)+140/3*(3+2*x)\text{^2*sqrt}(2+5*x+3*x^2)
\[
\text{d}_0 := \text{normalize}(t_0 - D(r_0, x))
\]

\[
(3) 0
\]

\[
\frac{3^2 - 4x + 8x + 51x + 45}{2^2 (3x + 5x + 2)^{3/2}}
\]

\[
\text{r}_0 := 2 \cdot \text{atanh}(1/2 \cdot (5 + 6x)/(\sqrt{3} \cdot \sqrt{2 + 5x + 3x^2})) \cdot \sqrt{3} - 2 \cdot (3 + 2x)^2 \cdot (29 + 35x)/(2 \cdot 2 + 3x^2) + 184/3 \cdot \sqrt{2 + 5x + 3x^2} + 140/3 \cdot (3 + 2x) \cdot \sqrt{2 + 5x + 3x^2}
\]

\[
(2) \frac{6 \cdot |3x + 5x + 2|}{\sqrt{3}} \cdot \text{atanh}(\frac{6x + 5}{2}) - 4x - 398x - 358
\]

\[
(2) \frac{2 \cdot |3x + 5x + 2|}{\sqrt{3}} \cdot \text{atanh}(\frac{6x + 5}{2}) - 4x - 398x - 358
\]

\[
\text{d}_0 := \text{normalize}(t_0 - D(r_0, x))
\]

\[
(3) 0
\]
\begin{align*}
t_0 &= \frac{(5-x)(3+2x)}{(2+5x+3x^2)^{3/2}} \\
&= 2 - 2x + 7x + 15 \\
&\quad + \frac{2}{3} \arctanh \left( \frac{5+6x}{\sqrt{3} \sqrt{2+5x+3x^2}} \right) - \frac{2}{3} \frac{3x+5x+2}{\sqrt{2+5x+3x^2}} + \frac{140}{3} \sqrt{2+5x+3x^2} \\
d_0 &= \text{normalize}(t_0-D(r_0,x)) \\
&= 0 \\
t_0 &= \frac{5-x}{(2+5x+3x^2)^{3/2}} \\
\end{align*}
--- R +------------+
--- R ++ | 2
--- R 2/\5 \1|3x + 5x + 2
--- R (2) -----------------------------------------------
--- R +------------+
--- R ++ | 2
--- R 5/\5 \1|3x + 5x + 2
--- R Type: Expression(Integer)
--- E 524
--- S 525 of 1035
d0:=normalize(t0-D(r0,x))
--- R
--- R
--- R (3) 0
--- R Type: Expression(Integer)
--- E 526
)
clear all
--- S 526 of 1035
t0:=(5-x)/((3+2*x)^2*(2+5*x+3*x^2)^(3/2))
--- R
--- R
--- R (1) ----------------------------------------------
--- R +------------+
--- R 4 3 2 | 2
--- R (12x + 56x + 95x + 69x + 18)/\3x + 5x + 2
--- R Type: Expression(Integer)
--- E 526
--- S 527 of 1035
r0:=302/25*atanh(1/2*(7+8*x)/(sqrt(5)*sqrt(2+5*x+3*x^2)))/sqrt(5)-
6/5*(37+47*x)/((3+2*x)*sqrt(2+5*x+3*x^2))-856/25*sqrt(2+5*x+3*x^2)/(3+2*x)
--- R
--- R
--- R (2)
--- R +-------------------+
--- R | 2 8x + 7
--- R (604x + 906)/\3x + 5x + 2 atanh(---------------------)
--- R +-------------------+
--- R ++ | 2
--- R 2/\5 \1|3x + 5x + 2
--- R +
--- R 2 ++
--- R (- 2568x - 5690x - 2822)/\5
--- R /
--- R +-------------------+
--- R ++ | 2

258
\[- (50x + 75) | 5 \ \ \ \ \ | 3x + 5x + 2 \]
\[- Type: Expression(Integer) \]
\[- E 527 \]

--S 528 of 1035
\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]
--R
--R
--R (3) 0
--R
--R Type: Expression(Integer)
--E 528

)clear all

--S 529 of 1035
\[t_0 := \frac{(5-x)}{(3+2x)^3(2+5x+3x^2)^{3/2}}\]
--R
--R
--R - x + 5
--R (1) ---------------------------------------------------------
--R +------------+
--R 5 4 3 2 | 2
--R (24x + 148x + 358x + 423x + 243x + 54) | 3x + 5x + 2
--R Type: Expression(Integer)
--E 529

--S 530 of 1035
\[r_0 := \frac{483/25 \cdot \text{atanh}\left(\frac{1/2*(7+8x)}{\sqrt{5} \cdot \sqrt{2+5x+3x^2}}\right)}{\sqrt{5}} - \frac{6/5*(37+47x)}{(3+2x)^2(2+5x+3x^2)} - \frac{166/5*\sqrt{2+5x+3x^2}}{(3+2x)^2} - \frac{864/25*\sqrt{2+5x+3x^2}}{(3+2x)}\]
--R
--R
--R (2)
--R +------------+
--R 2 | 2 8x + 7
--R (1932x + 5796x + 4347) | 3x + 5x + 2 \text{atanh}(---------------------)
--R +------------+
--R ++ | 2
--R 2\sqrt{5} \ | 3x + 5x + 2
--R Type: Expression(Integer)
--E 530

--S 531 of 1035

259
\[
d0 := \text{normalize}(t0 - \text{D}(r0, x))
\]
Type: Expression(Integer)

\[
t0 := \frac{5-x}{((3+2*x)^4*(2+5*x+3*x^2)^{3/2})}
\]
Type: Expression(Integer)

\[
r0 := \frac{3289}{125} \text{atanh} \left( \frac{1/2* (7+8*x) \sqrt{5}}{\sqrt{2+5*x+3*x^2}} \right) / \sqrt{5} - \frac{6}{5} \left( \frac{37+47*x}{(3+2*x)^3} \frac{3-478/15 \text{atanh} (2+5*x+3*x^2) / (3+2*x)^2}{(3+2*x)^2} \right) - \frac{4632}{125} \frac{\sqrt{2+5*x+3*x^2}}{(3+2*x)}
\]
Type: Expression(Integer)

\[
d0 := \text{normalize}(t0 - \text{D}(r0, x))
\]
Type: Expression(Integer)
\begin{align*}
t_0 &= \frac{(5-x)}{((3+2x)^5(2+5x+3x^2)^{3/2})} \\
&= \frac{-x + 5}{7^6^5^4^3^2 \left(96x + 880x + 3424x + 7320x + 9270x + 9270x + 6939x + 2835x + 486\right) + \cdots + 3x + 5x + 2} \\
&= \frac{4^3^2 \left(3937872x + 23627232x + 53161272x + 53161272x + 19935477\right)}{2^5^4^3^2 - 7331904x - 48132408x - 124381088x - 157475338x - 97074758x + 23090004} \\
r_0 &= \frac{82039/2500 \text{atanh} \left(\frac{7+8x}{\sqrt{5} \sqrt{2+5x+3x^2}}\right)/\sqrt{5} - \frac{6}{5} \left(37+47x\right)/\left((3+2x)^4 \sqrt{2+5x+3x^2}\right) - \frac{817}{25} \sqrt{2+5x+3x^2}/(3+2x)^3 - \frac{11596}{375} \sqrt{2+5x+3x^2}/(3+2x)^2 - \frac{973}{30} \sqrt{2+5x+3x^2}/(3+2x) + \cdots + \sqrt{5}}{2^5^4^3^2} \\
&= \frac{4^3^2 \left(3937872x + 23627232x + 53161272x + 53161272x + 19935477\right)}{2^5^4^3^2 - 7331904x - 48132408x - 124381088x - 157475338x - 97074758x + 23090004} \\
\end{align*}
\(\text{Type: Expression(Integer)}\)

\(d0:=\text{normalize(t0-D(r0,x))}\)

\(\text{clear all}\)

\(\text{Type: Expression(Integer)}\)

\(\text{r0:=-2/3*(3+2*x)^4*(29+35*x)/(2+5*x+3*x^2)^2)*atanh(1/2*(5+6*x)/sqrt(3)*sqrt(2+5*x+3*x^2))/sqrt(3)+8/3*(3+2*x)^3*(225+284*x)/sqrt(2+5*x+3*x^2)-6848/9*sqrt(2+5*x+3*x^2)-16496/27*(3+2*x)*sqrt(2+5*x+3*x^2)^2\)

\(\text{Type: Expression(Integer)}\)

\(\text{262}\)
\[ \text{d0} := \text{normalize}(t0-D(r0,x)) \]

\[ t0 := \frac{(5-x)(3+2x)^3}{(2+5x+3x^2)^{5/2}} \]

\[ r0 := \frac{-2/3(3+2x)^3(29+35x)}{(2+5x+3x^2)^{3/2}} - \frac{8/9\text{atanh}(1/2(5+6x)/\sqrt{3}\sqrt{2+5x+3x^2})}{\sqrt{3}} + \frac{8/3(3+2x)^2(230+283x)}{\sqrt{2+5x+3x^2}} - \frac{1888/3\sqrt{2+5x+3x^2} - 4528/9(3+2x)\sqrt{2+5x+3x^2}}{32896x + 82148x + 66886x + 17670}/3 \]
\[
d0 := \text{normalize}(t0 - D(r0, x)) \\
\text{Type: Expression(Integer)}
\]

\[
t0 := (5-x) \cdot (3+2x)^2 / (2+5x+3x^2)^{5/2} \\
\]

\[
r0 := -2/3 \cdot (3+2x)^2 \cdot (29+35x) / (2+5x+3x^2)^{3/2} + 376/3 \cdot (7+8x) / \sqrt{2+5x+3x^2} \\
\]

\[
d0 := \text{normalize}(t0 - D(r0, x)) \\
\text{Type: Expression(Integer)}
\]

\[
t0 := (5-x) \cdot (3+2x) / (2+5x+3x^2)^{5/2} \\
\]

\[
r0 := -2/3 \cdot (3+2x)^2 \cdot (29+35x) / (2+5x+3x^2)^{3/2} + 376/3 \cdot (7+8x) / \sqrt{2+5x+3x^2} \\
\]

\[
d0 := \text{normalize}(t0 - D(r0, x)) \\
\text{Type: Expression(Integer)}
\]

\[
t0 := (5-x) \cdot (3+2x) / (2+5x+3x^2)^{5/2} \\
\]

\[
r0 := -2/3 \cdot (3+2x)^2 \cdot (29+35x) / (2+5x+3x^2)^{3/2} + 376/3 \cdot (7+8x) / \sqrt{2+5x+3x^2} \\
\]

\[
d0 := \text{normalize}(t0 - D(r0, x)) \\
\text{Type: Expression(Integer)}
\]

\[
t0 := (5-x) \cdot (3+2x) / (2+5x+3x^2)^{5/2} \\
\]

\[
r0 := -2/3 \cdot (3+2x)^2 \cdot (29+35x) / (2+5x+3x^2)^{3/2} + 376/3 \cdot (7+8x) / \sqrt{2+5x+3x^2} \\
\]

\[
d0 := \text{normalize}(t0 - D(r0, x)) \\
\text{Type: Expression(Integer)}
\]
\[ \frac{2}{-2x + 7x + 15} \]

\[
\begin{array}{ccc}
\begin{array}{ccc}
4 & 3 & 2 \\
9x + 30x + 37x + 20x + 4 & \mid 3x + 5x + 2
\end{array}
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
2248x + 5620x + 4590x + 1222
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
3 & 2 \\
(3x + 5x + 2) & \mid 3x + 5x + 2
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
-2/3*(29+35x)/(2+5*x+3*x^2)^(3/2)+280/3*(5+6*x)/sqrt(2+5*x+3*x^2)
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
2248x + 5620x + 4590x + 1222
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
3 & 2 \\
(3x + 5x + 2) & \mid 3x + 5x + 2
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
-2/3*(29+35x)/(2+5*x+3*x^2)^(3/2)+280/3*(5+6*x)/sqrt(2+5*x+3*x^2)
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
2248x + 5620x + 4590x + 1222
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
3 & 2 \\
(3x + 5x + 2) & \mid 3x + 5x + 2
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
-2/3*(29+35x)/(2+5*x+3*x^2)^(3/2)+280/3*(5+6*x)/sqrt(2+5*x+3*x^2)
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
2248x + 5620x + 4590x + 1222
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
3 & 2 \\
(3x + 5x + 2) & \mid 3x + 5x + 2
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
-2/3*(29+35x)/(2+5*x+3*x^2)^(3/2)+280/3*(5+6*x)/sqrt(2+5*x+3*x^2)
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
2248x + 5620x + 4590x + 1222
\end{array}
\]

Type: Expression(Integer)

\[
\begin{array}{ccc}
3 & 2 \\
(3x + 5x + 2) & \mid 3x + 5x + 2
\end{array}
\]

Type: Expression(Integer)
--R  1680x + 4200x + 3430x + 914
--R (2) -----------------------------
--R  +------------+
--R 2        | 2
--R  (3x + 5x + 2)\|3x + 5x + 2
--R Type: Expression(Integer)
--E 551

--S 551 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R Type: Expression(Integer)
--E 552

)clear all

--S 553 of 1035
t0:=(5-x)/((3+2*x)*(2+5*x*3*x^2)^((5/2))
--R
--R
--R - x + 5
--R (1) ------------------------------------
--R  +------------+
--R 5 4 3 2 | 2
--R  (18x + 87x + 164x + 151x + 68x + 12)\|3x + 5x + 2
--R Type: Expression(Integer)
--E 553

--S 554 of 1035
r0:=-2/5*(37+47*x)/(2+5*x*3*x^2)^((3/2)+104/25*atanh(1/2*(7+8*x)/_sqrt(5)*sqrt(2+5*x*3*x^2)))/sqrt(5)+12/25*(701+836*x)/sqrt(2+5*x*3*x^2)
--R
--R
--R (2)
--R  +------------+
--R 2        | 2
--R (312x + 520x + 208)\|3x + 5x + 2 atanh(---------------)
--R
--R  +------------+
--R 2|5 \|3x + 5x + 2
--R
--R
--R /
--R
--R 2
--R Type: Expression(Integer)

266
(3) 0

Type: Expression(Integer)

)clear all

t0:=(5-x)/((3+2*x)^2*(2+5*x+3*x^2)^(5/2))

-x + 5

Type: Expression(Integer)

r0:=-2/5*(37+47*x)/((3+2*x)*(2+5*x+3*x^2)^(3/2))+408/25*atanh(1/2*(7+8*x)/sqrt(5)*sqrt(2+5*x+3*x^2)))/sqrt(5)+4/5*(401+462*x)/((3+2*x)*sqrt(2+5*x+3*x^2))+4416/25*sqrt(2+5*x+3*x^2)/(3+2*x)

2448x + 7752x + 7752x + 2448|3x + 5x + 2

Type: Expression(Integer)

r0:=-2/5*(37+47*x)/((3+2*x)*(2+5*x+3*x^2)^(3/2))+408/25*atanh(1/2*(7+8*x)/sqrt(5)*sqrt(2+5*x+3*x^2)))/sqrt(5)+4/5*(401+462*x)/((3+2*x)*sqrt(2+5*x+3*x^2))+4416/25*sqrt(2+5*x+3*x^2)/(3+2*x)

2448x + 7752x + 7752x + 2448|3x + 5x + 2

Type: Expression(Integer)
\[
d_0 := \text{normalize}(t_0 - D(r_0, x)) \\
(3) \quad 0 \\
\text{Type: Expression(Integer)} \\
\text{clear all} \\
t_0 := \frac{5 - x}{(3 + 2x)^3 (2 + 5x + 3x^2)^{5/2}} \\
(1) \quad -x + 5 \\
/ \\
7 \quad 6 \quad 5 \quad 4 \quad 3 \quad 2 \\
(72x + 564x + 1862x + 3355x + 3560x + 2233x + 756x + 108) \\
* \\
\text{Type: Expression(Integer)} \\
r_0 := \frac{-2/5(37 + 47x)}{(3 + 2x)^2 (2 + 5x + 3x^2)^{3/2}} + \frac{4884}{125} \text{atanh} \left( \frac{1/2(7 + 8x)}{\sqrt{5} \sqrt{2 + 5x + 3x^2}} \right) / \sqrt{5} + \frac{4}{25(1907 + 2112x)} \frac{(3 + 2x)^2 + 152 \sqrt{2 + 5x + 3x^2}}{(3 + 2x)^2} + \frac{11808}{125} \frac{\sqrt{2 + 5x + 3x^2}}{(3 + 2x)^2} \\
(2) \\
\frac{58608x + 273504x + 463980x + 336996x + 87912}{13x + 5x + 2} \\
* \\
\text{atanh}(\text{------------------------}) \\
\frac{8x + 7}{2} \\
\text{------------------------} \\
\frac{212544x + 1198296x + 2633232x + 2811628x + 1455774x + 2921264}{15} \\
/ \\
\frac{1500x + 7000x + 11875x + 8625x + 2250}{15} \ldots
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(5 - x)}{((3 + 2x)^4 \cdot (2 + 5x + 3x^2)^{5/2})} \]

\[ r_0 := -\frac{2}{5} \cdot \frac{(37 + 47x)}{((3 + 2x)^3 \cdot (2 + 5x + 3x^2)^{3/2})} + \frac{46108}{625} \cdot \text{atanh} \left( \frac{1}{2} \cdot \frac{7 + 8x}{\sqrt{5} \cdot \sqrt{2 + 5x + 3x^2}} \right) / \sqrt{5} + \frac{12}{25} \cdot \frac{(603 + 638x)}{((3 + 2x)^3 \cdot \sqrt{2 + 5x + 3x^2})} + \frac{47552}{375} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x)^3 + \frac{1048}{15} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x)^2 + \frac{9696}{625} \cdot \sqrt{2 + 5x + 3x^2} / (3 + 2x) \]
\[
\begin{align*}
&2\sqrt{5}\sqrt{3x + 5x + 2} \\
&+ 6 \quad 5 \quad 4 \quad 3 \quad 2 \\
&1047168x + 8990064x + 30669672x + 53435272x + 50210052x \\
&+ 24121914x + 4627858 \\
&* \\
&\sqrt{5} \\
&/ \\
&5 \quad 4 \quad 3 \quad 2 \\
&(45000x + 277500x + 671250x + 793125x + 455625x + 101250)\sqrt{5} \\
&* \\
&\sqrt{5}
\end{align*}
\]

Type: Expression(Integer)

--E 563

--S 564 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R (3) 0
--R Type: Expression(Integer)
--E 564

)clear all

--S 565 of 1035
t0:=(5-x)*(3+2*x)^(7/2)*(2+5*x+3*x^2)
--R
--R
--R (1) (- 24x - 28x + 382x + 1367x + 1872x + 1161x + 270)\sqrt{2x + 3}
--R Type: Expression(Integer)
--E 565

--S 566 of 1035
r0:=65/72*(3+2*x)^(9/2)-109/88*(3+2*x)^(11/2)+47/104*(3+2*x)^(13/2)-
\quad 1/40*(3+2*x)^(15/2)
--R
--R
--R (2)
--R
--R
--R (3) 0
--R

}clear all
\[ t_0 := (5-x) \cdot (3+2x)^{5/2} \cdot (2+5x+3x^2) \]

\[ r_0 := \frac{65}{56} \cdot (3+2x)^{7/2} - \frac{109}{72} \cdot (3+2x)^{9/2} + \frac{47}{88} \cdot (3+2x)^{11/2} - \frac{3}{104} \cdot (3+2x)^{13/2} \]

\[
\begin{align*}
\text{d0} & := \text{normalize}(t_0 - D(r_0, x)) \\
\text{d0} & := \text{normalize}\left( (5-x) \cdot (3+2x)^{5/2} \cdot (2+5x+3x^2) - \left( \frac{65}{56} \cdot (3+2x)^{7/2} - \frac{109}{72} \cdot (3+2x)^{9/2} + \frac{47}{88} \cdot (3+2x)^{11/2} - \frac{3}{104} \cdot (3+2x)^{13/2} \right) \right)
\end{align*}
\]
)clear all

--S 571 of 1035
t0:=(5-x)*(3+2*x)^(3/2)*(2+5*x+3*x^2)
--R
--R
--R 4 3 2 +-------+
--R (1) (- 6x + 11x + 76x + 89x + 30)\|2x + 3
--R
--R Type: Expression(Integer)
--E 571

--S 572 of 1035
r0:=13/8*(3+2*x)^(5/2)-109/56*(3+2*x)^(7/2) + 47/72*(3+2*x)^(9/2) -
3/88*(3+2*x)^(11/2)
--R
--R
--R 5 4 3 2 +------+
--R (- 756x + 1568x + 15627x + 28143x + 19251x + 4617)\|2x + 3
--R
--R (2) ---------------------------------------------------------------
--R 693
--R
--R Type: Expression(Integer)
--E 572

--S 573 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R
--R Type: Expression(Integer)
--E 573

)clear all

--S 574 of 1035
t0:=(5-x)*(2+5*x+3*x^2)*sqrt(3+2*x)
--R
--R
--R 3 2 +------+
--R (1) (- 3x + 10x + 23x + 10)\|2x + 3
--R
--R Type: Expression(Integer)
--E 574

--S 575 of 1035
r0:=65/24*(3+2*x)^(3/2)-109/40*(3+2*x)^(5/2) + 47/66*(3+2*x)^(7/2) -
1/24*(3+2*x)^(9/2)
--R
--R
--R 4 3 2 +-------+
--R (- 70x + 285x + 1083x + 949x + 303)\|2x + 3

272
\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]

\[t_0 := \frac{(5-x)(2+5x+3x^2)}{\sqrt{3+2x}}\]

\[r_0 := -\frac{109}{24}(3+2x)^{3/2} + \frac{47}{40}(3+2x)^{5/2} - \frac{3}{56}(3+2x)^{7/2} + \frac{65}{8}\sqrt{3+2x}\]

\[\text{clear all}\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]

\(\text{clear all}\)
t₀ := (5-x)*(2+5*x+3*x^2)/(3+2*x)^(3/2)

(--R
--R
--R 3 2
--R - 3x + 10x + 23x + 10
--R (1) -----------------------
--R +------+
--R (2x + 3)\|2x + 3
--R Type: Expression(Integer)

r₀ := 47/24*(3+2*x)^(3/2)-3/40*(3+2*x)^(5/2)+(-65/8)/sqrt(3+2*x)-
109/8*sqrt(3+2*x)

(--R
--R
--R 3 2
--R - 9x + 77x - 117x - 501
--R (2) -------------------------
--R +------+
--R 15\|2x + 3
--R Type: Expression(Integer)

d₀ := normalize(t₀-D(r₀,x))

(--R
--R
--R (3) 0
--R Type: Expression(Integer)

)clear all

)}
--R
--R 3 2
--R - 3x + 57x + 273x + 263
--R (2) -------------------------
--R +------+
--R (6x + 9)\|2x + 3
--R
--E 584

Type: Expression(Integer)

--S 585 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R
--E 585

Type: Expression(Integer)

)clear all

--S 586 of 1035
t0:=(5-x)*(2+5*x+3*x^2)/(3+2*x)^(7/2)
--R
--R
--R 3 2
--R - 3x + 10x + 23x + 10
--R (1) -------------------------
--R +------+
--R (8x + 36x + 54x + 27)\|2x + 3
--R
--E 586

Type: Expression(Integer)

--S 587 of 1035
r0:=(-13/8)/(3+2*x)^(5/2)+109/24/(3+2*x)^(3/2)+(-47/8)/sqrt(3+2*x)-
3/8*sqrt(3+2*x)
--R
--R
--R 3 2
--R - 9x - 111x - 245x - 153
--R (2) -------------------------
--R +------+
--R (12x + 36x + 27)\|2x + 3
--R
--E 587

Type: Expression(Integer)

--S 588 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R
--E 588

Type: Expression(Integer)
\[ t_0 := (5-x)(3+2x)^{5/2}(2+5x+3x^2)^2 \]

\[ r_0 := \frac{325}{288}(3+2x)^{9/2} - \frac{1065}{352}(3+2x)^{11/2} + \frac{651}{208}(3+2x)^{13/2} - \frac{359}{240}(3+2x)^{15/2} + \frac{165}{544}(3+2x)^{17/2} - \frac{9}{608}(3+2x)^{19/2} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
r0 := \frac{325}{224}(3+2x)^{\frac{7}{2}} - \frac{355}{96}(3+2x)^{\frac{9}{2}} + \frac{651}{176}(3+2x)^{\frac{11}{2}} - \frac{359}{208}(3+2x)^{\frac{13}{2}} + \frac{11}{32}(3+2x)^{\frac{15}{2}} - \frac{9}{544}(3+2x)^{\frac{17}{2}}

\frac{d0}{\text{normalize}(t0-D(r0,x))}

t0 := (5-x)(3+2x)^{\frac{3}{2}}(2+5x+3x^2)^2

r0 := \frac{65}{32}(3+2x)^{\frac{5}{2}} - \frac{1065}{224}(3+2x)^{\frac{7}{2}} + \frac{217}{48}(3+2x)^{\frac{9}{2}} - \frac{359}{176}(3+2x)^{\frac{11}{2}} + \frac{165}{416}(3+2x)^{\frac{13}{2}} - \frac{3}{160}(3+2x)^{\frac{15}{2}}
\[ \frac{857988x + 128736}{15015} \]

Type: Expression(Integer)

---E 596

---S 597 of 1035

d0 := normalize(t0-D(r0,x))

--R

--R (3) 0

Type: Expression(Integer)

---E 597

)clear all

---S 598 of 1035

t0 := (5-x)*(2+5*x+3*x^2)^2*sqrt(3+2*x)

--R

--R

--R (1) (- 9x + 15x + 113x + 165x + 96x + 20)\|2x + 3

Type: Expression(Integer)

---E 598

---S 599 of 1035

r0 := 325/96*(3+2*x)^(3/2)-213/32*(3+2*x)^(5/2)+93/16*(3+2*x)^(7/2)-359/144*(3+2*x)^(9/2)+15/32*(3+2*x)^(11/2)-9/416*(3+2*x)^(13/2)

--R

--R

--R (2) ----------------------------

Type: Expression(Integer)

---E 599

---S 600 of 1035

d0 := normalize(t0-D(r0,x))

--R

--R

--R (3) 0

278
\[ t_0 := (5-x)(2+5x+3x^2)^2 / \sqrt{3+2x} \]

\[ r_0 := -\frac{355}{32}(3+2x)^{3/2} + \frac{651}{80}(3+2x)^{5/2} - \frac{359}{112}(3+2x)^{7/2} + \frac{55}{96}(3+2x)^{9/2} - \frac{9}{352}(3+2x)^{11/2} + \frac{325}{32}\sqrt{3+2x} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := (5-x)(2+5x+3x^2)^2 / (3+2x)^{3/2} \]
\[ r_0 := \frac{217}{16}(3+2x)^{3/2} - \frac{359}{80}(3+2x)^{5/2} + \frac{165}{224}(3+2x)^{7/2} - \frac{1}{32}(3+2x)^{9/2} + \frac{-325}{32}{\sqrt{3+2x}} - \frac{1065}{32}{\sqrt{3+2x}} \]

\[ (2) \] ---------

\[ \frac{35}{4}x + 3 \]

\[ Type: Expression(Integer) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ (3) \] 0

\[ Type: Expression(Integer) \]

\[ )\text{clear all} \]

\[ t_0 := \frac{(5-x)*(2+5x+3x^2)^2}{(3+2x)^{5/2}} \]

\[ (1) \] ---------

\[ \frac{42}{4}x + 63 \]

\[ Type: Expression(Integer) \]

\[ )\text{clear all} \]

\[ r_0 := \frac{-325}{96}(3+2x)^{3/2} - \frac{359}{48}(3+2x)^{3/2} + \frac{33}{32}(3+2x)^{5/2} - \frac{9}{224}(3+2x)^{7/2} + \frac{1065}{32}{\sqrt{3+2x}} + \frac{651}{16}{\sqrt{3+2x}} \]

\[ (2) \] ---------

\[ \frac{42}{4}x + 63 \]

\[ Type: Expression(Integer) \]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ \text{Type: Expression(Integer)} \]

\( t_0 := (5-x) \times (2+5x+3x^2)^2 / (3+2x)^{7/2} \)
\[ \text{Type: Expression(Integer)} \]

\[ r_0 := \frac{-65}{32} / (3+2x)^{5/2} + \frac{355}{32} / (3+2x)^{3/2} + \frac{55}{32} \times (3+2x)^{3/2} - \frac{9}{160} \times (3+2x)^{5/2} - \frac{-651}{16} / \sqrt{3+2x} - \frac{359}{16} \times \sqrt{3+2x} \]
\[ \text{Type: Expression(Integer)} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ \text{Type: Expression(Integer)} \]

\[ t_0 := (5-x) \times (3+2x)^{7/2} \times (2+5x+3x^2)^3 \]
\[ \text{Type: Expression(Integer)} \]

\[ r_0 := \frac{-65}{32} / (3+2x)^{5/2} + \frac{355}{32} / (3+2x)^{3/2} + \frac{55}{32} \times (3+2x)^{3/2} - \frac{9}{160} \times (3+2x)^{5/2} - \frac{-651}{16} / \sqrt{3+2x} - \frac{359}{16} \times \sqrt{3+2x} \]
\[ \text{Type: Expression(Integer)} \]
\begin{verbatim}
(1) 9 8 7 6 5 4 3 2
282
\end{verbatim}
$$r_0 := \frac{1625}{896}(3+2x)^{7/2} - \frac{7925}{1152}(3+2x)^{9/2} + \frac{1455}{128}(3+2x)^{11/2} - \frac{17201}{1664}(3+2x)^{13/2} + \frac{2095}{384}(3+2x)^{15/2} - \frac{207}{128}(3+2x)^{17/2} + \frac{567}{2432}(3+2x)^{19/2} - \frac{9}{896}(3+2x)^{21/2}$$

$$d_0 := \text{normalize}(t_0 - D(r_0, x))$$

$$t_0 := (5-x)(3+2x)^{3/2}(2+5x+3x^2)^3$$
\[
\begin{align*}
r_0 &= \frac{325}{128}(3+2x)^{5/2} - \frac{7925}{896}(3+2x)^{7/2} + \frac{5335}{384}(3+2x)^{9/2} - \frac{17201}{1408}(3+2x)^{11/2} + \\
& \quad \frac{10475}{1408}(3+2x)^{13/2} - \frac{1173}{640}(3+2x)^{15/2} + \frac{567}{2176}(3+2x)^{17/2} - \frac{27}{2432}(3+2x)^{19/2}.
\end{align*}
\]

\[
\begin{align*}
d_0 &= \text{normalize}(t_0 - D(r_0, x)).
\end{align*}
\]
\[\begin{align*}
&\text{Type: Expression(Integer)}
\end{align*}\]
\[
d0 := \text{normalize}(t0 - D(r0, x))
\]

\[
(3) 0
\]

\[
\text{Type: Expression(Integer)}
\]

\[
)\text{clear all}
\]

\[
t0 := (5 - x)(2 + 5x + 3x^2)^3/(3 + 2x)^{3/2}
\]

\[
7 5 4 3 2
\]

\[
- 27x + 396x + 1090x + 1382x + 870x + 292x + 40
\]

\[
(1) \text{-----------------------------------}
\]

\[
2x + 3
\]

\[
\text{Type: Expression(Integer)}
\]

\[
r0 := 5335/128(3 + 2x)^{3/2} - 17201/640(3 + 2x)^{5/2} + 10475/896(3 + 2x)^{7/2} -
\]

\[
391/128(3 + 2x)^{9/2} + 567/1408(3 + 2x)^{11/2} - 27/1664(3 + 2x)^{13/2} -
\]

\[
(-1625/128)/\sqrt{3 + 2x} - 7925/128\sqrt{3 + 2x}
\]

\[
(2) 7 6 5 4 3 2
\]

\[
- 10395x + 19845x + 180530x + 392500x + 398339x + 256433x - 77138x
\]

\[
+ 431614
\]

\[
/ +------+
\]

\[
5005\sqrt{2x + 3}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
d0 := \text{normalize}(t0 - D(r0, x))
\]

\[
(3) 0
\]

\[
\text{Type: Expression(Integer)}
\]
\[ t_0 := \frac{(5-x)(2+5x+3x^2)^3}{(3+2x)^{5/2}} \] 

\[ r_0 := \frac{-1625/384}{(3+2x)^{3/2}} - \frac{17201/384}{(3+2x)^{3/2}} + \frac{2095/128}{(3+2x)^{5/2}} - \frac{3519/896}{(3+2x)^{7/2}} + \frac{63/128}{(3+2x)^{9/2}} - \frac{27/1408}{(3+2x)^{11/2}} + \frac{7925/128}{\sqrt{3+2x}} + \frac{16005/128}{\sqrt{3+2x}} \] 

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \] 

\[ \frac{287}{20} \]
\[ r_0 := \frac{-325/128}{(3+2x)^{5/2}} + \frac{7925/384}{(3+2x)^{3/2}} + \frac{10475/384}{(3+2x)^{3/2}} - \frac{3519/640}{(3+2x)^{5/2}} + \frac{81/128}{(3+2x)^{7/2}} - \frac{3/128}{(3+2x)^{9/2}} + \frac{-16005/128}{\sqrt{(3+2x)}} - \frac{17201/128}{\sqrt{(3+2x)}} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\( t_0 := \frac{(5-x)(3+2x)^{7/2}}{(2+5x+3x^2)} \)

\[ r_0 := \frac{526/81}{(3+2x)^{3/2}} + \frac{62/45}{(3+2x)^{5/2}} - \frac{2/21}{(3+2x)^{7/2}} + 12\text{atanh}(\sqrt{(3+2x)}) - \frac{4250/81}{\text{atanh}(\frac{\sqrt{3/5}}{\sqrt{(3+2x)}})} * \sqrt{\frac{5}{3}} + \frac{3278/81}{\sqrt{(3+2x)}} \]

\( r_0 := \frac{526/81}{(3+2x)^{3/2}} + \frac{62/45}{(3+2x)^{5/2}} - \frac{2/21}{(3+2x)^{7/2}} + 12\text{atanh}(\sqrt{(3+2x)}) - \frac{4250/81}{\text{atanh}(\frac{\sqrt{3/5}}{\sqrt{(3+2x)}})} * \sqrt{\frac{5}{3}} + \frac{3278/81}{\sqrt{(3+2x)}} \)

\} \text{clear all} \]

\[ t_0 := \frac{(5-x)(3+2x)^{7/2}}{(2+5x+3x^2)} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ r_0 := \frac{526/81}{(3+2x)^{3/2}} + \frac{62/45}{(3+2x)^{5/2}} - \frac{2/21}{(3+2x)^{7/2}} + 12\text{atanh}(\sqrt{(3+2x)}) - \frac{4250/81}{\text{atanh}(\frac{\sqrt{3/5}}{\sqrt{(3+2x)}})} * \sqrt{\frac{5}{3}} + \frac{3278/81}{\sqrt{(3+2x)}} \]
\[
\text{Type: Expression(Integer)}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{Type: Expression(Integer)}
\]
\begin{align*}
t_0 &= \frac{-(5-x) \sqrt{3+2x}}{(2+5x+3x^2)} \\
r_0 &= 12 \tanh(\sqrt{3+2x}) - \frac{34}{3} \tanh(\sqrt{3/5} \sqrt{3+2x}) \sqrt{5/3} - \frac{2}{3} \sqrt{3+2x} \\
d_0 &= \text{normalize}(t_0 - D(r_0,x))
\end{align*}

\text{Type: Expression(Integer)}
\[ r_0 := 12 \arctanh(\sqrt{3+2x}) - \frac{34}{5} \arctanh(\sqrt{\frac{3}{5}} \sqrt{3+2x}) \sqrt{\frac{3}{5}} - \frac{26}{5}{\sqrt{3+2x}} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(5-x)}{((3+2x)^{3/2} \cdot (2+5x+3x^2))} \]

\[ r_0 := 12 \arctanh(\sqrt{3+2x}) - \frac{34}{5} \arctanh(\sqrt{\frac{3}{5}} \sqrt{3+2x}) \sqrt{\frac{3}{5}} - \frac{26}{5}{\sqrt{3+2x}} \]
\[60\sqrt{2x + 3} \text{ atanh}(\sqrt{2x + 3}) - 34\sqrt{3} \sqrt{2x + 3} \text{ atanh}(\sqrt{2x + 3}) + \sqrt{5}\]

\[\frac{-26\sqrt{5}}{2x + 3} \sqrt{2x + 3} \text{ atanh}(\sqrt{2x + 3}) + \frac{-1188x - 1912}{\sqrt{5}}\]

\[\text{Type: Expression(Integer)}\]
\(\text{d0} := \text{normalize}(t0 - D(r0, x))\)

\(\text{r0} := (-26/25)/(3+2*x)^{5/2} + (-66/25)/(3+2*x)^{3/2} + 12\*\text{atanh}(\sqrt{3+2*x}) - 306/125\*\text{atanh}(\sqrt{3/5}\*\sqrt{3+2*x}) \star\sqrt{3/5} + (-1194/125)/\sqrt{3+2*x}\)

\(\text{t0} := (5-x)/((3+2*x)^{7/2}*(2+5*x+3*x^2))\)

\(\text{t0} = -x + 5\)

\(\text{r0} = 24x + 148x + 358x + 423x + 243x + 54)\sqrt{2x + 3}\)

\(\text{r0} = 6000x + 18000x + 13500)\sqrt{2x + 3}\) atanh(\(\sqrt{2x + 3}\)) + (6000x + 18000x + 13500)\sqrt{2x + 3}\) atanh(\(\sqrt{2x + 3}\)) + 6000x + 18000x + 13500)\sqrt{2x + 3}\) atanh(\(\sqrt{2x + 3}\))

\(\text{r0} = 5000x + 15000x + 1125)\sqrt{2x + 3}\)

\(\text{d0} := \text{normalize}(t0 - D(r0, x))\)
\( t_0 := (5-x)(3+2x)^{(7/2)}/(2+5x+3x^2)^2 \)

\[
-8x + 4x + 126x + 243x + 135)/\sqrt{2x + 3}
\]

\[
9x + 30x + 37x + 20x + 4
\]

\( r_0 := 826/27(3+2x)^{(3/2)} + 70/3(3+2x)^{(5/2)} - \frac{(3+2x)^{(7/2)}(29+35x)}{(2+5x+3x^2)} - 154\text{atanh}(/\sqrt{3+2x}) + 2800/27\text{atanh}(\sqrt{5/3}\sqrt{3+2x}) \cdot \sqrt{5/3} + 1358/27\sqrt{3+2x} \)

\[
-12474x - 20790x - 8316)/\sqrt{3 \sqrt{2x + 3} + 3}
\]

\[
(8400x + 14000x + 5600)\sqrt{5} \text{atanh}(\sqrt{3 \sqrt{2x + 3} + 3})
\]

\[
-48x + 400x - 1843x - 2129)/\sqrt{3 \sqrt{2x + 3} + 3}
\]

\[
(81x + 135x + 54)/\sqrt{3}
\]

\( d_0 := \text{normalize}(t_0 - D(r_0, x)) \)
t0:=(5-x)*(3+2*x)^(5/2)/(2+5*x+3*x^2)^2

(-4*x + 8*x + 51*x + 45)/\2x + 3

9*x + 30*x + 37*x + 20*x + 4

Type: Expression(Integer)

d0:=normalize(t0-D(r0,x))

Type: Expression(Integer)
\[ t_0 := \frac{(5-x)(3+2x)^{3/2}}{(2+5x+3x^2)^2} \]

\[ r_0 := \frac{-(3+2x)^{3/2}(29+35x)}{2+5x+3x^2} - 106 \cdot \text{atanh}(\sqrt{3+2x}) + \frac{248}{3} \cdot \text{atanh}\left(\frac{\sqrt{3/5} \cdot \sqrt{3+2x}}{\sqrt{3+2x}}\right) + \frac{70}{3} \cdot \sqrt{3+2x} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
--R 9x + 30x + 37x + 20x + 4
--R Type: Expression(Integer)
--E 670

--S 671 of 1035
r0:=-82*atanh(sqrt(3+2*x))+316*atanh(sqrt(3/5)*sqrt(3+2*x))/sqrt(15)_
(29+35*x)*sqrt(3+2*x)/(2+5*x+3*x^2)
--R
--R
--R (2)
--R
--R 2
--R (- 246x - 410x - 164)\|15 atanh(\|2x + 3 )
--R +
--R ++ +++++
--R 2 \|3 \|2x + 3
--R +++++ ++
--R (948x + 1580x + 632)atanh(-------------) + (- 35x - 29)\|15 \|2x + 3
--R +
--R \|5
--R /
--R 2
--R (3x + 5x + 2)\|15
--R Type: Expression(Integer)
--E 671

--S 672 of 1035
d0:=normalize(t0-D(r0,x))

)clear all

--S 673 of 1035
t0:=(5-x)/((2+5*x+3*x^2)^2*sqrt(3+2*x))

--S 674 of 1035

298
\[ r_0 := -58 \cdot \text{atanh}(\sqrt{3+2x}) + 384/5 \cdot \text{atanh}(\sqrt{3/5} \cdot \sqrt{3+2x}) \cdot \sqrt{3/5} - \\
\quad 3/5 \cdot (37+47x) / ((2+5x+3x^2)) \]
\[-R \quad (-2550x - 4250x - 1700) \sqrt{12x + 3} \quad \text{atanh}(\sqrt{12x + 3})\]
\[-R \quad +\]
\[-R \quad 2 \quad +\quad \text{atanh}(\sqrt{12x + 3})\]
\[-R \quad (4068x + 6780x + 2712) \sqrt{12x + 3} \quad \text{atanh}(-\ldots)\]
\[-R \quad +\]
\[-R \quad \sqrt{15}\]
\[-R \quad +\]
\[-R \quad 2 \quad +\]
\[-R \quad (-1518x - 3235x - 1567) \sqrt{15}\]
\[-R \quad /\]
\[-R \quad 2 \quad +\quad \text{atanh}(\sqrt{15})\]
\[-R \quad (75x + 125x + 50) \sqrt{12x + 3}\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 677\]

\[d0 := \text{normalize}(t0 - D(r0, x))\]
\[-R\]
\[-R\]
\[-R \quad (3) \quad 0\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 678\]

}\text{clear all}\]

\[d0 := \text{normalize}(t0 - D(r0, x))\]
\[-R\]
\[-R\]
\[-R \quad (3) \quad 0\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 678\]

\[\text{clear all}\]

\[t0 := \frac{5 - x}{(3 + 2x) \sqrt{5}/2 \cdot (2 + 5x + 3x^2)^2}\]
\[-R\]
\[-R\]
\[-R \quad (1) \quad \frac{-x + 5}{6 \quad 5 \quad 4 \quad 3 \quad 2}\]
\[-R \quad +\quad \text{atanh}(\sqrt{5/2} \cdot (\sqrt{3 + 2x})\]
\[-R \quad (36x + 228x + 589x + 794x + 589x + 228x + 36) \sqrt{12x + 3}\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 679\]

\[r0 := \frac{-262/15}{(3 + 2x)^2 - 3/5 \cdot (37 + 47x)/(3 + 2x)^2 \cdot (2 + 5x + 3x^2)^2) - 10 \cdot \text{atanh}(\sqrt{3 + 2x}) + 936/25 \cdot \text{atanh}(3/5) + \sqrt{3/5} + \sqrt{3 + 2x})\]
\[-R\]
\[-R\]
\[-R \quad (2)\]
\[-R \quad 3 \quad 2 \quad +\quad \text{atanh}(\sqrt{3 \cdot 12x + 3})\]
\[-R \quad +\]
\[-R \quad 3 \quad 2 \quad +\quad \text{atanh}(\sqrt{3 \cdot 12x + 3})\]
\[-R \quad (16848x + 53352x + 53352x + 16848) \sqrt{3 \cdot 12x + 3}\]

\[\text{clear all}\]

\[d0 := \text{normalize}(t0 - D(r0, x))\]
\[-R\]
\[-R\]
\[-R \quad (3) \quad 0\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 678\]

\[\text{clear all}\]

\[t0 := \frac{5 - x}{(3 + 2x) \sqrt{5}/2 \cdot (2 + 5x + 3x^2)^2}\]
\[-R\]
\[-R\]
\[-R \quad (1) \quad \frac{-x + 5}{6 \quad 5 \quad 4 \quad 3 \quad 2}\]
\[-R \quad +\quad \text{atanh}(\sqrt{5/2} \cdot (\sqrt{3 + 2x})\]
\[-R \quad (36x + 228x + 589x + 794x + 589x + 228x + 36) \sqrt{12x + 3}\]
\[-R \quad \text{Type: Expression(Integer)}\]
\[-E 679\]

\[r0 := \frac{-262/15}{(3 + 2x)^2 - 3/5 \cdot (37 + 47x)/(3 + 2x)^2 \cdot (2 + 5x + 3x^2)^2) - 10 \cdot \text{atanh}(\sqrt{3 + 2x}) + 936/25 \cdot \text{atanh}(3/5) + \sqrt{3/5} + \sqrt{3 + 2x})\]
\[-R\]
\[-R\]
\[-R \quad (2)\]
\[-R \quad 3 \quad 2 \quad +\quad \text{atanh}(\sqrt{3 \cdot 12x + 3})\]
\[-R \quad +\]
\[-R \quad 3 \quad 2 \quad +\quad \text{atanh}(\sqrt{3 \cdot 12x + 3})\]
\[-R \quad (16848x + 53352x + 53352x + 16848) \sqrt{3 \cdot 12x + 3}\]
\begin{verbatim}
--R
--R  +
--R    3  2
--R  (- 12348x - 43032x - 47767x - 16633) / 5
--R  / 3  2
--R  (450x + 1425x + 1425x + 450) / 5  / 2x + 3
--R
--R  Type: Expression(Integer)
--E 680

--S 681 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R  (3) 0
--R
--E 681

)clear all

--S 682 of 1035
t0:=(5-x)/((3+2*x)^(7/2)*(2+5*x+3*x^2)^2)
--R
--R  (1)
--R  - x + 5
--R
--R  Type: Expression(Integer)
--E 682

--S 683 of 1035
r0:=(-2114/125)/(3+2*x)^(5/2)+(-7042/375)/(3+2*x)^(3/2)-3/5*(37+47*x)/((3+2*x)^(5/2)*(2+5*x+3*x^2))+14*atanh(sqrt(3+2*x))+15876/625*atanh(sqrt(3/5)*sqrt(3+2*x))*sqrt(3/5)+(-24626/625)/sqrt(3+2*x)
--R
--R  (2)
--R  4 3 2
--R  +------+
--R  (315000x + 1470000x + 2493750x + 1811250x + 472500) / 15  / 2x + 3
--R  *
--R  +------+
--R  atanh(\sqrt2x + 3 )
--R  +
--R  4 3 2
--R  +------+
--R  (571536x + 2667168x + 4524660x + 3286332x + 857304) / 13  / 2x + 3
--R  *
--R
--E 301
\end{verbatim}
\[ \left( \frac{\sqrt{3} \sqrt{2x + 3}}{5} \right) \]

\[ \frac{\left( - \frac{886536x}{4} - \frac{434828x}{7} - \frac{772530x}{5} - \frac{5977997x}{2} - \frac{1646109}{12x + 3} \right)}{\left( 22500x + 105000x + 178125x + 129375x + 33750 \right)} \]

\[ \text{Type: Expression(Integer)} \]

\[ d0 := \text{normalize}(t0 - D(r0, x)) \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{clear all} \]

\[ t0 := (5-x)(3+2x)^{9/2} / (2+5x+3x^2)^3 \]

\[ \text{Type: Expression(Integer)} \]

\[ r0 := -\frac{3151}{9}(3+2x)^{3/2} - 283(3+2x)^{5/2} - \frac{1}{2}(3+2x)^{9/2}(29+35x) / (2+5x+3x^2)^2 + 3/2(3+2x)^{7/2}(230+283x)/(2+5x+3x^2) + 1962\text{atanh}(\sqrt{3+2x}) - 13675/9\text{atanh}(\sqrt{3/5}\sqrt{3+2x})\cdot\sqrt{5/3} - 3983/9\sqrt{3+2x} \]

\[ \text{Type: Expression(Integer)} \]
\[
\begin{align*}
&\alpha + \\
&\beta + \\
&\gamma + \\
&\delta + \\
&\epsilon + \\
&\zeta + \\
&\eta + \\
&\theta + \\
&\iota + \\
&\kappa + \\
&\lambda + \\
&\mu + \\
&\nu + \\
&\xi + \\
&\omicron + \\
&\pi + \\
&\rho + \\
&\sigma + \\
&\tau + \\
&\upsilon + \\
&\phi + \\
&\chi + \\
&\psi + \\
&\omega + \\
\end{align*}
\]
\[
\text{atanh}(\sqrt[5]{\frac{3}{2}x + 3}) + \frac{3}{2} \\text{atanh}(\sqrt[5]{\frac{3}{2}x + 3}) + \frac{12443x + 30979x + 25073x + 6555}{3\sqrt[2]{2x + 3}} \\
\text{atanh}(\sqrt[5]{\frac{3}{2}x + 3}) + \frac{4}{3\sqrt[2]{2x + 3}} + \frac{54x + 180x + 222x + 120x + 24}{3}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{d0}:=\text{normalize(t0-D(r0,x))}
\]

\[
\text{clear all}
\]

\[
\text{t0:=(5-x)*(3+2*x)^{5/2}/(2+5*x+3*x^2)^3}
\]

\[
\text{r0:=-1/2*(3+2*x)^{5/2}*(29+35*x)/(2+5*x+3*x^2)^2+5/2*(3+2*x)^{3/2}*(142+169*x)/(2+5*x+3*x^2)+1250*atanh(sqrt(3+2*x))-2905/3*atanh(sqrt(3/5)*sqrt(3+2*x))*sqrt(5/3)-845/3*sqrt(3+2*x)}
\]

\[
\text{Type: Expression(Integer)}
\]

\[
\text{r0:=-1/2*(3+2*x)^{5/2}*(29+35*x)/(2+5*x+3*x^2)^2+5/2*(3+2*x)^{3/2}*(142+169*x)/(2+5*x+3*x^2)+1250*atanh(sqrt(3+2*x))-2905/3*atanh(sqrt(3/5)*sqrt(3+2*x))*sqrt(5/3)-845/3*sqrt(3+2*x)}
\]

\[
\text{Type: Expression(Integer)}
\]
d0 := normalize(t0 - D(r0, x))

r0 := -1*(3 + 2*x)^(3/2)*(29 + 35*x)/(2 + 5*x + 3*x^2)^2 + 966*atanh(sqrt(3 + 2*x)) - 1247*atanh(sqrt(3/5)*sqrt(3 + 2*x))*sqrt(3/5) + 3/2*(240 + 281*x)*sqrt(3 + 2*x)/(2 + 5*x + 3*x^2)
\[ \frac{2529x + 6305x + 5123x + 1353}{5} \sqrt{2x + 3} \]

Type: Expression(Integer)

\[ \frac{4}{3} \frac{2}{1} \]

\[ \frac{18x + 60x + 74x + 40x + 8}{5} \]

Type: Expression(Integer)

\[ \text{d0} := \text{normalize(t0-D(r0,x))} \]

\[ \frac{3}{0} \]

Type: Expression(Integer)

\[ \text{clear all} \]

\[ \text{t0} := (5-x) \sqrt{3+2x}/(2+5x+3x^2)^3 \]

\[ \frac{27x + 135x + 279x + 305x + 186x + 60x + 8}{6} \]

Type: Expression(Integer)

\[ \text{r0} := 730 \text{atanh} (\sqrt{3+2x}) - \frac{4713}{5} \text{atanh} (\sqrt{3/5} \sqrt{3+2x}) \sqrt{3/5} - \frac{1}{2} (29+35x) \sqrt{3+2x}/(2+5x+3x^2)^2 + \frac{3}{10} (878+1063x) \sqrt{3+2x}/(2+5x+3x^2) \]

\[ \frac{65700x + 219000x + 270100x + 146000x + 29200}{15} \text{atanh} (\sqrt{2x + 3}) \]

\[ \frac{64834x - 282780x - 348762x - 188520x - 37704}{3} \]

\[ \text{atanh} (\sqrt{3+2x}) \]

\[ \frac{9567x + 23847x + 19373x + 5123}{15} \sqrt{2x + 3} \]
-R /  
-<R | 4 3 2 |  
-<R (90x + 300x + 370x + 200x + 40)/5  
-<R Type: Expression(Integer)  
--E 698  
--S 699 of 1035  
d0:=normalize(t0-D(r0,x))  
-<R  
-<R  
-<R (3) 0  
-<R Type: Expression(Integer)  
--E 699  
)clear all  
--S 700 of 1035  
t0:=(5-x)/((2+5x+3x^2)^3*sqrt(3+2x))  
-<R  
-<R  
-<R - x + 5  
-<R (1) ---------------------------------------------------------  
-<R | 6 5 4 3 2 | +------|  
-<R (27x + 135x + 279x + 305x + 186x + 60x + 8)/2x + 3  
-<R Type: Expression(Integer)  
--E 700  
--S 701 of 1035  
r0:=542*atanh(sqrt(3+2x))-17463/25*atanh(sqrt(3/5)*sqrt(3+2x))*sqrt(3/5)-  
3/10*(37+47x)*sqrt(3+2x)/(2+5x+3x^2)^2+1/50*(9734+11739x)*_  
sqrt(3+2x)/(2+5x+3x^2)  
-<R  
-<R  
-<R (2)  
-<R | 4 3 2 | +------|  
-<R (243900x + 813000x + 1002700x + 542000x + 1084000x)/15 atanh(1\2x + 3 )  
-<R +  
-<R | 4 3 2 | +--  
-<R (- 314334x - 1047780x - 1292262x - 698520x - 139704)/3  
-<R *  
-<R ++ +-------  
-<R \3 \2x + 3  
-<R atanh(--------)  
-<R ++  
-<R \15  
-<R +  
-<R | 3 2 | +--  
-<R (35217x + 87897x + 71443x + 18913)/15 \2x + 3  
-<R /  
-<R | 4 3 2 | ++

307
\[
d\:=\text{normalize}(t_0 - D(r_0, x))
\]

\[
t_0 := \frac{5-x}{((3+2x)^{3/2}(2+5x+3x^2)^3)
\]

\[
r_0 := 402*\text{atanh}(\sqrt{3+2x}) - 12717/25*\text{atanh}(\sqrt{3/5}\sqrt{3+2x})*\sqrt{3/5} + 2667/25/\sqrt{3+2x} - 3/10*(37+47x)/((2+5x+3x^2)^2\sqrt{3+2x}) + 1/10*(1888+2229x)/((2+5x+3x^2)*\sqrt{3+2x})
\]
\[
(450x + 1500x + 1850x + 1000x + 200)\sqrt{\frac{2x + 3}{\sqrt{2x + 3}}}
\]

Type: Expression(Integer)

\[
\frac{(5-x)}{(3+2x)^{5/2}(2+5x+3x^2)^3}
\]

Type: Expression(Integer)

\[
\frac{-x + 5}{8 + 7 + 6 + 5 + 4 + 3 + 2}
\]

\[
(108x + 864x + 5783x + 6915x + 2426x + 636x + 72)\sqrt{\frac{2x + 3}{\sqrt{2x + 3}}}
\]

Type: Expression(Integer)

\[
\frac{4185000x + 20227500x + 38130000x + 35107500x + 15810000x}{50*9146*10551\sqrt{3+2x}^2*(3/2)*(2+5x+3x^2)^2*310*atanh(\sqrt{3+2x})-45603/125*atanh(\sqrt{3/5})*sqrt(3/5)*}\]

\[
6853/125*sqrt(3+2x)
\]

\[
\frac{4925124x - 23804766x - 44873352x - 41316318x - 18606024x - 3283416}{2790000}
\]
d0:=normalize(t0-D(r0,x))

)clear all

t0:=(5-x)/((3+2*x)^(7/2)*(2+5*x+3*x^2)^3)

r0:=56399/625/(3+2*x)^(5/2)+102697/1875/(3+2*x)^(3/2)-3/10*(37+47*x)/((3+2*x)^(5/2)*(2+5*x+3*x^2)^2)+1/50*(8852+9957*x)/((3+2*x)^(5/2)*(2+5*x+3*x^2))+266*atanh(sqrt(3+2*x))-806841/3125*atanh(sqrt(3/5)*sqrt(3+2*x))*sqrt(3/5)+(-24409/3125)/sqrt(3+2*x)
(2) 179550000x + 1137150000x + 2937637500x + 3960075000x 2
2937637500x + 1137150000x + 179550000 
*  
\|5 \|2x + 3 atanh(\|2x + 3 )  
+  
6 5 4 3
- 174277656x - 1103758488x - 2851376094x - 3843790524x 
+  
2
- 2851376094x - 1103758488x - 174277656 
*  
\|5 \|2x + 3 atanh(\|3 \|2x + 3 )  
+  
\|3 \|2x + 3 atanh(\|3 \|2x + 3 )  
+  
\|5  
6 5 4 3
- 5272344x - 14906052x + 18312714x + 114099329x + 160041829x 
+  
94082723x + 20250051 
*  
\|5  
/  
\|5
6 5 4 3
- 675000x + 4275000x + 11043750x + 14887500x + 11043750x + 4275000x 
+  
675000 
*  
\|5 \|2x + 3
Type: Expression(Integer)
710
711 of 1035

d0:=normalize(t0-D(r0,x))

(3) 0
Type: Expression(Integer)
711

)clear all
\[ t_0 := \frac{5 + 10x + \sqrt{35}}{(2 + 3x + 5x^2) \sqrt{1 + 2x}} \]

\[ r_0 := -2 \text{atan} \left( \frac{-\sqrt{10 + 20x} + \sqrt{2 + \sqrt{35}}}{\sqrt{-2 + \sqrt{35}}} \right) \sqrt{\frac{10}{-2 + \sqrt{35}}} + 2 \text{atan} \left( \frac{\sqrt{10 + 20x} + \sqrt{2 + \sqrt{35}}}{\sqrt{-2 + \sqrt{35}}} \right) \sqrt{\frac{10}{-2 + \sqrt{35}}} \]

\[ -2 \text{atan} \left( \frac{-10 \sqrt{1 + 2x} + \sqrt{10 \left(2 + \sqrt{35}\right)}}{\sqrt{10 \left(-2 + \sqrt{35}\right)}} \right) \sqrt{\frac{10}{-2 + \sqrt{35}}} + 2 \text{atan} \left( \frac{10 \sqrt{1 + 2x} + \sqrt{10 \left(2 + \sqrt{35}\right)}}{\sqrt{10 \left(-2 + \sqrt{35}\right)}} \right) \sqrt{\frac{10}{-2 + \sqrt{35}}} \]
\[\begin{align*}
\text{ Type: Tuple(Expression(Integer))} \\
E 713
\end{align*}\]

\[\begin{align*}
\text{ Type: Expression(Integer)} \\
E 714
\end{align*}\]

\[\begin{align*}
\text{ Type: Expression(Integer)} \\
E 715
\end{align*}\]

\[\begin{align*}
\text{ Type: Expression(Integer)} \\
E 715
\end{align*}\]

\[\begin{align*}
\text{ Type: Expression(Integer)} \\
E 716
\end{align*}\]
(2+5\times x+3\times x^2)^{(3/2)}+12130/6237\times (2+5\times x+3\times x^2)^{(3/2)}\times \text{sqrt}(3+2\times x)-
32567/48114\times \text{elliptic}_e(\arcsin(\sqrt(3+2\times x)),3/5)\times \sqrt(-2-3\times x)+
3/5\times \sqrt(5)\times \text{elliptic}_f(\arcsin(\sqrt(3+2\times x)),-
1/56133\times (250447+280359\times x)\times \sqrt(3+2\times x)\times \sqrt(2+5\times x+3\times x^2))

\text{clear all}

t0:=(5-x)\times (3+2\times x)^{(3/2)}\times \text{sqrt}(2+5\times x+3\times x^2)

r0:=-2/27\times (3+2\times x)^{(3/2)}\times (2+5\times x+3\times x^2)^{(3/2)}\times (3/2)+202/189\times (2+5\times x+3\times x^2)^{(3/2)}_-
sqrt(3+2\times x)+4729/1458\times \text{elliptic}_e(\arcsin(\sqrt(3+2\times x)),3/5)\times \sqrt(-2-3\times x)-
elliptic_f(\arcsin(\sqrt(3+2\times x)),3/5)\times \sqrt(-2-3\times x)\times \sqrt(-1-x)/(\sqrt(5)\times 
\sqrt(2+5\times x+3\times x^2)+1/8505\times (27914+30033\times x)\times \sqrt(3+2\times x)\times \sqrt(2+5\times x+3\times x^2))
\[
\frac{881/567 \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{(\sqrt{5} \cdot \sqrt{2+5x+3x^2})} + \frac{1}{945} \cdot (2327+2169x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2} = 722
\]

\[
\frac{d_0 := \text{D}(m_0, x)}{}
\]

)clear all

\[
\text{t0} := (5-x) \cdot \frac{\sqrt{2+5x+3x^2}}{\sqrt{3+2x}}
\]

\[
\begin{align*}
&+ \quad \frac{2}{3x + 5x + 2} \\
&\quad \frac{1}{2x + 3} \\
&\text{Type: Expression(Integer)}
\end{align*}
\]

\[
\text{r0} := \frac{761/54 \cdot \text{elliptic}_e(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{(\sqrt{5} \cdot \sqrt{2+5x+3x^2})} - \frac{94/27 \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{(\sqrt{5} \cdot \sqrt{2+5x+3x^2})} + \frac{1}{45} \cdot (88-9x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2} = 725
\]

\[
\text{d0} := \text{D}(m_0, x)
\]

)clear all

\[
\text{t0} := (5-x) \cdot \frac{\sqrt{2+5x+3x^2}}{(3+2x)^{3/2}}
\]

\[
\begin{align*}
&+ \quad \frac{2}{3x + 5x + 2} \\
&\quad \frac{1}{2x + 3} \\
&\text{Type: Expression(Integer)}
\end{align*}
\]

\[
\text{r0} := \frac{761/54 \cdot \text{elliptic}_e(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{(\sqrt{5} \cdot \sqrt{2+5x+3x^2})} - \frac{94/27 \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{(\sqrt{5} \cdot \sqrt{2+5x+3x^2})} + \frac{1}{45} \cdot (88-9x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2} = 726
\]

\[
\text{d0} := \text{D}(m_0, x)
\]

)clear all

\[
\text{t0} := (5-x) \cdot \frac{\sqrt{2+5x+3x^2}}{(3+2x)^{3/2}}/(3+2x)^{(3/2)}
\]

\[
\begin{align*}
&+ \quad \frac{2}{3x + 5x + 2} \\
&\quad \frac{1}{2x + 3} \\
&\text{Type: Expression(Integer)}
\end{align*}
\]
```plaintext
--- S 728 of 1035
r0 := 61/9 * elliptic_f(asin(sqrt(3 + 2*x)), 3/5) * sqrt(-2 - 3*x) * sqrt(-1 - x) / (sqrt(5) * sqrt(2 + 5*x + 3*x^2)) - 121/18 * elliptic_e(asin(sqrt(3 + 2*x)), 3/5) * sqrt(-2 - 3*x) * sqrt(-1 - x) / sqrt(2 + 5*x + 3*x^2) - 1/3 * (21 + x) * sqrt(2 + 5*x + 3*x^2) / sqrt(3 + 2*x)
--- E 728

--- S 729 of 1035
d0 := D(m0, x)
--- E 729

) clear all

--- S 730 of 1035
t0 := (5 - x) * sqrt(2 + 5*x + 3*x^2) / (3 + 2*x)^(5/2)
--- R
--- R
--- R +------------+
--- R | 2
--- R (- x + 5)\|3x + 5x + 2
--- R (1) ------------------------
--- R 2 +-------+
--- R (4x + 12x + 9)\|2x + 3
--- R Type: Expression(Integer)
--- E 730

--- S 731 of 1035
r0 := 67/6 * elliptic_e(asin(sqrt(3 + 2*x)), 3/5) * sqrt(-2 - 3*x) * sqrt(-1 - x) / (sqrt(5) * sqrt(2 + 5*x + 3*x^2)) - 8/3 * elliptic_f(asin(sqrt(3 + 2*x)), 3/5) * sqrt(-2 - 3*x) * sqrt(-1 - x) / (sqrt(5) * sqrt(2 + 5*x + 3*x^2)) - 1/3 * (11 + 3*x) * sqrt(2 + 5*x + 3*x^2) / (3 + 2*x)^(3/2) + 67/15 * sqrt(2 + 5*x + 3*x^2) / sqrt(3 + 2*x)
--- E 731

--- S 732 of 1035
d0 := D(m0, x)
--- E 732

) clear all

--- S 733 of 1035
t0 := (5 - x) * sqrt(2 + 5*x + 3*x^2) / (3 + 2*x)^(7/2)
--- R
--- R
--- R +------------+
--- R | 2
--- R (- x + 5)\|3x + 5x + 2
--- R (1) --------------------------------
--- R 3 2 +------+
--- R (8x + 36x + 54x + 27)\|2x + 3
--- R Type: Expression(Integer)
```
\begin{align*}
\ell_0 &= 49/50 \cdot \text{elliptic}_e(\arcsin(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \\
& \quad (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) - 11/25 \cdot \text{elliptic}_f(\arcsin(\sqrt{3+2x}), 3/5) \cdot \\
& \quad \sqrt{-2-3x} \cdot \sqrt{-1-x} / (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) + 9/25 \cdot \\
& \quad \sqrt{2+5x+3x^2} / (3+2x)^{3/2} + 1/5 \cdot (1+5x) \cdot \sqrt{2+5x+3x^2} / \\
& \quad (3+2x)^{5/2} + 49/125 \cdot \sqrt{2+5x+3x^2} / \sqrt{3+2x}.
\end{align*}

\text{clear all}

\begin{align*}
\ell_0 &= \text{D}(m_0, x) \\
\text{clear all}
\end{align*}

\begin{align*}
\ell_0 &= 2086/1989 \cdot (3+2x)^{(3/2)} \cdot (2+5x+3x^2)^{(5/2)} + 42/85 \cdot (3+2x)^{(5/2)} + \\
& \quad 1/196911 \cdot (591064+699377x) \cdot (2+5x+3x^2)^{(3/2)} \cdot \sqrt{3+2x} + \\
& \quad 108934/65637 \cdot (2+5x+3x^2)^{(5/2)} \cdot \sqrt{3+2x} - 2200387/21266388 \cdot \\
& \quad \text{elliptic}_e(\arcsin(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \\
& \quad (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) - 1284593/10633194 \cdot \text{elliptic}_f(\arcsin(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \\
& \quad (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) - \\
& \quad 1/17721990 \cdot (666831+8076357x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2}.
\end{align*}

\text{clear all}

\begin{align*}
\ell_0 &= (5-x) \cdot (3+2x)^{(5/2)} \cdot (2+5x+3x^2)^{(3/2)}.
\end{align*}
r0 := 202/351*(3+2*x)^(3/2)*(2+5*x+3*x^2)^(5/2) - 2/45*(3+2*x)^(5/2)*sqrt(3+2*x) + 1/243243*(534271+629153*x)*sqrt(3+2*x) + 13318/11583*(2+5*x+3*x^2)^(5/2)*sqrt(3+2*x) + 207851/3752892*elliptic_e(asin(sqrt(3+2*x)), 3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2)) + 397651/6567561*elliptic_f(asin(sqrt(3+2*x)), 3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2)) - 1/21891870*(6006884+7817373*x)*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)

d0 := D(m0, x)

t0 := (5-x)*(3+2*x)^(3/2)*(2+5*x+3*x^2)^(3/2)

r0 := -2/39*(3+2*x)^(3/2)*(2+5*x+3*x^2)^(5/2) + 1/27027*(43822+50771*x)*sqrt(3+2*x) + 886/1287*(2+5*x+3*x^2)^(5/2)*sqrt(3+2*x) + 35611/1459458*elliptic_e(asin(sqrt(3+2*x)), 3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2)) - 346863*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)

d0 := D(m0, x)
\( t_0 := (5-x)^{(2+5x+3x^2)^2} / \sqrt{3+2x} \)
\texttt{clear all}

\texttt{--S 751 of 1035}
\texttt{t0:=(5-x)*(2+5*x+3*x^2)^{3/2}/(3+2*x)^{5/2}}
\texttt{--R}
\texttt{--R}
\texttt{--R +------------+}
\texttt{--R 3 2 | 2}
\texttt{--R (- 3x + 10x + 23x + 10)\|3x + 5x + 2}
\texttt{--R (1) ------------------------}
\texttt{--R +--------+}
\texttt{--R (2x + 3)\|2x + 3}
\texttt{--R Type: Expression(Integer)}
\texttt{--E 751}

\texttt{--S 752 of 1035}
\texttt{r0:=-1/7*(47+x)*(2+5*x+3*x^2)^{3/2}/sqrt(3+2*x)-2411/36*}
\texttt{-- elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/}
\texttt{-- (sqrt(5)*sqrt(2+5*x+3*x^2)))+899/63*elliptic_f(asin(sqrt(3+2*x)),3/5)*}
\texttt{-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2)))-}
\texttt{-- 1/210*(136-2493*x)*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)}
\texttt{--E 752}

\texttt{--S 753 of 1035}
\texttt{d0:=D(m0,x)}
\texttt{--E 753}

\texttt{--S 754 of 1035}
\texttt{t0:=(5-x)*(2+5*x+3*x^2)^{3/2}/(3+2*x)^{(5/2)}}
\texttt{--R}
\texttt{--R}
\texttt{--R +------------+}
\texttt{--R 3 2 | 2}
\texttt{--R (- 3x + 10x + 23x + 10)\|3x + 5x + 2}
\texttt{--R (1) ------------------------}
\texttt{--R +--------+}
\texttt{--R (4x + 12x + 9)\|2x + 3}
\texttt{--R Type: Expression(Integer)}
\texttt{--E 754}

\texttt{--S 755 of 1035}
\texttt{r0:=-1/15*(37+3*x)*(2+5*x+3*x^2)^{3/2}/(3+2*x)^{3/2)}+367/4*}
\texttt{-- elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/}
\texttt{-- (sqrt(5)*sqrt(2+5*x+3*x^2)))-39/2*elliptic_f(asin(sqrt(3+2*x)),3/5)*}
\texttt{-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2)))+1/10*(241+69*x)*}
\texttt{-- sqrt(2+5*x+3*x^2)/sqrt(3+2*x)}
\texttt{--E 755}
\[ t_0 := (5-x)(3+2x)^{9/2}(2+5x+3x^2)^{5/2} \]
\[ r_0 := \frac{1}{15}(27+5x)(3+2x)^{3/2}(3+2x)^{3/2}(5/2) - 2779/60* \text{elliptic}_e(\text{asin} (\sqrt{3+2x}), 3/5)* \sqrt{-2-3x}\sqrt{-1-x}/(\sqrt{5}\sqrt{2+5x+3x^2}) + 148/15* \text{elliptic}_f(\text{asin} (\sqrt{3+2x}), 3/5)* \sqrt{-2-3x}\sqrt{-1-x}/(\sqrt{5}\sqrt{2+5x+3x^2}) + 1/30*(707+411x) \sqrt{2+5x+3x^2}/(3+2x)^{3/2} - 2779/150* \sqrt{2+5x+3x^2}/\sqrt{3+2x} \]

\[ t_0 := (5-x)(2+5x+3x^2)^{3/2}/(3+2x)^{7/2} \]
\[ d_0 := D(m_0, x) \]

\[ (5-x)(2+5x+3x^2)^{3/2}/(3+2x)^{7/2} \]
\[ (3+2x)^{9/2}(2+5x+3x^2)^{5/2} \]

\[ \text{Type: Expression(Integer)} \]
\[ r_0 := \frac{222422}{200583} \cdot (3+2x)^{3/2} \cdot (2+5x+3x^2)^{7/2} + \frac{25418}{35397} \cdot (3+2x)^{5/2} \cdot (2+5x+3x^2)^{7/2} + \frac{1538}{4347} \cdot (3+2x)^{7/2} \cdot (2+5x+3x^2)^{7/2} - \frac{2}{69} \cdot (3+2x)^{9/2} \cdot (2+5x+3x^2)^{7/2} - \frac{5}{108785754} \cdot (4498331+5420233x) \cdot (2+5x+3x^2)^{3/2} \cdot \sqrt{3+2x} + \frac{1}{2590137} \cdot (5130052+6113283x) \cdot (2+5x+3x^2)^{5/2} \cdot \sqrt{3+2x} + \frac{89294}{78489} \cdot (2+5x+3x^2)^{7/2} \cdot \sqrt{3+2x} + \frac{18269789}{1678408776} \cdot \mbox{elliptic}_e(\sin(\sqrt{3+2x}),3/5) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{2+5x+3x^2} - \frac{10791761}{2937215358} \cdot \mbox{elliptic}_f(\sin(\sqrt{3+2x}),3/5) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{2+5x+3x^2} + \frac{1}{1958143572} \cdot (51436624+44779653x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2} \]

\[ E \ 761 \]

\[ \]

\[ E \ 762 \]

\[ )\text{clear all} \]

\[ t_0 := (5-x) \cdot (3+2x)^{7/2} \cdot (2+5x+3x^2)^{5/2} \]

\[ (1) \]

\[ 8 \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \]

\[ -72x - 204x + 958x + 5955x + 13215x + 15577x + 10359x + 3672x \]

\[ 540 \]

\[ \]

\[ \]

\[ \]

\[ \]

\[ Type: \ \mbox{Expression(Integer)} \]

\[ E \ 763 \]

\[ E \ 764 \]

\[ r_0 := \frac{2218}{2907} \cdot (3+2x)^{3/2} \cdot (2+5x+3x^2)^{7/2} + \frac{202}{513} \cdot (3+2x)^{5/2} \cdot (2+5x+3x^2)^{7/2} - \frac{2}{63} \cdot (3+2x)^{7/2} \cdot (2+5x+3x^2)^{7/2} - \frac{5}{12590137} \cdot (5130052+6113283x) \cdot (2+5x+3x^2)^{3/2} \cdot \sqrt{3+2x} + \frac{1}{2937215358} \cdot (51436624+44779653x) \cdot (2+5x+3x^2)^{5/2} \cdot \sqrt{3+2x} + \frac{89294}{78489} \cdot (2+5x+3x^2)^{7/2} \cdot \sqrt{3+2x} + \frac{18269789}{1678408776} \cdot \mbox{elliptic}_e(\sin(\sqrt{3+2x}),3/5) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{2+5x+3x^2} - \frac{10791761}{2937215358} \cdot \mbox{elliptic}_f(\sin(\sqrt{3+2x}),3/5) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{2+5x+3x^2} + \frac{1}{1958143572} \cdot (51436624+44779653x) \cdot \sqrt{3+2x} \cdot \sqrt{2+5x+3x^2} \]

\[ E \ 764 \]

\[ E \ 765 \]
-\text{clear all}

-\text{\textbackslash S 766 of 1035}
t_0:= (5-x) \cdot (3+2x)^{(3/2)} \cdot (2+5x+3x^2)^{(5/2)}

\text{\textbackslash R}
\text{\textbackslash R}
\text{\textbackslash R} \ (1)
\text{\textbackslash R}
\text{\textbackslash R} \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \ +-------+
\text{\textbackslash R} \ (- 36x - 48x + 551x + 2151x + 3381x + 2717x + 1104x + 180) \ \text{\textbackslash l}\ 2x + 3
\text{\textbackslash R} \ *
\text{\textbackslash R} \ +------------------+
\text{\textbackslash R} \ \text{\textbackslash l} 2
\text{\textbackslash R} \ \text{\textbackslash l} 3x + 5x + 2
\text{\textbackslash R} \ Type: Expression(\text{Integer})

-\text{\textbackslash S 767 of 1035}
r_0:= 430/969 \cdot (3+2x)^{(3/2)} \cdot (2+5x+3x^2)^{(7/2)} - 2/57 \cdot (3+2x)^{(5/2)} \cdot (2+5x+3x^2)^{(7/2)} - 125/52378326 \cdot (64006+79583x) \cdot (2+5x+3x^2)^{(3/2)} \cdot \sqrt{3+2x} + 25/1247103 \cdot (72737+86493x) \cdot (2+5x+3x^2)^{(5/2)} \cdot \sqrt{3+2x} + 2350/2907 \cdot (2+5x+3x^2)^{(7/2)} \cdot \sqrt{3+2x} + 16503475/808122744 \cdot \text{elliptic\_e(asin(\text{sqrt}(3+2x)),3/5)} \cdot \text{sqrt}(5) \cdot \text{sqrt}(2+5x+3x^2) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} \ \text{\textbackslash l}\ 2+5x+3x^2)

-\text{\textbackslash E 767}

-\text{\textbackslash S 768 of 1035}
\text{\textbackslash d0:=D(m0,x)}

\text{\textbackslash E 768}

\text{\textbackslash \textbackslash S 769 of 1035}
t_0:= (5-x) \cdot (3+2x)^{(3/2)} \cdot (2+5x+3x^2)^{(5/2)}

\text{\textbackslash R}
\text{\textbackslash R}
\text{\textbackslash R} \ (1)
\text{\textbackslash R}
\text{\textbackslash R} \ 6 \ 5 \ 4 \ 3 \ 2 \ +-------+
\text{\textbackslash R} \ (- 18x + 3x + 271x + 669x + 687x + 328x + 60) \ \text{\textbackslash l}\ 2x + 3 \ \text{\textbackslash l} 3x + 5x + 2
\text{\textbackslash R} \ Type: Expression(\text{Integer})

-\text{\textbackslash E 769}

-\text{\textbackslash S 770 of 1035}
r_0:= -2/51 \cdot (3+2x)^{(3/2)} \cdot (2+5x+3x^2)^{(7/2)} - 1/8270262 \cdot (949997+1332121x) \_
\[ (2+5x^3x^2)\sqrt{3+2x} + \frac{1}{984555}(1063774+1253571x)(2+5x+3x^2)^{3/2}\sqrt{3+2x} + \frac{1166}{2295}(2+5x+3x^2)^{5/2}\sqrt{3+2x} + \frac{34355693}{127598328}\text{elliptic}_e(\text{asin}(\sqrt{3+2x}),\frac{3}{5})\sqrt{-2-3x}\sqrt{-1-x}/(\sqrt{5}\sqrt{2+5x+3x^2}) - \frac{6809266}{111648537}\text{elliptic}_f(\text{asin}(\sqrt{3+2x}),\frac{3}{5})\sqrt{-2-3x}\sqrt{-1-x}/(\sqrt{5}\sqrt{2+5x+3x^2}) + \frac{1}{744323580}(12174838-22593339x)\sqrt{3+2x}\sqrt{2+5x+3x^2} \]

\[
\text{d0}:=D(m0,x)\]

\[
\text{t0}:=\frac{(5-x)(2+5x+3x^2)^{3/2}\sqrt{3+2x} + \frac{1}{19305}(15076+34643x)(2+5x+3x^2)^{3/2}\sqrt{3+2x}}{(5/2)\sqrt{3+2x}} \]

\[
\text{r0}:=\frac{-1/162162(15076+34643x)(2+5x+3x^2)^{3/2}\sqrt{3+2x} + \frac{1}{19305}(15076+34643x)(2+5x+3x^2)^{3/2}\sqrt{3+2x}}{(5/2)\sqrt{3+2x}} \]

\[
\text{d0}:=D(m0,x)\]

\[
\text{t0}:=\frac{(5-x)(2+5x+3x^2)^{3/2}\sqrt{3+2x}}{(5/2)\sqrt{3+2x}} \]
\[2x + 3\]

Type: Expression(Integer)

---

--S 776 of 1035
--r0:=-5/18018*(563+4669*x)*(2+5*x+3*x^2)^3/2*sqrt(3+2*x)+
-- 1/429*(224-33*x)*(2+5*x+3*x^2)^5/2*sqrt(3+2*x)+651617/277992*
-- elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(5)*sqrt(-2-3*x)*
-- sqrt(-1-x)/sqrt(2+5*x+3*x^2)+
-- 3/5*sqrt(5)*sqrt(-2-3*x)*sqrt(-1-x)/sqrt(2+5*x+3*x^2)+
-- 1/324324*(34372-676791*x)*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)+

---

--S 776 of 1035
--d0:=D(m0,x)
--E 777

}clear all

---

--S 778 of 1035
--t0:=(5-x)*(2+5*x+3*x^2)^5/2/(3+2*x)^3/2

---

---

--S 779 of 1035
--r0:=-1/11*(73+x)*(2+5*x+3*x^2)^5/2/(5/2)/(3+2*x)^3/2

---

---

--S 779 of 1035
--d0:=D(m0,x)
--E 778

}clear all

---

--S 780 of 1035
--d0:=D(m0,x)
--E 780

---

325
\[\begin{align*}
\text{Type: Expression(Integer)}
\end{align*}\]
\begin{align*}
t_0 & := \frac{(A+Bx)(d+e x)^{(1/2)}}{(a+b x+c x^2)^{(1/2)}} \\
& \text{Type: Expression(Integer)}
\end{align*}
\begin{align*}
\text{r0} & := -\text{elliptic}_f(\text{asin}(\sqrt{2}\sqrt{c}\sqrt{d+e*x}/\sqrt{2*c*d-e*(b-\sqrt{b^2-4*a*c})} ),\quad (2*c*d-e*(b+\sqrt{b^2-4*a*c}))/\sqrt{2*c*d-e*(b-sqrt(b^2-4*a*c))})
\quad (*2*c*d-e*(b-sqrt(b^2-4*a*c))\\
\text{elliptic}_e(\text{asin}(\sqrt{2}\sqrt{c}\sqrt{d+e*x}/\sqrt{2*c*d-e*(b+\sqrt{b^2-4*a*c})} ),\quad (2*c*d-e*(b+\sqrt{b^2-4*a*c}))/\sqrt{2*c*d-e*(b-sqrt(b^2-4*a*c))})
\quad (*2*c*d-e*(b-sqrt(b^2-4*a*c)))
\end{align*}

\begin{align*}
\text{d0} & := \text{D}(m0,x) \\
\text{clear all} \\
\text{t0} & := (A+B*x)/(d+e*x)/(a+b*x+c*x^2)^{(1/2)} \\
\text{E 793} \\
\end{align*}

\begin{align*}
\text{r0} & := 2*(B*d-A*e)*\sqrt{a+b*x+c*x^2}/((c*d^2-b*d*e+a*e^2)*\sqrt{d+e*x}) \\
\text{elliptic}_f(\text{asin}(\sqrt{2}\sqrt{c}\sqrt{d+e*x}/\sqrt{2*c*d-e*(b-\sqrt{b^2-4*a*c})} ),\quad (2*c*d-e*(b+\sqrt{b^2-4*a*c}))/\sqrt{2*c*d-e*(b-sqrt(b^2-4*a*c))})
\quad (*2*c*d-e*(b-sqrt(b^2-4*a*c)))
\end{align*}

\begin{align*}
\text{E 793} \\
\text{E 794} \\
\text{E 795} \\
\text{E 796} \\

328
\[ t_0 := (A + B \cdot x) \cdot (d + e \cdot x)^{(3/2)}/(a + b \cdot x + c \cdot x^2)^{(3/2)} \]

\[ d_0 := D(m_0, x) \]

\[ t_0 := (A + B \cdot x) \cdot (d + e \cdot x)^{(1/2)}/(a + b \cdot x + c \cdot x^2)^{(3/2)} \]
\begin{verbatim}
--R
--R +--------+
--R (B x + A)\(|e x + d\)
--R (1) ---------------------------------
--R +--------+
--R 2 | 2
--R (c x + b x + a)\(|c x + b x + a\)
--R Type: Expression(Integer)
--E 799

--S 800 of 1035
--r0:= 2(A*b-2*a*B-(b*B-2*A*c)*x)*sqrt(d+e*x)/((b^2-4*a*c)*\(\sqrt{2}\)*sqrt(c)*sqrt(d+e*x)/sqrt(2*c*d-b*e+e*sqrt(b^2-4*a*c)))+
-- sqrt(a+b*x+c*x^2)+elliptic(f(asin(sqrt(2)*sqrt(c)*sqrt(d+e*x)/sqrt(2*c*d-b*e+e*sqrt(b^2-4*a*c))),2*c*d-e*(b+sqrt(b^2-4*a*c)))\(\sqrt{2}\)*sqrt(-e*(b+2*c*x-sqrt(b^2-4*a*c))/(2*c*d-b*e+e*sqrt(b^2-4*a*c)))/(c^(3/2)*(b^2-4*a*c)*e*sqrt(2)*sqrt(a+b*x+c*x^2)))+(b*B-2*A*c)*
-- elliptic_e(asin(sqrt(2)*sqrt(c)*sqrt(d+e*x)/sqrt(2*c*d-b*e+e*sqrt(b^2-4*a*c))),2*c*d-e*(b+sqrt(b^2-4*a*c)))/(2*c*d-e*(b-sqrt(b^2-4*a*c)))+
-- sqrt(2*c*d-e*(b+sqrt(b^2-4*a*c)))/(c^(3/2)*(b^2-4*a*c)*e*sqrt(2)*sqrt(a+b*x+c*x^2))
--E 800

--S 801 of 1035
--d0:=D(m0,x)
--E 801

)clear all

--S 802 of 1035
t0:=(A+B*x)/((d+e*x)^(1/2)*(a+b*x+c*x^2)^(3/2))
--R
--R (1) -------------------------------------------
--R +--------------+
--R 2 +-------+ | 2
--R (c x + b x + a)\(\mid c x + b x + a\)
--R Type: Expression(Integer)
--E 802

--S 803 of 1035
--r0:=2*(a*e^2*(2*c*d-b*e)-A*(b*c*d-b^2*e+2*a*c*e)+c*(b*B+d-2*A*c+d+A*b*e-)
-- 2*a*e^2)*sqrt(d+e*x)/((b^2-4*a*c)*(c*d^2-b*d*e+a*e^2))*
-- sqrt(a+b*x+c*x^2))=elliptic(f(asin(sqrt(2)*sqrt(c)*sqrt(d+e*x))/

330
\end{verbatim}
\[
\sqrt{2cd-e(b-sqrt(b^2-4ac))}, (2cd-e*(b-sqrt(b^2-4ac)))/\sqrt{(2cd-e*(b+sqrt(b^2-4ac)))}
\]

\[
E 803
\]

\[
d0:=D(m0,x)
\]

\[
E 804
\]

\[
\text{clear all}
\]

\[
E 804
\]

\[
t0:=(5-x)*(3+2x)^(5/2)/(2+5x+3x^2)^(1/2)
\]

\[
E 805
\]

\[
r0:=-865/81*elliptic_e(asin(sqrt(3+2x)),3/5)*sqrt(5)*sqrt(-2-3x)*sqrt(-1-x)/sqrt(2+5x+3x^2)+4540/567*elliptic_f(asin(sqrt(3+2x)),3/5)*sqrt(5)*sqrt(-2-3x)*sqrt(-1-x)/sqrt(2+5x+3x^2)+10/7*(3+2x)^(3/2)*sqrt(2+5x+3x^2)-2/21*(3+2x)^(5/2)*sqrt(2+5x+3x^2)+1010/189*sqrt(3+2x)*sqrt(2+5x+3x^2)
\]

\[
E 806
\]

\[
\text{clear all}
\]

\[
E 807
\]
t0:=(5-x)*(3+2*x)^(3/2)/(2+5*x+3*x^2)^(1/2)
--R
--R
--R +------+
--R (- 2x + 7x + 15)|2x + 3
--R (1) --------------------------
--R +------------+
--R | 2
--R \3x + 5x + 2
--R Type: Expression(Integer)
--E 808

--S 809 of 1035
--r0:=-2743/81*elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/
-- (sqrt(5)*sqrt(2+5*x+3*x^2))+2254/81*elliptic_f(asin(sqrt(3+2*x)),3/5)*
-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-2/15*(3+2*x)^(3/2)*
-- sqrt(2+5*x+3*x^2)+326/135*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)
--E 809

--S 810 of 1035
--d0:=D(m0,x)
--E 810

);clear all

--S 811 of 1035
t0:=(5-x)*(3+2*x)^(1/2)/(2+5*x+3*x^2)^(1/2)
--R
--R
--R +------+
--R (- x + 5)|2x + 3
--R (1) ------------------
--R +------------+
--R | 2
--R \3x + 5x + 2
--R Type: Expression(Integer)
--E 811

--S 812 of 1035
--r0:=-101/27*elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/
-- (sqrt(5)*sqrt(2+5*x+3*x^2))+104/27*elliptic_f(asin(sqrt(3+2*x)),3/5)*
-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-2/9*sqrt(3+2*x)*
-- sqrt(2+5*x+3*x^2)
--E 812

--S 813 of 1035
--d0:=D(m0,x)
--E 813

);clear all
\[ t_0 := \frac{5-x}{(3+2x)^{3/2}(2+5x+3x^2)^{1/2}} \]

\[ r_0 := \frac{34/3 \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{\sqrt{5} \cdot \sqrt{2+5x+3x^2}} + \frac{1/3 \cdot \text{elliptic}_e(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x}}{\sqrt{2+5x+3x^2}} \]

\[ d_0 := D(m_0, x) \]

\[ t_0 := \frac{5-x}{(3+2x)^{3/2}(2+5x+3x^2)^{1/2}} \]

\[ r_0 := -13 \cdot \text{elliptic}_e(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{5} \cdot \sqrt{2+5x+3x^2} + 12 \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}), 3/5) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / \sqrt{5} \cdot \sqrt{2+5x+3x^2} - 26/5 \cdot \sqrt{2+5x+3x^2} / \sqrt{3+2x} \]

\[ d_0 := D(m_0, x) \]

\( ) \text{clear all} \)
\[ t_0 := \frac{(5-x)}{((3+2x)^{7/2} \cdot (2+5x+3x^2)^{1/2})} \]

\[ r_0 := \frac{-193}{15} \cdot \text{elliptic\_e}(\text{asin}(\sqrt{3+2x}), \frac{3}{5}) \cdot \text{elliptic\_e}(\frac{-2-3x}{\sqrt{5}}) \cdot \sqrt{-1-x} / (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) + \frac{154}{15} \cdot \text{elliptic\_f}(\text{asin}(\sqrt{3+2x}), \frac{3}{5}) \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} / (\sqrt{5} \cdot \sqrt{2+5x+3x^2}) - \frac{26}{15} \cdot \sqrt{2+5x+3x^2} / (3+2x)^{3/2} - \frac{386}{75} \cdot \sqrt{2+5x+3x^2} / \sqrt{3+2x} \]

\[ d_0 := D(m_0, x) \]

\)clear all\)
\[ t_0 := \frac{(5-x)(3+2x)^{\frac{5}{2}}}{(2+5x+3x^2)^{\frac{3}{2}}} \]

\[ \frac{4}{29} \]

\[ \left( \frac{-8x + 4x + 126x + 243x + 135}{2x + 3} \right) \]

\[ \frac{2}{3x + 5x + 2} \]

\[ \text{Type: Expression(Integer)} \]

\[ r_0 := -2 \cdot \frac{(3+2x)^{\frac{5}{2}}}{(2+5x+3x^2)^{\frac{3}{2}}} - \frac{3830}{81} \cdot \text{elliptic}_e(\text{asin}(\sqrt{3+2x}),\frac{3}{5}) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} \cdot \sqrt{2+5x+3x^2} + \frac{1340}{81} \cdot \text{elliptic}_f(\text{asin}(\sqrt{3+2x}),\frac{3}{5}) \cdot \sqrt{5} \cdot \sqrt{-2-3x} \cdot \sqrt{-1-x} \cdot \sqrt{2+5x+3x^2} + \frac{140}{3} (3+2x)^{\frac{3}{2}} \cdot \sqrt{2+5x+3x^2} + \frac{1660}{27} (3+2x) \cdot \sqrt{2+5x+3x^2} \]

\[ \text{Type: Expression(Integer)} \]
\[ t_0 := \frac{(5-x)\sqrt{(3 + 2x)}}{(2 + 5x + 3x^2)} \]

Type: Expression(Integer)

\[ r_0 := -2(3 + 2x)\sqrt{(2 + 5x + 3x^2)} - 274/9 \cdot \text{elliptic_e} \left( \text{asin} \left( \sqrt{3 + 2x} \right) \right) \cdot \sqrt{5} \cdot \sqrt{-2 - 3x} \cdot \sqrt{-1 - x} / \sqrt{2 + 5x + 3x^2} + 64/9 \cdot \text{elliptic_f} \left( \text{asin} \left( \sqrt{3 + 2x} \right) \right) \cdot \sqrt{5} \cdot \sqrt{-2 - 3x} \cdot \sqrt{-1 - x} / \sqrt{2 + 5x + 3x^2} + 140/3 \cdot \sqrt{3 + 2x} \cdot \sqrt{2 + 5x + 3x^2} \]

Type: Expression(Integer)

\[ r_0 := \frac{68}{3} \cdot \text{elliptic_f} \left( \text{asin} \left( \sqrt{3 + 2x} \right) \right) \cdot \sqrt{-2 - 3x} \cdot \sqrt{-1 - x} / \sqrt{5} \cdot \sqrt{2 + 5x + 3x^2} - 70/3 \cdot \text{elliptic_e} \left( \text{asin} \left( \sqrt{3 + 2x} \right) \right) \cdot \sqrt{5} \cdot \sqrt{-2 - 3x} \cdot \sqrt{-1 - x} / \sqrt{2 + 5x + 3x^2} + 140/3 \cdot \sqrt{3 + 2x} \cdot \sqrt{2 + 5x + 3x^2} \]

Type: Expression(Integer)
\[\sqrt{5} \sqrt{-2-3x} \sqrt{-1-x}/\sqrt{2+5x+3x^2} - 2(29+35x)\sqrt{3+2x}/\sqrt{2+5x+3x^2}\]

\(\allowdisplaybreaks\)

\[
t_0 := \frac{5-x}{(3+2x)^{1/2}(2+5x+3x^2)^{3/2}}
\]

\[
2 + x + 5
\]

\[
\text{Type: Expression(Integer)}
\]

\[r_0 := -94\text{\(\sqrt\)}(-2-3x)*\sqrt{-1-x}/(\sqrt{5}\sqrt{2+5x+3x^2})+24\text{\(\sqrt\)}(-2-3x)*\sqrt{-1-x}/(\sqrt{5}\text{\(\sqrt\)}(2+5x+3x^2)^{3/2})-\frac{6}{5}(37+47x)/\sqrt{5}\sqrt{2+5x+3x^2}
\]

\(\allowdisplaybreaks\)

\[
t_0 := \frac{5-x}{(3+2x)^{3/2}(2+5x+3x^2)^{3/2}}
\]

\[
3 + 2 + x + 5
\]

\[
\text{Type: Expression(Integer)}
\]
-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-6/5*(37+47*x)/
-- (sqrt(3+2*x)*sqrt(2+5*x+3*x^2))-908/25*sqrt(2+5*x+3*x^2)/sqrt(3+2*x)
--E 842

--S 843 of 1035
--d0:=D(m0,x)
--E 843

clear all

--S 844 of 1035
t0:=(5-x)/((3+2*x)^(5/2)*(2+5*x+3*x^2)^(3/2))
--R
--R
--R - x + 5
--R (1) -------------------------------------------------------
--R +----------+
--R 4 3 2 +------ | 2
--R (12x + 56x + 95x + 69x + 18)
\2x + 3 \3x + 5x + 2
--R Type: Expression(Integer)
--E 844

--S 845 of 1035
--r0:=-6/5*(37+47*x)/((3+2*x)^(3/2)*sqrt(2+5*x+3*x^2))-7438/75*
-- elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/
-- (sqrt(5)*sqrt(2+5*x+3*x^2))+3664/75*elliptic_f(asin(sqrt(3+2*x)),3/5)*
-- sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-2516/75*
-- sqrt(2+5*x+3*x^2)/(3+2*x)^(3/2)-14876/375*sqrt(2+5*x+3*x^2)/sqrt(3+2*x)
--E 845

--S 846 of 1035
d0:=D(m0,x)
--E 846

)cLEAR all

--S 847 of 1035
t0:=(5-x)/((3+2*x)^(7/2)*(2+5*x+3*x^2)^(3/2))
--R
--R
--R - x + 5
--R (1) ------------------------------------------------------------------
--R +------------+
--R 5 4 3 2 +------ | 2
--R (24x + 148x + 358x + 423x + 243x + 54)
\2x + 3 \3x + 5x + 2
--R Type: Expression(Integer)
--E 847

--S 848 of 1035
--r0:=-6/5*(37+47*x)/((3+2*x)^(5/2)*sqrt(2+5*x+3*x^2))-213374/1875*
-- elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))+121172/1875*elliptic_f(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-4124/125*sqrt(2+5*x+3*x^2)/(3+2*x)^(5/2)-61468/1875*sqrt(2+5*x+3*x^2)/(3+2*x)^(3/2)-426748/9375*sqrt(2+5*x+3*x^2)/sqrt(3+2*x)
--E 848

--S 849 of 1035
d0:=D(m0,x)
--E 849

)clear all

--S 850 of 1035
t0:=(5-x)*(3+2*x)^(9/2)/(2+5*x+3*x^2)^(5/2)
--R
--R
--R 5 4 3 2 +-------+
--R (16x - 16x + 264x + 864x + 999x + 405)
--R +------------+
--R 4 3 2 | 2
--R (9x + 30x + 37x + 20x + 4)
--R Type: Expression(Integer)
--E 850

--S 851 of 1035
r0:=-2/3*(3+2*x)^(9/2)*(29+35*x)/(2+5*x+3*x^2)^(3/2)+4/3*(3+2*x)^(7/2)*(445+569*x)/sqrt(2+5*x+3*x^2)+110516/243*elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(5)*sqrt(-2-3*x)*sqrt(-1-x)/sqrt(2+5*x+3*x^2)-21248/243*elliptic_f(asin(sqrt(3+2*x)),3/5)*sqrt(5)*sqrt(-2-3*x)*sqrt(-1-x)/sqrt(2+5*x+3*x^2)-5416/9*(3+2*x)^(3/2)*sqrt(2+5*x+3*x^2)-4552/9*(3+2*x)^(5/2)*sqrt(2+5*x+3*x^2)-59512/81*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)
--E 851

--S 852 of 1035
d0:=D(m0,x)
--E 852

)clear all

--S 853 of 1035
t0:=(5-x)*(3+2*x)^(7/2)/(2+5*x+3*x^2)^(5/2)
--R
--R
--R 4 3 2 +-------+
--R (8x + 4x + 126x + 243x + 135)
--R (1) ---------------------------------------------
\begin{verbatim}
---R +-----------+
---R  4  3  2  |  2
---R  (9x + 30x + 37x + 20x + 4)\(3x + 5x + 2\)
---R Type: Expression(Integer)
---E 853

---S 854 of 1035
---r0:=-2/3*(3+2*x)^(7/2)*(29+35*x)/(2+5*x+3*x^2)^(3/2)+20/3*(3+2*x)^(3/2)*\
       sqrt(2+5*x+3*x^2)+1674/27*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)---
---E 854

---S 855 of 1035
d0:=D(m0,x)
---E 855
)
clear all

---S 856 of 1035
t0:=(5-x)*(3+2*x)^(3/2)/(2+5*x+3*x^2)^(5/2)
---R
---R
---R  3  2  +--------+
---R  (-4x + 8x + 51x + 45)\(2x + 3\)
---R (1) --------------------------------------------
---R +-----------+
---R  4  3  2  |  2
---R  (9x + 30x + 37x + 20x + 4)\(3x + 5x + 2\)
---R Type: Expression(Integer)
---E 856

---S 857 of 1035
---r0:=-2/3*(3+2*x)^(5/2)*(29+35*x)/(2+5*x+3*x^2)^(3/2)+20/3*(3+2*x)^(3/2)*\
       sqrt(2+5*x+3*x^2)+1674/27*sqrt(3+2*x)*sqrt(2+5*x+3*x^2)---
---E 857

---S 858 of 1035
---d0:=D(m0,x)
---E 858
)
clear all

---S 859 of 1035
t0:=(5-x)*(3+2*x)^(3/2)/(2+5*x+3*x^2)^(5/2)
---R
---R
---R  3  2  +--------+
---R  (-4x + 8x + 51x + 45)\(2x + 3\)
---R (1) --------------------------------------------
---R +-----------+
---R  4  3  2  |  2
---R  (9x + 30x + 37x + 20x + 4)\(3x + 5x + 2\)
---R Type: Expression(Integer)
---E 859

340
\end{verbatim}
\[
\frac{2}{(-2x + 7x + 15)\sqrt{2x + 3}}
\]

\[
\frac{4}{(9x + 30x + 37x + 20x + 4)\sqrt{3x + 5x + 2}}
\]

\[
859
\]

\[
r_0 = -\frac{2}{3}\left(\frac{3 + 2x}{3 + 2x}\right)^{3/2}\left(\frac{29 + 35x}{2 + 5x + 3x^2}\right)^{3/2} - 2392/9
\]

\[
d_0 = D(m_0, x)
\]

\[
t_0 = \left(\frac{5 - x}{2x + 3}\right)^{1/2}\left(\frac{2 + 5x + 3x^2}{2 + 5x + 3x^2}\right)^{5/2}
\]

\[
r_0 = -\frac{2}{3}\left(\frac{29 + 35x}{2 + 5x + 3x^2}\right)^{3/2} + 2852/3
\]

\[
d_0 = D(m_0, x)
\]

t0:=(5-x)/((3+2*x)^(3/2)*(2+5*x+3*x^2)^(5/2))

r0:=-2/5*(37+47*x)*sqrt(3+2*x)/(2+5*x+3*x^2)^(3/2)+11732/25*elliptic_e(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))-2096/25*elliptic_f(asin(sqrt(3+2*x)),3/5)*sqrt(-2-3*x)*sqrt(-1-x)/(sqrt(5)*sqrt(2+5*x+3*x^2))+4/25*(2054+2409*x)/(sqrt(3+2*x)*sqrt(2+5*x+3*x^2))+23464/125*sqrt(2+5*x+3*x^2)/sqrt(3+2*x)
--d0:=D(m0,x)
--E 870
)
clear all

--S 871 of 1035
t0:=(5-x)/((3+2*x)^(5/2)*(2+5*x+3*x^2)^(5/2))
--R
--R
--R (1)
--R 
--R 
--R -----------------------------------------------
--R
--R 6 5 4 3 2 +--------+ 2
--R (36x + 228x + 589x + 794x + 589x + 228x + 36)/(2x + 3)/(3x + 5x + 2)
--R Type: Expression(Integer)
--E 871

--S 872 of 1035
--d0:=D(m0,x)
--E 873

--S 873 of 1035
t0:=(5-x)/((3+2*x)^(7/2)*(2+5*x+3*x^2)^(5/2))
--R
--R (1)
--R 
--R 
--R -----------------------------------------------
--R
--R 7 6 5 4 3 2 +-------+
--R (72x + 564x + 1862x + 3355x + 3560x + 2223x + 756x + 108)/(2x + 3)
--R *
--R +---------+
--R | 2
--R \3x + 5x + 2
--R Type: Expression(Integer)
--E 874

343
\[-r_0 := -\frac{2}{5} \frac{37 + 47 x}{(3 + 2 x)^{5/2} (2 + 5 x + 3 x^2)^{3/2}} + \frac{4}{25} \frac{1858 + 2013 x}{(3 + 2 x)^{5/2} \sqrt{2 + 5 x + 3 x^2}} + \frac{107548}{3125} \frac{\text{elliptic\_e(\text{asin}(\sqrt{3 + 2 x}), 3/5)} \sqrt{-2 - 3 x} \sqrt{-1 - x}}{\sqrt{5} \sqrt{2 + 5 x + 3 x^2}} + \frac{280256}{3125} \frac{\text{elliptic\_f(\text{asin}(\sqrt{3 + 2 x}), 3/5)} \sqrt{-2 - 3 x} \sqrt{-1 - x}}{\sqrt{5} \sqrt{2 + 5 x + 3 x^2}} + \frac{87144}{625} \frac{\sqrt{2 + 5 x + 3 x^2}}{(3 + 2 x)^{5/2}} + \frac{258536}{3125} \frac{\sqrt{2 + 5 x + 3 x^2}}{(3 + 2 x)^{3/2}} + \frac{215096}{15625} \frac{\sqrt{2 + 5 x + 3 x^2}}{\sqrt{3 + 2 x}}\]

\[d_0 := D(m_0, x)\]

\[t_0 := \sqrt{x} / ((1 + x^2) \sqrt{1 + x})\]

\[r_0 := -\frac{1}{2} (1 - i)^{3/2} \text{atanh}(\sqrt{1 - i} \sqrt{x} / \sqrt{1 + x}) - \frac{1}{2} (1 + i)^{3/2} \text{atanh}(\sqrt{1 + i} \sqrt{x} / \sqrt{1 + x})\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]
\[ t_0 := \frac{(-1+2x^2)}{\sqrt{-1+x}\sqrt{1+x}} \]

\[ r_0 := x\sqrt{-1+x}\sqrt{1+x} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(a+c\times x^2)}{\sqrt{d+e\times x}\sqrt{f+g\times x}} \]

\[ r_0 := -\frac{1}{4c}(4\times d\times e\times f + 3(e\times f + d\times g)^2)\times \text{atanh}(\sqrt{g}\sqrt{d+e\times x}/(\sqrt{e}\sqrt{f+g\times x}))/(\sqrt{e}\sqrt{g})^2) + 2a\times \text{atanh}(\sqrt{g}\sqrt{d+e\times x}/(\sqrt{e}\sqrt{f+g\times x}))/(\sqrt{e}\sqrt{g})^2) \]
\[
\frac{\sqrt{f+g}}{\sqrt{e}} \cdot \frac{\sqrt{f+g}}{\sqrt{e}^2 \cdot g^2} + \frac{1}{2} c \cdot x \cdot \sqrt{d+e} \cdot \sqrt{f+g} \cdot \sqrt{g}
\]

--R

--R (2)

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

--R

Type: Expression(Integer)

---E 884

---S 885 of 1035
d0:=D(m0,x)
---E 885

clear all

---S 886 of 1035
t0:=(d+e*x)^4*(f+g*x)^2/(d^2-e^2*x^2)

---R

---R (1)

---R

---R

---R

---R

---R

---R

---R

---R

Type: Fraction(Polynomial(Integer))

---E 886

---S 887 of 1035
r0:=-d^2*(7*e^2*f^2+16*d*e*f*g+8*d^2*g^2)*x/e^2-d*(2*e^2*f^2+7*d*e*f*g+4*d^2*g^2)*x^2/e-1/3*(e*f+d*g)*(e+f+7*d*g)*x^3-1/2*e*g*(e*f+2*d*g)*x^4-1/5*e^2*g^2*x^5-8*d^3*log(-e*x+d)/e^3

---R

---R

---R

---R

---R

---R

---R

Type: Expression(Integer)

---E 886

---S 887 of 1035

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

---R

346
\[\begin{align*}
&\text{Type: Expression(Integer)}
\end{align*}\]
\[- \frac{(-12d\ e\ g - 8e\ f\ g)x + (-24d\ e\ g - 36d\ e\ f\ g - 6e\ f)x}{3} \quad \text{Type: Expression(Integer)}
\]

\[d0 := \text{normalize(t0-D(r0,x))}\]
\[\text{Type: Expression(Integer)}\]

\[
\begin{align*}
&+ \\
&\frac{(-48d\ e\ g - 96d\ e\ f\ g - 36d\ e\ f)x}{3} \\
&12e
\end{align*}
\]

\[
\begin{align*}
&\text{clear all} \\
&\text{Type: Expression(Integer)}
\end{align*}
\]

\[
t0 := (d+e*x)^2*(f+g*x)^2/(d^2-e^2*x^2)
\]
\[\text{Type: Fraction(Polynomial(Integer))}\]

\[
r0 := -2*d*g*(e*f+d*g)*x/e^2-d*(f+g*x)^2/e-1/3*(f+g*x)^3/g-\
\quad 2*d*(e*f+d*g)^2*log(-e*x+d)/e^3
\]
\[\text{Type: Expression(Integer)}\]
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(d + e \cdot x) \cdot (f + g \cdot x)^2}{d^2 - e^2 \cdot x^2} \]

\[ r_0 := -\frac{g \cdot (e \cdot f + d \cdot g) \cdot x}{e^2} - \frac{1}{2} \cdot \frac{(f + g \cdot x)^2}{e} - \frac{(e \cdot f + d \cdot g)^2 \cdot \log(d - e \cdot x)}{e^3} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(f + g \cdot x)^2}{d^2 - e^2 \cdot x^2} \]
\[ \frac{2g^2x - 2fgx - f}{e^2x - d} \quad \text{(1)} \]
\[ \frac{(d^2g - 2defg + e^2f)\log(e + x) + (-d^2g - 2defg - e^2f)\log(-e + x) - 2degx}{3de} \]
\[ \text{Type: Expression(Integer)} \]
\[ \text{Type: Fraction(Polynomial(Integer))} \]

\[ r_0 = -g^2x/e^2 - 1/2*(e\*f+d\*g)^2\log(d-e\*x)/(d*e^3) + 1/2*(e\*f-d\*g)^2\log(d+e\*x)/(d*e^3) \]

\[ d_0 = \text{normalize}(t_0 - D(r_0, x)) \]
\[ t_0 = (f+g\*x)^2/((d+e\*x)*(d^2-e^2\*x^2)) \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]
The given text contains complex mathematical expressions involving logarithms, roots, and other functions. The expressions are quite intricate, involving many variables and operations.

Here is a simplified representation of the expressions:

\[ r_0 = \frac{-1}{2} \frac{(e \cdot f - d \cdot g)^2}{(d + e \cdot x)^2} - \frac{1}{4} \frac{(e \cdot f - d \cdot g)^2 \log(d - e \cdot x)}{(d + e \cdot x)^2} + \frac{1}{4} \frac{(e \cdot f + d \cdot g)^2 \log(d + e \cdot x)}{(d + e \cdot x)^2} \]

\[ d_0 := \text{normalize}(t_0 - D(r, x)) \]

\[ t_0 := \frac{(f + g \cdot x)^2}{(d + e \cdot x)^2} \]

The expressions include terms involving logarithmic functions and other mathematical operations. The expressions are quite complex and require a good understanding of calculus and algebra to interpret correctly.
```
--R 3 2 2 2
--R 2d e f g + d e f
--R *
--R e x
--R atanh(---)
--R d
--R +
--R 3 2 2 2 3 2 4 2 2 2 2
--R (3d e g - 2d e f g - d e f )x + 2d g - 2d e f
--R /
--R 3 5 2 4 4 5 3
--R 4d e x + 8d e x + 4d e
--R Type: Expression(Integer)
--E 905

--S 905 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R 3 0
--R Type: Expression(Integer)
--E 906

)clear all

--S 907 of 1035
t0:=(f+g*x)^2/((d+e*x)^3*(d^2-e^2*x^2))
--R
--R 2 2 2
--R - g x - 2f g x - f
--R Type: Expression(Integer)
--E 907

--S 908 of 1035
r0:=-1/6*(e*f-d*g)^2/(d*e^3*(d+e*x)^3)-1/8*(e*f-d*g)*(e*f+3*d*g)/
   (d^2*e^3*(d+e*x)^2)-1/8*(e*f+d*g)^2/(d^3*e^3*(d+e*x))+
   1/8*(e*f+d*g)^2*atanh(e*x/d)/(d^4*e^3)
--R
--R 2
--R (2)
--R 2 3 2 4 5 2 3 3 2 2 2 3 4 2 2
--R (3d e g + 6d e f g + 3e f )x + (9d e g + 18d e f g + 9d e f )x
--R +
--R 4 2 3 2 2 3 2 5 2 4 3 2 2
--R (9d e g + 18d e f g + 9d e f )x + 3d g + 6d e f g + 3d e f
--R *
```
\[
\frac{\frac{(-3d e g - 6d e f g - 3d e f )x}{(3d e g - 18d e f g - 9d e f )x} + \frac{52}{4 d g - 4d e f g - 10d e f}}{24d e x + 72d e x + 72d e x + 24d e}
\]

Type: Expression(Integer)


\[ \frac{5 \cdot 2 \cdot 4 \cdot 2 + 3 \cdot 3 \cdot 2 + 6 \cdot 2 + 5 \cdot 4 \cdot 2 \cdot 2}{(12d \cdot e \cdot g + 24d \cdot e \cdot f \cdot g + 12d \cdot e \cdot f)\cdot x + 3d \cdot g + 6d \cdot e \cdot f \cdot g + 3d \cdot e \cdot f} \ * \ e \cdot x \ + \ \text{atanh}(-\cdot) \ + \ d \ + \ \frac{3 \cdot 3 \cdot 2 \cdot 2 \cdot 4 \cdot 2 \cdot 3 \cdot 3 \cdot 2 \cdot 5 \cdot 2 \cdot 3}{(\text{atanh}(-\cdot))} \ + \ 4 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 2 \cdot 4 \cdot 2 \cdot 2 \ + \ (\text{atanh}(-\cdot)) \ + \ 5 \cdot 2 \cdot 4 \cdot 2 \cdot 3 \cdot 3 \cdot 2 \cdot 5 \cdot 2 \cdot 3 \ + \ d}^{2} \ - \ 2d \ \cdot e \ \cdot x + d \]
\[ r_0 := d^3(49e^2f^2 + 160defg + 112d^2g^2)x/e^2 + 1/2d^2(23e^2f^2 + 98defg + 80d^2g^2)x/e + 1/3d(7e^2f^2 + 46defg + 49d^2g^2)x^3 + 1/4e(e^2f^2 + 14defg + 23d^2g^2)x^4 + 1/5e^2g(2ef + 7dg)x^5 + 1/6e^3g^2x^6 + 32d^5(ef + dg)^2/(e^3(d - ex)) + \\
16d^4(ef + dg)(5e + 9d)log(d - ex)/e^3 \]

\[ d_0 := normalize(t_0 - D(r_0, x)) \]

\[ d_0 \]

\[ (3) 0 \]

\[ Type: Expression(Integer) \]

\[ )clear all \]
t0 := (d+e*x)^6*(f+g*x)^2/(d^2-e^2*x^2)^2

4 2 6 3 2 4 5 2 2 2 3 4 2 4
4 3 2 2 2 3 2 3 4 2 3 2 2 2 2
4 3 2 4 2
4 2 3 2 4 2
2 2 2

r0 := d^2*(17*e^2*f^2+64*d*e*f*g+48*d^2*g^2)*x/e^2+d*(3*e^2*f^2+17*d*e*f*g+
16*d^2*g^2)*x/e+1/3*(e^2*f^2+17*d*e*f*g+16*d^2*g^2)*x^3+
1/2*e*g*(e*f+3*d*g)*x^4+1/5*e^2*g^2*x^5+16*d^4*(e*f+d*g)^2/(e^3*(d-e*x))+
32*d^3*(e*f+d*g)*(e*f+2*d*g*log(d-e*x))/e^3

5 2 4 2 3 3 2 6 2 5
4 2 2
960d e f

6 2 6 5 2 6 5 2 4 2 5 6 2 4
6e g x + (39d e g + 15e f g)*x + (125d e g + 105d e f g + 10e f )x
3 3 2 2 4 5 2 3
(310d e g + 390d e f g + 80d e f )x
4 2 2 3 3 2 4 2 2
(960d e g + 1410d e f g + 420d e f )x

5 2 4 2 3 3 2 6 2 5
(- 1440d e g - 1920d e f g - 510d e f )x - 480d g - 960d e f g
4 2 2
4 2 2
480d e f

Type: Fraction(Polynomial(Integer))
--R  30e x - 30d e
--R  
--E 917

--S 918 of 1035
d0:=normalize(t0-D(r0,x))
--R
--R
--R (3) 0
--R
--E 918

)clear all

--S 919 of 1035
t0:=(d+e*x)^5*(f+g*x)^2/(d^2-e^2*x^2)^2
--R
--R
--R (1)
--R 3 2 5  2 2 3  4 2 2 2  3 2 3
--R  e g x + (3d e g + 2e f g)x + (3d e g + 6d e f g + e f )x
--R  +
--R 3 2 2  2 2 3  2 2 3 2
--R  (d g + 6d e f g + 3d e f )x + (2d f g + 3d e f )x + d f
--R /
--R 2 2
--R  e x - 2d e x + d
--R
--E 919

--S 920 of 1035
r0:=d*(5*e^2*f^2+24*d*e*f*g+20*d^2*g^2)*x/e^2+1/2*(e^2*f^2+
10*d*e*f*g+12*d^2*g^2)*x^2/e^2+1/3*(2*e^2*f^2+5*d*e*g)x^3+1/4*e^2*g^2*x^4+
8*d^3*(e*f+d*g)^2/(e^3*(d-e*x))+4*d^2*(e*f+d*g)*(3*e^2+f^2+d^2)*log(d-e*x)/e^3
--R
--R
--R (2)
--R 4 2 3 2 2 3 2 5 2 4
--R  (336d e g + 480d e f g + 144d e f )x - 336d g - 480d e f g
--R  +
--R 3 2 2
--R  - 144d e f
--R *
--R  log(- e x + d)
--R +
--R 5 2 5 4 2 5 4 2 3 2 4 5 2 3
--R 3e g x + (17d e g + 8e f g)x + (52d e g + 52d e f g + 6e f )x
--R +
--R 3 2 2 2 3 4 2 2
\[(168d \ e \ g + 228d \ e \ f \ g + 54d \ e \ f)x\]
\[+\]
\[4 \ 2 \ 3 \ 2 \ 2 \ 3 \ 2 \ 5 \ 2 \ 4 \ 3 \ 2 \ 2\]
\[(- 240d \ e \ g - 288d \ e \ f \ g - 60d \ e \ f)x - 96d \ g - 192d \ e \ f \ g - 96d \ e \ f\]
\[\div\]
\[4 \ 3\]
\[12e \ x - 12d \ e\]

Type: Expression(Integer)

\(t0:=\text{normalize}(t0-D(r0,x))\)

\(\text{clear all}\)

\(\text{d0:}=:\text{normalize}(t0-D(r0,x))\)

\(\text{Type: Expression(Integer)}\)

\(r0:=(e^2*f^2+8*d*e*f*g+8*d^2*g^2)*x/e^2+g*(e*f+2*d*g)*x^2/e+1/3*g^2*x^3+\frac{4*d^2*(e*f+d*g)^2/(e^3*(d-e*x)+4*d*(e*f+d*g)*(e*f+3*d*g)*log(d-e*x)/e^3}{e^3}\)

\(\text{Type: Fraction(Polynomial(Integer))}\)
denote each block of the type: Expression(Integer)
\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]

\[t_0 := \frac{(d + e \cdot x)^2 \cdot (f + g \cdot x)^2}{(d^2 - e^2 \cdot x^2)^2}\]

\[r_0 := \frac{g^2 \cdot x}{e^2} + \frac{(e \cdot f + d \cdot g)^2}{e^3 \cdot (d - e \cdot x)} + 2 \cdot g \cdot (e \cdot f + d \cdot g) \cdot \log(d - e \cdot x) / e^3\]

\[d_0 := \text{normalize}(t_0 - D(r_0, x))\]
\[ t_0 := \frac{(d+e\times x)^2}{(d^2-e^2\times x^2)^2} \]

\[ r_0 := \frac{1}{2}(e\times f+d\times g)^2}{(d\times e^3}\times (d-e\times x)) - \frac{1}{4}(e\times f-3\times d\times g)\times (e\times f+d\times g)\times _\log(d-e\times x)/(d^2\times e^3)+1/4(e\times f-d\times g)^2\times \log(d+e\times x)/(d^2\times e^3) \]

\[ d_0 := \text{normalize}(t_0-D(r_0,x)) \]

\( \text{clear all} \)
\[
\frac{1}{2}(d^2g + e^2f x)(f + g x) \quad \text{Type: Fraction(Polynomial(Integer))}
\]

\[
r_0 := \frac{1}{2}(d^2g + e^2f x)(f + g x) \quad \text{Type: Expression(Integer)}
\]

\[
\frac{-e^2f^2 + d^2g^2}{d^3e^3(d + e x)} \quad \text{Type: Expression(Integer)}
\]

\[
d_0 := \text{normalize}(t_0 - D(r_0, x))
\]

\[
t_0 := \frac{(f + g x)^2}{(d + e x)(d^2 - e^2 x^2)^2}
\]

\[
r_0 := \frac{1}{8}(e^2f^2 + d^2g^2)(e + x)^2) \quad \text{Type: Fraction(Polynomial(Integer))}
\]

\[
r_0 := \frac{1}{8}(e^2f^2 + d^2g^2)(e + x)^2) \quad \text{Type: Expression(Integer)}
\]

)clear all
\[ \begin{align*} \text{Type: Expression(Integer)} \end{align*} \]
\[ 
\begin{align*}
& (3 \text{ e f g } + 3 \text{ e f } )x + (6 \text{ d e f g } + 6 \text{ d e f } )x \\
& + \quad 4 \quad 2 \quad 3 \quad 3 \quad 2 \quad 5 \quad 4 \quad 2 \quad 2 \\
& ( - 6 \text{ d e f g } - 6 \text{ d e f } )x - 3 \text{ d e f g } - 3 \text{ d e f } \\
& * \quad e \quad x \quad \text{ atanh}(---) \quad d \\
& + \quad 2 \quad 4 \quad 5 \quad 2 \quad 3 \quad 3 \quad 2 \quad 4 \quad 2 \quad 2 \\
& ( - 3 \text{ d e f g } - 3 \text{ d e f } )x + ( - 6 \text{ d e f g } - 6 \text{ d e f } )x \\
& + \quad 5 \quad 2 \quad 4 \quad 2 \quad 3 \quad 3 \quad 2 \quad 6 \quad 2 \quad 5 \quad 4 \quad 2 \quad 2 \\
& ( - 4 \text{ d e g } - d \text{ e f g } - d \text{ e f } )x - 2 \text{ d g } - 2 \text{ d e f g } + 4 \text{ d e f } \\
& / \quad 5 \quad 7 \quad 4 \quad 6 \quad 6 \quad 3 \quad 8 \quad 4 \quad 9 \quad 3 \\
& 12 \text{ d e } x + 24 \text{ d e } x - 24 \text{ d e } x - 12 \text{ d e } \\
& \text{ Type: Expression(Integer)}
\end{align*}
\]
\[ \begin{align*}
&\frac{d0:=\text{normalize}\left( t0-D(r0,x) \right)}{
\text{Type: Expression(Integer)}}
\end{align*} \]
\[ r_0 := \frac{1}{64}(e^2f^2g^2 + 2d^2e^2g^2) + \frac{1}{20}(e^2f^2g^2 + 2d^2e^2g^2) - \frac{1}{48}(3e^2f^2g^2) + \frac{1}{16}(-e^2f^2g^2 + 2d^2e^2g^2) - \frac{1}{32}(e^2f^2g^2) + \frac{1}{32}(3e^2f^2g^2) \operatorname{atanh}(e^2f^2g^2) - \frac{1}{16}(e^2f^2g^2 + 2d^2e^2g^2) - \frac{1}{32}(e^2f^2g^2) \]
```
--R  +  
--R 7 2 6 2 5 3 2 8 2 7 6 2 2 
--R  (- 49d e g + 188d e f g + 141d e f )x - 16d g + 32d e f g + 144d e f 
--R /
--R 7 9 6 8 8 5 9 7 4 11 5 2 12 4 13 3 
--R 480d e x + 1920d e x + 2400d e x - 2400d e x - 1920d e x - 480d e  
--R Type: Expression(Integer) 
--E 947

--S 948 of 1035

\(d0:=\text{normalize}(t0-D(r0,x))\) 
--R  
--R (3) 0  
--R Type: Expression(Integer) 
--E 948

\(\text{\texttt{clear all}}\) 

--S 949 of 1035 

\(t0:=(d+e*x)^7*(f+g*x)^2/(d^2-e^2*x^2)^3\) 
--R  
--R (1)  
--R  
--R \(- 4d e g - 2e f g)x + (- 6d e g - 8d e f g - e f )x 
--R + 
--R 3 2 2 2 3 2 3 4 2 3 2 2 2 2 
--R \(- 4d e g - 12d e f g - 4d e f )x + (- d g - 8d e f g - 6d e f )x 
--R + 
--R 4 4 3 2 4 2 
--R \(- 2d f g - 4d e f )x - d f 
--R /
--R 3 3 2 2 2 3 
--R e x - 3d e x + 3d e x - d  
--R Type: Fraction(Polynomial(Integer)) 
--E 949

--S 950 of 1035

\(r0:=-d*(7*e^2*f^2+48*d*e*f*g+56*d^2*g^2)/e^2-1/2*(e*f+2*d*g)*(e*f+12*d*g)\)*  
\(x^2/e-1/3*g*(2*e*f+7*d*g)*x^3-1/4*e*g^2*x^4+8*d^4*(e*f+d*g)^2/(e^3*  
(d-e*x)^2)-32*d^3*(e*f+d*g)*(e*f+2*d*g)/(e^3*(d-e*x))-8*d^2*3*e^2*f^2+  
14*d*e*f*g+13*d^2*g^2)*log(d-e*x)/e^3 
--R  
--R (2)  
--R  
--R \(- 1248d e g - 1344d e f g - 288d e f )x 
--R + 
--R 5 2 4 2 3 3 2 6 2 5  
```
\[\begin{align*}
&\text{Type: Expression(Integer)} \\
&d0:=\text{normalize(t0-D(r0,x))} \\
&t0:=(d+e*x)^6*(f+g*x)^2/(d^2-e^2*x^2)^3
\end{align*}\]
\[
\begin{align*}
\text{r0} := & -(e^2 f^2 + 12 d e f g + 18 d^2 g^2) x/e^2 - g(e f^3 + 3 d e^2 g) x^2/e^2 - 1/3 g^2 x^3 + \\
& 4 d^3 (e + 3 d g)^2/(e^3 (d - e x)^2) - 4 d^2 (e + 3 d g) (3 e f + 7 d g)/(e^3 (d - e x)) - 2 d^2 (3 e^2 f^2 + 18 d e f g + 19 d^2 g^2) \log(d - e x)/e^3
\end{align*}
\]

\[
\begin{align*}
d0 := & \text{normalize(t0-D(r0, x))}
\end{align*}
\]
\[-\frac{g(2ef+5dg)x}{e^2} - \frac{1}{2}g^2x^2}{e} + \frac{2d^2(ef+dg)^2}{e^3(d-ex)^2} - \frac{4d(ef+dg)(ef+3dg)}{e^3(d-ex)} - \frac{e^2f^2+10d^2efg+13d^2g^2}{e^3}\]

\[
(2) \frac{26de^2g + 20df^2g + 2ef}{e^3} + \frac{52de^2g + 40d^2efg + 4def}{e^3} \log(-e^3 + d) + \frac{4^24^32^22^2}{e^2} + \frac{e^2g^2}{e^3} + \frac{(-8d^2efg - 4e^2f) + 20d^2efg - 2d^2f}{e^3} + \frac{19d^2efg + 8d^2efg}{e^3}
\]
r0:=-g^2*x/e^2+d*(e*f+d*g)^2/(e^3*(d-e*x)^2)-(e*f+d*g)*(e*f+5*d*g)/(e^3*(d-e*x))-2*g*(e*f+2*d*g)*log(d-e*x)/e^3

(2)

(( - 4d e g - 2e f g)x + (8d e g + 4d e f g)x - 4d g - 2d e f g) * log(- e x + d) +

(( e g x + 2d e g x + (4d e g + 6d e f g + e f )x - 4d g - 4d e f g) / e^2 e x - 2d e x + d e

Type: Expression(Integer)

(3) 0

Type: Expression(Integer)

clear all

t0:=(d+e*x)^3*(f+g*x)^2/(d^2-e^2*x^2)^3

2 2 2
-g x - 2f g x - f

(1) ----------------------------

3 3 2 2 2 3

e x - 3d e x + 3d e x - d

Type: Fraction(Polynomial(Integer))
\[
\begin{align*}
&-\frac{2e^x - 4de^{2x} + 2de}{(d^2 - e^2x^2)^3} \\
&\text{Type: Fraction(Polynomial(Integer))} \\
&\text{E 964 of 1035}
\end{align*}
\]
\[
\begin{align*}
r0:=&\frac{1/4*(e*f+d*g)^2/((d*e^3*(d-e^x)^2)+1/4*(e*f-3*d*g)*(e*f+d*g)/_}{(d^2*e^3*(d-e*x)+1/4*(e*f-d*g)^2*atanh(e*x)/(d^3*e^3)}/
\end{align*}
\]
\[
\begin{align*}
&\text{Type: Expression(Integer)} \\
&\text{E 965 of 1035}
\end{align*}
\]
\[
\begin{align*}
t0:=&\frac{(d+e*x)^2*(f+g*x)^2}{d^2-e^2x^2} + 1/4*(e*f-3*d*g)*(e*f+d*g)/_ \\
&\text{Type: Expression(Integer)} \\
&\text{E 966 of 1035}
\end{align*}
\]
R (3d e g + 2d e f g - d e f )x - 2d g + 2d e f
R / 3 5 2 4 4 5 3
R 4d e x - 8d e x + 4d e
R Type: Expression(Integer)
--E 965

---S 966 of 1035
d0:=normalize(t0-D(r0,x))
---R
---R
---R (3) 0
---R Type: Expression(Integer)
---E 966

)clear all

---S 967 of 1035
t0:=(d+e*x)*(f+g*x)^2/(d^2-e^2*x^2)^3
---R
---R
---R 2 2 2
---R - g x - 2f g x - f
---R (1) -------------------------------
---R 5 5 4 4 2 3 3 3 2 2 4 5
---R e x - d e x - 2d e x + 2d e x + d e x - d
---R Type: Fraction(Polynomial(Integer))
---E 967

---S 968 of 1035
r0:=1/8*(e*f+d*g)^2/(d^2*e^3*(d-e*x)^2)+1/4*(e^2*f^2-d^2*g^2)/(d^3*e^3*(d-e*x))-1/8*(e*f-d*g)^2/(d^3*e^3*(d+e*x))
---R
---R
---R (2)
---R 2 3 2 4 3 2 4 2 3
---R (- d e g - 2d e f g + 3e f )x + (d e g + 2d e f g - 3d e f )x
---R +
---R 4 2 3 2 2 3 2 5 2 4 3 2 2
---R (d e g + 2d e f g - 3d e f )x - d g - 2d e f g + 3d e f
---R *
---R e x
---R atanh(---)
---R d
---R +
---R 3 2 2 2 3 4 2 2 4 2 3 2 2 3 2 5 2
---R (d e g + 2d e f g - 3d e f )x + (3d e g - 2d e f g + 3d e f )x - 2d g
---R +
---R 4 3 2 2

373
d0:=normalize(t0-D(r0,x))

\( t0:=(f+g*x)^2/(d^2-e^2*x^2)^3 \)

\( r0:=-\frac{1}{4}(d^2*g-e^2*f*x)(f+g*x)^3/(d^2*(e^2*f^2-d^2*g^2)*(d^2-e^2*x^2)^2)+_\frac{1}{8}(3*e^2*f^2-d^2*g^2)(d^2*g+e^2*f*x)(f+g*x)/(d^4*e^2*_(e^2*f^2-d^2*g^2)*(d^2-e^2*x^2))+1/8*(3*e^2*f^2-d^2*g^2)*atanh(e*x/d)/_ (d^5*e^3) \)
\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ (3) \quad 0 \]

\[ \text{clear all} \]

\[ t_0 := \frac{(f + g x)^2}{(d + e x)^2 (d^2 - e^2 x^2)^3} \]

\[ (1) \]

\[ \frac{2}{7} \quad x + \frac{2}{6} \quad \frac{g x - 2 f g x - f}{4} \]

\[ \frac{1}{7} \quad 3 d e x - 3 d e x - 3 d e x - 3 d e x - 3 d e x - d e x - d \]

\[ \text{Type: Fraction(Polynomial(Integer))} \]

\[ r_0 := \frac{1}{32} \left( e f + d g \right)^2 \frac{1}{(d^4 e^3 (d - e x)^2) + 1/8 (e f + d g) / (d^5 e^2 (d - e x)) - \frac{1/24 (e f - d g)}{(d^4 e^3 (d + e x)^2) - 1/32 (e f - d g) / (d^5 e^3 (d + e x)) + \frac{1/16 (5 e^2 f^2 + 2 d e f g - d^2 g^2) \ln \left( e x / d \right)}{(d^5 e^3) / (d^6 e^2)} \right) \]

\[ (2) \]

\[ - \frac{3 d e g + 6 d e f g + 15 e f}{2} x \]

\[ + \frac{3 e^2 f^2 + d^2 g^2}{2} \]

\[ (6 d e g - 12 d e f g - 30 d e f) x \]

\[ + \frac{6 d e g - 12 d e f g - 30 d e f}{2} \]

\[ (6 d e g - 12 d e f g - 30 d e f) x \]

\[ + \frac{6 d e g - 12 d e f g - 30 d e f}{2} \]

\[ \frac{(- 3 d e g + 6 d e f g + 15 e f) x - 3 d g + 6 d e f g + 15 d e f}{2} \]

\[ \text{atanh}(---) \]

\[ \text{atanh}(---) \]

\[ d \]
R + 3 4 2 2 5 6 2 4 4 3 2 3 4 2 5 2 3
R (3d e g - 6d e f g - 15d e f )x + (3d e g - 6d e f g - 15d e f )x
R +
R 5 2 2 4 3 3 4 2 2 6 2 5 2 4 3 2
R (- 5d e g + 10d e f g + 25d e f )x + (7d e g + 10d e f g + 25d e f )x
R +
R 7 2 6 5 2 2
R 4d g + 16d e f g - 8d e f
R /
R 6 8 5 7 7 4 8 6 3 9 5 2 10 4 11 3
R 48d e x + 48d e x - 96d e x - 96d e x + 48d e x + 48d e
R Type: Expression(Integer)
R
E 974

S 975 of 1035
d0:=normalize(t0-D(r0,x))
-
-
R (3) 0
R Type: Expression(Integer)
E 975

)clear all

S 976 of 1035
t0:=(f+g*x)^2/((d+e*x)^2*(d^2-e^2*x^2)^3)
-
-
R
-
-
R 2 2 2
R 2 2
R - g x - 2f g x - f
R (1)
R
R 8 8 7 7 2 6 6 3 5 5 5 3 3 6 2 2 7 8
R e x + 2d e x - 2d e x - 6d e x + 6d e x + 2d e x - 2d e x - d
R Type: Fraction(Polynomial(Integer))
E 976

S 977 of 1035
r0:=1/64*(e*f+d*g)^2/(d^5*e^3*(d-e*x)^2)+1/64*(e*f+d*g)*(5*e*f+d*g)/_ 
(6*e^3*(d-e*x)) + 1/32*(e*f+d*g)^2/(d^3*e^3*(d+e*x)^4) - 1/48*(e*f+d*g)*_ 
(3*e*f+d*g)/(d^4*e^3*(d+e*x)^3) + 1/32*(-3*e^2*f^2+2*d^2*g^2)/(d^5*e^3*_ 
(d+e*x)^2) + 1/32*(-5*e^2*f^2-2*d*e*f*g+d^2*g^2)/(d^6*e^3*(d+e*x)) +_ 
1/64*(15*e^2*f^2+10*d*e*f*g-d^2*g^2)*atanh(e*x/d)/(d^7*e^3)
-
-
R (2)
-
-
R 2 6 2 7 8 2 6
R (- 3d e g + 30d e f g + 45e f )x
R +
R
R 3 5 2 2 6 7 2 5

376
\[
(-6d\,e\,g + 60d\,e\,f\,g + 90d\,e\,f)x + 4\,4\,2\,3\,5\,2\,6\,2\,4
\]
\[
(3d\,e\,g - 30d\,e\,f\,g - 45d\,e\,f)x + 5\,3\,2\,4\,4\,3\,5\,2\,3
\]
\[
(12d\,e\,g - 120d\,e\,f\,g - 180d\,e\,f)x + 6\,2\,2\,5\,3\,4\,4\,2\,2
\]
\[
(3d\,e\,g - 30d\,e\,f\,g - 45d\,e\,f)x + 7\,2\,6\,2\,5\,3\,2\,8\,2\,7\,6\,2\,2
\]
\[
(-6d\,e\,g + 60d\,e\,f\,g + 90d\,e\,f)x - 3d\,g + 30d\,e\,f\,g + 45d\,e\,f
\]
\[
* \quad ex
\]
\[
\text{atanh}(-4)
\]
\[
d + 3\,5\,2\,2\,6\,7\,2\,5\,4\,4\,2\,3\,5\,2\,6\,2\,4
\]
\[
(3d\,e\,g - 30d\,e\,f\,g - 45d\,e\,f)x + (6d\,e\,g - 60d\,e\,f\,g - 90d\,e\,f)x + 5\,3\,2\,4\,4\,3\,5\,2\,3
\]
\[
(-2d\,e\,g + 20d\,e\,f\,g + 30d\,e\,f)x + 6\,2\,2\,5\,3\,4\,4\,2\,2
\]
\[
(-10d\,e\,g + 100d\,e\,f\,g + 150d\,e\,f)x + 7\,2\,6\,2\,5\,3\,2\,8\,2\,7\,6\,2\,2
\]
\[
(35d\,e\,g + 34d\,e\,f\,g + 51d\,e\,f)x + 16d\,g + 32d\,e\,f\,g - 48d\,e\,f
\]
\[
/ \quad 7\,9\,6\,8\,8\,5\,9\,7\,4\,10\,6\,3\,11\,5\,2\,12\,4\n\]
\[
192d\,e\,x + 384d\,e\,x - 192d\,e\,x - 768d\,e\,x - 192d\,e\,x + 384d\,e\,x
\]
\[
+ \quad 13\,3
\]
\[
192d\,e
\]
\[
\text{Type: Expression}\,(\text{Integer})
\]
\[
\text{E 977}
\]
\[
\text{S 978 of 1035}
\]
d0:=normalize(t0-D(r0,x))

\[
\text{E 978}
\]
\[
)\text{clear all}
\]
\[
\text{S 979 of 1035}
\]
t0:=(a+b*x+c*x^2)/((d+e*x)*(f+g*x))
\[ r_0 := \frac{c x}{e g} + \frac{(c d^2 - b d e + a e^2) \log(d + e x)}{e^2 (e f - d g)} - \frac{(c f^2 - g(b f - a g)) \log(f + g x)}{g^2 (e f - d g)} \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ t_0 := \frac{(a + b x + c x^2)^2}{(d + e x)(f + g x)} \]
\[ r_0 := \frac{(b^2e^2g^2-2cxe^g+(b+e+f+bdg-a+e+g)+c^2(e^2f^2+d^e+f^g)}{e^3g^3} - \frac{1}{2}c(e^d+e+f^g) - \frac{1}{3}c^2(e^d+f^g) - \frac{1}{4}c^3(e+f+g) + \frac{1}{5}c^4(e+f+g) \]

\[ (c+f^2g^{2}(b+e+f+g)^2) - 2\log(f+g+x)/(g^4(e+f+d)) \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

\[ (3) \]

\[ \text{Type: Expression(Integer)} \]

\[ )\text{clear all} \]

\[ \text{Type: Expression(Integer)} \]

\[ \text{Type: Expression(Integer)} \]
\begin{align*}
\text{(1)} \\
&= R \begin{bmatrix} 3 & 6 & 2 & 5 & 2 & 2 & 4 & 3 & 3 & 2 & 2 & 2 \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 2 & 3 \end{bmatrix} \\
&= \begin{bmatrix} 3a & b & x & a \end{bmatrix} \\
&= / \\
&= \begin{bmatrix} 2 \end{bmatrix} \\
&= e \begin{bmatrix} g & x & + & (d & g & + & e & f) & x & + & d & f \end{bmatrix}
\end{align*}

\text{Type: Fraction(Polynomial(Integer))}

\begin{align*}
\text{(2)} \\
&= R \begin{bmatrix} 3 & 6 & 6 & 2 & 6 & 5 & 2 & 2 & 6 & 2 & 4 \end{bmatrix} \\
&= 60a \begin{bmatrix} e & g & - & 180a & b & e & f & g & + & (180a & c & + & 180a & b) & e & f & g \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 3 & 6 & 3 & 3 & 2 & 2 & 6 & 4 & 2 & 2 & 6 & 5 \end{bmatrix} \\
&= (-360a \begin{bmatrix} b & c & - & 60b \end{bmatrix} e & f & g & + & (180a & c & + & 180b & c) & e & f & g & - & 180b & c & e & f & g \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 3 & 6 & 6 \end{bmatrix} \\
&= 60c \begin{bmatrix} e & f \end{bmatrix} \\
&= * \\
&= \begin{bmatrix} \log(g & x & + & f) \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 3 & 6 & 2 & 5 & 2 & 2 & 2 & 4 \end{bmatrix} \\
&= - 60a \begin{bmatrix} e & + & 180a & b & d & e & + & (-180a & c & - & 180a & b) & d & e \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 3 & 3 & 3 & 2 & 2 & 4 & 2 & 5 & 3 & 6 \end{bmatrix} \\
&= (360a \begin{bmatrix} b & c & + & 60b \end{bmatrix} d & e & + & (-180a & c & - & 180b & c) & d & e & + & 180b & c & d & e & - & 60c & d \end{bmatrix} \\
&= * \\
&= 6 \\
&= g \begin{bmatrix} \log(e & x & + & d) \end{bmatrix} \\
&= + \\
&= \begin{bmatrix} 3 & 5 & 6 \end{bmatrix} \\
&= \begin{bmatrix} 3 & 5 & 6 \end{bmatrix} \\
&= (12c \begin{bmatrix} d & e & g & - & 12c & e & f & g \end{bmatrix} x) \\
&= + \\
\end{align*}
\[ \begin{align*}
\text{Type: Expression(Integer)}
\end{align*} \]
\[d0:=\text{normalize}(t0-D(r0,x))\]

\[t0:=\frac{1}{((d+e\times x)\times (f+g\times x)\times (a+b\times x+c\times x^2))}\]

\[r0:=\frac{e^2\times \log(d+e\times x)}{((c\times d^2-b\times d\times e+a\times e^2)\times (e\times f-d\times g))}\]

\[\frac{g^2\times \log(f+g\times x)}{((e\times f-d\times g)\times (c\times f^2-g\times (b\times f-a\times g)))}\]

\[-\frac{1}{2}\times \frac{c\times e\times f+c\times d\times g-b\times e\times g}{((c\times d^2-b\times d\times e+a\times e^2)\times (c\times f^2-g\times (b\times f-a\times g)))}\]

\[-\frac{2\times c^2\times d\times f+b^2\times e\times g-c\times (b\times e\times f+b\times d\times g+2\times a\times e\times g)}{((b+2\times c\times x)\times \sqrt{b^2-4\times a\times c}))}\]

\[-\frac{2\times c\times x+b}{\sqrt{b^2-4\times a\times c})}\]

\[-\frac{((4\times a\times c-2\times b)\times d\times e+2\times b\times c\times d\times g+((-4\times a\times c+2\times b)e-4\times c\times d\times f)\times g}{2\times 2\times 2}\]

\[\frac{(-2\times b\times c\times e+4\times d\times e\times f}{2\times 2}\]

\[\text{atanh}(\frac{2\times c\times x+b}{\sqrt{b^2-4\times a\times c))}\]

\[\frac{((b\times d\times e-c\times d\times g-b\times e\times f+c\times e\times f)\times \log(c\times x+b\times x+a)}{2\times 2\times 2}\]
\[ \frac{2}{6} \frac{2}{6} \frac{2}{6} \frac{2}{6} \]
\[\frac{2}{2} + \frac{2}{2} (a \cdot d \cdot g + (a \cdot e + 2a \cdot b \cdot d)d) \cdot f + a \cdot d \cdot f\]

Type: Fraction(Polynomial(Integer))
\begin{align*}
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 3 \quad 2 \quad 5 \quad 4 \quad 2 \quad 3 \quad 3 \\
\text{R} & \quad (- 8 \text{ a b c} + 24 \text{ a b c} - 4 \text{ b c})e - 32 \text{ a b c d e} \\
\text{R} & \quad + \\
\text{R} & \quad 4 \quad 3 \quad 2 \quad 2 \quad 5 \quad 4 \\
\text{R} & \quad (- 16 \text{ a b c} + 16 \text{ b c})d e - 8 \text{ b c d} \\
\text{R} & \quad * \\
\text{R} & \quad 3 \\
\text{R} & \quad f \ g \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 3 \quad 4 \quad 2 \quad 4 \quad 4 \quad 3 \quad 2 \quad 4 \quad 2 \quad 2 \quad 5 \quad 3 \quad 4 \\
\text{R} & \quad ((- 12 \text{ a b c} + 2 \text{ b c})e + 24 \text{ a b c d e} - 12 \text{ b c d e} + 8 \text{ b c d e})f \\
\text{R} & \quad * \\
\text{R} & \quad x \\
\text{R} & \quad + \\
\text{R} & \quad 4 \quad 2 \quad 3 \quad 2 \quad 2 \quad 4 \quad 3 \quad 3 \quad 2 \quad 2 \quad 3 \quad 5 \quad 2 \quad 2 \\
\text{R} & \quad (24 \text{ a c} - 24 \text{ a b c} + 4 \text{ a b})d e + (12 \text{ a b c} + 8 \text{ a b c} - 2 \text{ a b})d e \\
\text{R} & \quad + \\
\text{R} & \quad 3 \quad 3 \quad 2 \quad 2 \quad 2 \quad 4 \quad 3 \quad 2 \quad 3 \quad 3 \quad 3 \quad 2 \\
\text{R} & \quad (8 \text{ a c} - 24 \text{ a b c} + 4 \text{ a b c})d e + (12 \text{ a b c} - 2 \text{ a b c})d \\
\text{R} & \quad * \\
\text{R} & \quad 4 \\
\text{R} & \quad g \\
\text{R} & \quad + \\
\text{R} & \quad 4 \quad 2 \quad 3 \quad 2 \quad 2 \quad 4 \quad 4 \quad 3 \quad 3 \quad 2 \quad 2 \quad 2 \quad 3 \quad 3 \\
\text{R} & \quad (- 24 \text{ a c} + 24 \text{ a b c} - 4 \text{ a b})e - 48 \text{ a c d e} + 32 \text{ a b c d e} \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 4 \quad 4 \\
\text{R} & \quad - 24 \text{ a c d} \\
\text{R} & \quad * \\
\text{R} & \quad 3 \\
\text{R} & \quad f \ g \\
\text{R} & \quad + \\
\text{R} & \quad 3 \quad 2 \quad 2 \quad 3 \quad 5 \quad 4 \quad 3 \quad 3 \quad 3 \\
\text{R} & \quad (- 12 \text{ a b c} - 8 \text{ a b c} + 2 \text{ a b})e + 48 \text{ a c d e} \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 4 \quad 2 \quad 3 \quad 3 \quad 4 \quad 4 \\
\text{R} & \quad (16 \text{ a c} - 16 \text{ a b c})d e + 12 \text{ a b c d} \\
\text{R} & \quad * \\
\text{R} & \quad 2 \quad 2 \\
\text{R} & \quad f \ g \\
\text{R} & \quad + \\
\text{R} & \quad 3 \quad 3 \quad 2 \quad 2 \quad 2 \quad 4 \quad 4 \quad 2 \quad 3 \quad 3 \\
\text{R} & \quad (- 8 \text{ a c} + 24 \text{ a b c} - 4 \text{ a b c})e - 32 \text{ a b c d e} \\
\text{R} & \quad + \\
\text{R} & \quad 2 \quad 4 \quad 2 \quad 3 \quad 2 \quad 2 \quad 5 \quad 4 \\
\text{R} & \quad (- 16 \text{ a c} + 16 \text{ a b c})d e - 8 \text{ a c d} \\
\text{R} & \quad * \\
\text{R} & \quad 3 \\
\text{R} & \quad f \ g
\end{align*}
\[
\begin{align*}
\text{atanh}(\cdots) &= 2c x + b \\
\text{atanh}(\cdots) &= 2c x + b \\
\end{align*}
\]
\[
\begin{align*}
&\log(c \times + b \times + a) \\
&+ \quad \log(g \times + f)
\end{align*}
\]
\[
\begin{align*}
& \quad (-2a^2b^2c^2 + 2a^2b^3c + 2a^2b^4) e + (-8a^2b^3c + 4a^2b^4c - 2a^2b^5)d e \\
& \quad + \\
& \quad (-8a^2b^3c + 8a^2b^4c - 2a^2b^5)d e - 6a^2b^3c d \\
& \quad \times \\
& \quad 2 2 \\
& \quad f g \\
& \quad + \\
& \quad 2 3 2 2 4 3 2 3 4 2 3 2 2 5 4 \\
& \quad ((4a^2b^3c - 4a^2b^4c)e + 4a^2b^3c d e + (8a^2b^3c - 8a^2b^4c)d e + 4a^2b^3c d e) \\
& \quad \times \\
& \quad 3 \\
& \quad f g \\
& \quad + \\
& \quad 3 4 4 2 3 3 4 2 2 5 3 4 \\
& \quad (2a^2b^3c e + (-4a^2b^3c - 2a^2b^4)c d e + 6a^2b^3c d e - 4a^2b^3c d e) f \\
& \quad \times \\
& \quad x \\
& \quad + \\
& \quad 3 2 3 3 3 2 2 2 4 2 2 \\
& \quad (-6a^2b^3c + 2a^2b^4)d e + (4a^2b^3c + 4a^2b^4c - 2a^2b^5)d e \\
& \quad + \\
& \quad 2 2 3 3 2 3 2 2 4 3 \\
& \quad (-10a^2b^3c + 4a^2b^4c)d e + (4a^2b^3c - 2a^2b^4)c d \\
& \quad \times \\
& \quad 4 \\
& \quad g \\
& \quad + \\
& \quad 3 2 3 4 2 2 3 5 2 2 \\
& \quad (6a^2b^3c - 2a^2b^4)c e + (4a^2b^3c - 6a^2b^4c + 2a^2b^5)d e \\
& \quad + \\
& \quad 2 2 4 3 3 3 2 4 \\
& \quad (8a^2b^3c - 4a^2b^4c)d e + (-2a^2b^3c + 2a^2b^4)c d \\
& \quad \times \\
& \quad 3 \\
& \quad f g \\
& \quad + \\
& \quad 3 2 2 2 4 4 2 2 3 5 3 \\
& \quad (-4a^2b^3c - 4a^2b^4c + 2a^2b^5)e + (-4a^2b^3c + 6a^2b^4c - 2a^2b^5)d e \\
& \quad + \\
& \quad 3 3 2 3 4 2 3 4 \\
& \quad (-12a^2b^3c + 6a^2b^4c)d e + (4a^2b^3c - 4a^2b^4c)d \\
& \quad \times \\
& \quad 2 2 \\
& \quad f g \\
& \quad +
\end{align*}
\]
\[\begin{align*}
&22342243 \\
&\quad (10a \ b \ c - 4a \ b \ c)e + (-8a \ b \ c + 4b \ c)d \ e \\
&\quad + \\
&\quad 3322244 \\
&\quad (12a \ b \ c - 6b \ c)de + 2b \ c \ d \\
&\quad * \\
&\quad 3 \\
&\quad f \ g \\
&\quad + \\
&\quad 232243323 \\
&\quad (-4a \ c + 2a \ b \ c)e + (2a \ b \ c - 2b \ c)d \ e \\
&\quad + \\
&\quad 4322243 \\
&\quad (-4a \ c + 4b \ c)de - 2b \ c \ d \ e \\
&\quad * \\
&\quad 4 \\
&\quad f \\
&\quad * \\
&\quad +----------+ \\
&\quad | 2 \\
&\quad \mid - 4a \ c + b \\
&\quad / \\
&\quad 52424423333 \\
&\quad (8a \ c - 2a \ b \ c)d \ e + (-16a \ b \ c + 4a \ b \ c)d \ e \\
&\quad + \\
&\quad 43322243323 \\
&\quad (16a \ c + 4a \ b \ c - 2a \ b \ c)d \ e + (-16a \ b \ c + 4a \ b \ c)d \ e \\
&\quad + \\
&\quad 342235 \\
&\quad (8a \ c - 2a \ b \ c)d \\
&\quad * \\
&\quad 5 \\
&\quad g \\
&\quad + \\
&\quad 52425433222423 \\
&\quad (-8a \ c + 2a \ b \ c)e + (-16a \ c + 28a \ b \ c - 6a \ b \ c)d \ e \\
&\quad + \\
&\quad 33232532 \\
&\quad (-16a \ b \ c - 12a \ b \ c + 4a \ b \ c)d \ e \\
&\quad + \\
&\quad 3422342424335 \\
&\quad (-8a \ c + 34a \ b \ c - 8a \ b \ c)d \ e + (-16a \ b \ c + 4a \ b \ c)d \\
&\quad * \\
&\quad 4 \\
&\quad f \ g \\
&\quad + \\
&\quad 4233543322244 \\
&\quad (16a \ b \ c - 4a \ b \ c)e + (16a \ c - 28a \ b \ c + 6a \ b \ c)d \ e \\
&\quad + \\
&\quad 3422342632 \\
\end{align*}\]
\[\begin{align*}
&\ (32a \ c - 8a \ b \ c + 8a \ b \ c - 2b \ c) \ d \ e \\
+&\ (16a \ b \ c - 12a \ b \ c + 4b \ c) \ d \ e + (16a \ c + 4a \ b \ c - 2b \ c) \ d \\
* &\ 2 \ 3 \\
&\ f \ g \\
+ &\ 4 \ 3 \ 3 \ 2 \ 2 \ 2 \ 4 \ 5 \\
- &\ (16a \ c - 4a \ b \ c + 2a \ b \ c) e \\
+ &\ 3 \ 3 \ 2 \ 3 \ 2 \ 5 \\
&\ (16a \ b \ c + 12a \ b \ c - 4a \ b \ c) \ d \ e \\
- &\ 3 \ 4 \ 2 \ 3 \ 2 \ 5 \\
&\ (16a \ b \ c + 8a \ b \ c - 8a \ b \ c + 2b \ c) \ d \ e \\
+ &\ 2 \ 5 \ 2 \ 4 \ 4 \ 3 \ 4 \ 5 \\
&\ (16a \ b \ c + 28a \ b \ c - 6b \ c) \ d \ e + (16a \ b \ c + 4b \ c) \ d \\
* &\ 3 \ 2 \\
&\ f \ g \\
+ &\ 3 \ 3 \ 2 \ 3 \ 2 \ 5 \\
&\ (16a \ b \ c + 4a \ b \ c + 8a \ b \ c) \ e \\
+ &\ 2 \ 4 \ 3 \ 3 \ 5 \ 2 \ 3 \\
&\ (16a \ b \ c + 12a \ b \ c - 4b \ c) \ d \ e \\
+ &\ 2 \ 5 \ 2 \ 4 \ 4 \ 3 \ 3 \ 2 \\
&\ (16a \ c - 28a \ b \ c + 6b \ c) \ d \ e + (8a \ c - 2b \ c) \ d \\
* &\ 4 \\
&\ f \ g \\
+ &\ 3 \ 4 \ 2 \ 2 \ 3 \ 5 \\
&\ (8a \ c + 2a \ b \ c) e + (16a \ b \ c - 4a \ b \ c) \ d \ e \\
+ &\ 2 \ 5 \ 2 \ 4 \ 4 \ 3 \ 3 \ 2 \\
&\ (16a \ c - 4a \ b \ c + 2b \ c) \ d \ e + (16a \ b \ c - 4b \ c) \ d \ e \\
* &\ 6 \ 2 \ 5 \ 4 \\
&\ (16a \ c - 2b \ c) \ d \ e \\
* &\ 5 \\
&\ f \\
* &\ 2 \\
&\ x \\
+ &\ 392
\end{align*}\]
\[\begin{align*}
5 & 4 3 4 4 2 3 4 2 3 \\
+ & (8a b c - 2a b )d e + (- 16a b c + 4a b )d e \\
+ & 4 2 3 3 2 5 3 2 3 2 2 2 4 4 \\
& (16a b c + 4a b c - 2a b )d e + (- 16a b c + 4a b c)d e \\
+ & 3 3 2 3 2 5 \\
& (8a b c - 2a b c )d \\
\times & 5 \\
g & 5 \\
+ & 5 4 3 5 4 2 3 3 2 5 2 3 \\
& (- 8a b c + 2a b )e + (- 16a b c + 28a b c - 6a b )d e \\
+ & 3 2 2 2 4 6 3 2 \\
& (- 16a b c - 12a b c + 4a b )d e \\
+ & 3 3 2 3 2 5 4 2 2 3 4 2 5 \\
& (- 8a b c + 34a b c - 8a b c)d e + (- 16a b c + 4a b c )d \\
\times & 4 \\
f g & 4 \\
+ & 4 2 3 4 5 4 2 3 3 2 5 4 \\
& (16a b c - 4a b )e + (16a b c - 28a b c + 6a b )d e \\
+ & 3 3 2 3 2 5 7 3 2 \\
& (32a b c - 8a b c + 8a b c - 2b )d e \\
+ & 2 2 3 4 2 6 4 \\
& (- 16a b c - 12a b c + 4b c)d e \\
+ & 2 4 3 3 5 2 5 \\
& (16a b c + 4a b c - 2b c )d \\
\times & 2 3 \\
f g & 2 \\
+ & 4 2 3 3 2 5 5 \\
& (- 16a b c - 4a b c + 2a b )e \\
+ & 3 2 2 2 4 6 4 \\
& (16a b c + 12a b c - 4a b )d e \\
+ & 3 3 2 3 2 5 7 2 3 \\
& (- 32a b c + 8a b c - 8a b c + 2b )d e \\
+ & 2 4 3 3 5 2 4 \\
& (16a b c + 28a b c - 6b c )d e + (- 16a b c + 4b c )d \\
\end{align*}\]
\[
R f g + 3 2 2 2 4 5 3 3 2 3 2 5 4
\]
\[
(16a b c - 4a b c) e + (8a b c - 34a b c + 8a b c) d e + 2 2 3 4 2 6 2 3
\]
\[
(16a b c + 12a b c - 4b c) d e + 2 4 3 3 5 2 3 2 5 3 4 5
\]
\[
(16a b c - 28a b c + 6b c) d e + (8a b c - 2b c) d
g + 4
\]
\[
(16a b c - 2 a b c) e + (16a b c - 4 a b c) d e + 2 4 3 3 5 2 2 3 4 3 2
\]
\[
(-16a b c - 4a b c + 2b c) d e + (16a b c - 4b c) d e + 5 3 4 4
\]
\[
(-8a b c + 2b c) d e + 5
\]
\[
f\]
\[
* x + 6 5 2 4 5 4 3 2 3
\]
\[
(8a c - 2a b) d e + (-16a b c + 4a b) d e + 5 2 4 2 3 4 3 2
\]
\[
(16a c + 4a b c - 2a b) d e + (-16a b c + 4a b c) d e + 4 3 3 2 5
\]
\[
(8a c - 2a b c) d + 5
\]
\[
g\]
\[
* x + 6 5 2 5 5 2 4 2 3 4 2 3
\]
\[
(-8a c + 2a b) e + (-16a c + 28a b c - 6a b) d e + 4 2 3 3 2 5
\]
\[
(-16a b c - 12a b c + 4a b) d e + 4 3 3 2 2 2 4 4 3 3 2 3 2 5
\]
\[
(-8a c + 34a b c - 8a b c) d e + (-16a b c + 4a b c) d
g * 5
\]
\[
5
\]
394
\[ \begin{aligned} &\text{--R} \\
&\text{--R} * \\
&\text{--R} 4 \\
&\text{--R} f g \\
&\text{--R} + \\
&\text{--R} 5 4 3 5 5 2 4 2 3 4 4 \\
&\text{--R} (16a b c - 4a b )e + (16a c - 28a b c + 6a b )d e \\
&\text{--R} + \\
&\text{--R} 4 3 3 2 2 2 4 6 3 2 \\
&\text{--R} (32a c - 8a b c + 8a b c - 2a b )d e \\
&\text{--R} + \\
&\text{--R} 3 3 2 3 2 5 4 3 4 2 2 3 4 2 5 \\
&\text{--R} (- 16a b c - 12a b c + 4a b c)d e + (16a c + 4a b c - 2a b c )d \\
&\text{--R} * \\
&\text{--R} 2 3 \\
&\text{--R} f g \\
&\text{--R} + \\
&\text{--R} 5 2 4 2 3 4 5 4 2 3 3 2 5 4 \\
&\text{--R} (- 16a c - 4a b c + 2a b )e + (16a b c + 12a b c - 4a b )d e \\
&\text{--R} + \\
&\text{--R} 4 3 3 2 2 2 4 6 2 3 \\
&\text{--R} (- 32a c + 8a b c - 8a b c + 2a b )d e \\
&\text{--R} + \\
&\text{--R} 3 4 2 2 3 4 2 4 2 4 3 3 5 \\
&\text{--R} (- 16a c + 28a b c - 6a b c)d e + (- 16a b c + 4a b c )d \\
&\text{--R} * \\
&\text{--R} 3 2 \\
&\text{--R} f g \\
&\text{--R} + \\
&\text{--R} 4 2 3 3 5 4 3 3 2 2 2 4 4 \\
&\text{--R} (16a b c - 4a b c)e + (8a c - 34a b c + 8a b c)d e \\
&\text{--R} + \\
&\text{--R} 3 3 2 3 2 5 2 3 \\
&\text{--R} (16a b c + 12a b c - 4a b c)d e \\
&\text{--R} + \\
&\text{--R} 3 4 2 2 3 4 2 3 2 2 5 2 4 5 \\
&\text{--R} (16a c - 28a b c + 6a b c)d e + (8a c - 2a b c )d \\
&\text{--R} * \\
&\text{--R} 4 \\
&\text{--R} f g \\
&\text{--R} + \\
&\text{--R} 4 3 3 2 2 5 3 3 2 3 2 4 \\
&\text{--R} (- 8a c + 2a b c )e + (16a b c - 4a b c )d e \\
&\text{--R} + \\
&\text{--R} 3 4 2 2 3 4 2 3 2 2 4 3 3 2 \\
&\text{--R} (- 16a c - 4a b c + 2a b c )d e + (16a b c - 4a b c )d e \\
&\text{--R} + \\
&\text{--R} 2 5 2 4 4 \\
&\text{--R} (- 8a c + 2a b c )d e \\
&\text{--R} * \\
&\text{--R} 5 \\
\end{aligned} \]
\( \frac{\sqrt{a+b*x+c*x^2}}{(d+e*x)*(f+g*x)} \)

\[
\begin{align*}
\text{clear all} \\
\text{d0:=D(m0,x)}
\end{align*}
\]

\[
\begin{align*}
t0:= & \frac{\sqrt{a+b*x+c*x^2}}{(d+e*x)*(f+g*x)} \\
\text{r0:=} & \frac{\text{atanh}\left(\frac{b+2*c*x}{\sqrt{c}}\right)\sqrt{c}}{(d*g-e*f)} + \frac{\text{atanh}\left(\frac{b*d-2*a*e+(2*c*d-b*e)*x}{\sqrt{c*d^2-b*d*e+a*e^2}}\right)\sqrt{c*d^2-b*d*e+a*e^2}}{(e*(e*f-d*g))} + \frac{\text{atanh}\left(\frac{b*f-2*a*g+(2*c*f-b*g)*x}{\sqrt{c*f^2-b*f*g+a*g^2}}\right)\sqrt{c*f^2-b*f*g+a*g^2}}{(g*(e*f-d*g))} \\
\end{align*}
\]
\[-2/2 (b g - c f) x + 2 a g - b f\]
\[-e \frac{a g - b f}{g + c f} \text{ atanh} \left( \frac{2 a g - b f}{c x + b x + a} \right) / \]
\[-d e g - e f g\]

\[\text{Type: Expression(Integer)}\]

\[-2/2 \left( \frac{c x + b x + a}{c x + b x + a} \right) \text{ atan}\left( \frac{b + 2 c x}{\sqrt{c}} \right) / \left( e g^2 (e e f - d g) \right) \]

\[-\frac{1}{4} (4 c a e f^2 g + (5 b e f - b d g - 4 a e e g) - 2 c g (e e f - d g) x) * \]
\[-\text{sqrt}(a + b x + c x^2) / (e g^2 (e e f - d g))\]

\[\text{Type: Expression(Integer)}\]

\[-2/2 \left( 12 a c + 3 b d e + a e^2 \right) d e - 12 b c d e + 8 c d \right) e f g + (- 12 a c - 3 b) e f g\]
\[-d e g - e f g\]
\[
\frac{2c x + b}{\sqrt{a e - b d e + c d}} + \frac{(b e - 2c d)x + 2a e - b d}{\sqrt{a e - b d e + c d}} + \frac{2\sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(8a e - 8b d e + 8c d)g \sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(b e - 2c d)x + 2a e - b d}{\sqrt{a e - b d e + c d}} + \frac{2\sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(8a e - 8b d e + 8c d)g \sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(b e - 2c d)x + 2a e - b d}{\sqrt{a e - b d e + c d}} + \frac{2\sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(8a e - 8b d e + 8c d)g \sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(b e - 2c d)x + 2a e - b d}{\sqrt{a e - b d e + c d}} + \frac{2\sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(8a e - 8b d e + 8c d)g \sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(b e - 2c d)x + 2a e - b d}{\sqrt{a e - b d e + c d}} + \frac{2\sqrt{a e - b d e + c d}}{c x + b x + a} + \frac{(8a e - 8b d e + 8c d)g \sqrt{a e - b d e + c d}}{c x + b x + a}
\]

Type: Expression(Integer)
\begin{align*}
(1) \quad & \frac{2}{\sqrt{c x + b x + a}} \left( c x + 2 b c x + (2a + b c x + 2a b x + a) \right) \right) \frac{\sqrt{c x + b x + a}}{e g x + (d g + e f) x + d f}
\end{align*}

\text{Type: Expression(Integer)}

\text{Type: Expression(Integer)}
\[ \frac{2c x + b}{2c x + b} + \frac{(b e - 2c d)x + 2a e - b d}{a g - b f g + c f} \]

\[ \frac{384a c e - 768b c d e + (768a c + 384b c)d e - 768b c d e}{2 \frac{a e - b d e + c d}{c x + b x + a}} \]

\[ \frac{384 c d}{384 c d} \]

\[ \frac{5}{2 a e - b d e + c d} \]

\[ \frac{(b e - 2c d)x + 2a e - b d}{a g - b f g + c f} \]

\[ \frac{768b c e f g - 384c e f}{2 \frac{a g - b f g + c f}{c x + b x + a}} \]

\[ (96c d e g - 96c e f g)x \]

\[ ((272b c d e - 128c d e)g - 272b c e f g + 128c e f g)x \]

\[ (((432a c + 236b c)d e - 416b c d e + 192c d e)g + ((432a c - 236b c)e f g + 416b c e f g - 192c e f g)x \]

\[ \frac{345343}{345343} \]

400
\[
\begin{align*}
& (1112a \, b \, c + 30b) \, d \, e + (-896a \, c - 528b \, c)d \, e + 864b \, c \, d \, e \\
& + 3 \, 4 \\
& - 384c \, d \, e \\
& * \\
& 5 \\
& g \\
& + \\
& 3 \, 5 \, 4 \\
& 2 \, 2 \, 5 \, 2 \, 3 \\
& 2 \, 5 \, 3 \, 2 \\
& (-1112a \, b \, c - 30b) \, e \, f \, g + (896a \, c + 528b \, c)e \, f \, g - 864b \, c \, e \, f \, g \\
& + 3 \, 5 \, 4 \\
& 384c \, e \, f \, g \\
& * \\
& +------------------- \\
& \|c \|c x + b x + a \\
& / \\
& 5 \, 6 \, 6 \, 5 \\
& (384c \, d \, e \, g - 384c \, e \, f \, g) \|c \\
\end{align*}
\]
\[
(d+e*x)^m*\text{hypergeometric}(1/2,-m,3/2,e*(e+f*x)/(e^2-d*f))*\sqrt{e+f*x}/(e*f^3*(e^2-d*f)*(3+2*m)*(-f*(d+e*x)/(e^2-d*f))^m)
\]

-- E 1004

-- S 1005 of 1035
-- d0:=D(m0,x)
-- E 1005

)clear all

-- S 1006 of 1035
t0:=(d+e*x)^3*(a+b*x+c*x^2)/(e+f*x)^(3/2)

-- R

-- R

-- R (1)

-- R 3 5 3 2 4 3 2 2 3

-- R c e x + (b e + 3c d e )x + (a e + 3b d e + 3c d e)x

-- R +

-- R 2 2 3 2 2 3 3

-- R (3a d e + 3b d e + c d)x + (3a d e + b d)x + a d

-- R /

-- R +-----------------

-- R (f x + e)\|\|f x + e

-- R Type: Expression(Integer)

-- E 1006

-- S 1007 of 1035

r0:=2/3*(e^2-d*f)*(3*e*f*(2*b*e^2-b*d*f-a*e*f)-c*(10*e^4-8*d*e^2*f+_
 d^2-f^2))/(e+f*x)^(3/2)/(e+f*x)^(3/2)/f^6-2/5*e*(e*f*(4*b*e^2-b*d*f-a*e*f)-_
 c*(10*e^4-12*d*e^2*f+3*d^2-f^2))*(e+f*x)^(5/2)/(f^6-2*(5+e^2-2-_
 3*c*d+f-b*e*e*f)*(e+f*x)^(7/2)/(f^6+2/3*c*e^3*(e+f*x)^(9/2)/(f^6+_
 2*(e^2-d*f)^2)*(c*e^2-f*(b*e-a*f))/(f^6*sqrt(e+f*x))-2*(e^2-d*f)^2_
 (*f*(4*b*e^2-b*d*f-3*a*e*f)-c*(5*e^3-3-2*d*e*f))*)sqrt(e+f*x)/f^6

-- R

-- R

-- R (2)

-- R 3 5 5 3 2 5 4 4 4

-- R 70c e f x + ((90b e + 270c d e )f - 100c e f)x

-- R +

-- R 3 2 2 5 4 3 4

-- R (126a e + 378b d e + 378c d e)f + (- 144b e - 432c d e )f

-- R +

-- R 5 3

-- R 160c e f

-- R *

-- R 3

-- R x

-- R +

-- R 2 2 3 5

-- R (630a d e + 630b d e + 210c d e)f

402
t0 := (d + e*x)^2*(a + b*x + c*x^2)/(e + f*x)^(3/2)

Type: Expression(Integer)
\( c \, e \, x \, + \, (b \, e \, + \, 2c \, d \, e) \, x \, + \, (a \, e \, + \, 2b \, d \, e \, + \, c \, d) \, x \, + \, (2a \, d \, e \, + \, b \, d) \, x \)
\( + \)
\( 2 \)
\( a \, d \)
\( / \)
\( \)
\( (f \, x \, + \, e) \| f \, x \, + \, e \)

Type: Expression(Integer)

---

\( r_0 := -2/3*(e*f^3*3*b*e^2-2*b*d*f-a*e*f)-c*(6*e^4-6*d*e^2*f+d^2*f^2)*_{(e+f*x)}-(3/2)/f^5-2/5*e*(4*c*e^2-2*c*d*f-b*e*f)*(e+f*x)_{(e+f*x)}+(5/2)/f^5+_{ 2/7*c*e^2*(e+f*x)}_{(7/2)}/f^5-5-2*(e^2-d*f)*_{(e+f*x)}_{(e+f*x)}_{(c*e^2-2-f*(b*c*3*a*f))}/_{ (f^5*sqrt(e+f*x))_{(e+f*x)}}_{(e+f*x)}_{(e+f*x)/(f^5)}}

---

\( d_0 := \text{normalize}(t_0-D(r_0,x)) \)
\[ t_0 := \frac{(d+e*x)(a+b*x+c*x^2)}{(e+f*x)^{3/2}} \]

\[ r_0 := -\frac{2}{3} \left( 3c*e^2 - 2c*d*f - b*e*f \right) (e+f*x)^{3/2} / f^4 + 2/5 c*e (e+f*x)^{5/2} / f^4 + 2(e^2-d*f)(c*e^2-f*(b*e-a*f))/(f^4*sqrt(e+f*x)) - 2*(f*(2*b*e^2-b*d*f-a*e*f)-c*(3*e^3-2*d*e*f))*sqrt(e+f*x)/f^4 \]

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]
\[ t_0 := \frac{a + b \cdot x + c \cdot x^2}{(e + f \cdot x)^{3/2}} \]

Type: Expression(Integer)

\[ r_0 := \frac{2}{3} c \cdot (e + f \cdot x)^{3/2}/f^3 - \frac{2 \cdot (c \cdot e^2 - f \cdot (b \cdot e - a \cdot f))/f^3 \cdot \sqrt{(e + f \cdot x)}}{f^3 \cdot \sqrt{(e + f \cdot x)}} - \frac{2 \cdot (2 \cdot c \cdot e - b \cdot f) \cdot \sqrt{(e + f \cdot x)}}{f^3} \]

Type: Expression(Integer)

\[ d_0 := \text{normalize}(t_0 - D(r_0, x)) \]

Type: Expression(Integer)

\[ t_0 := \frac{a + b \cdot x + c \cdot x^2}{((d + e \cdot x) \cdot (e + f \cdot x)^{3/2})} \]

Type: Expression(Integer)

\[ r_0 := -\frac{2 \cdot (c \cdot d^2 - b \cdot d \cdot e + a \cdot e^2) \cdot \text{atanh} (\sqrt{(e)} \cdot \sqrt{(e + f \cdot x)})}{406} \]
\[(e^{3/2}*(e^{2-d*f})^{3/2})+2*(c*e^2-f*(b*e-a*f))/(f^2*(e^2-d*f)*sqrt(e+f*x))+2*c*sqrt(e+f*x)/(e*f^2)\]

---

\[\text{Type: Expression(Integer)}\]

---

\[d0:=\text{normalize}(t0-D(r0,x))\]

---

\[\text{Type: Expression(Integer)}\]

---

\[t0:=(a+b*x+c*x^2)/((d+e*x)^2*(e+f*x)^{3/2})\]

---

\[\text{Type: Expression(Integer)}\]

---

\[r0:=(c*d^2-b*d*e+a*e^2)*f*atanh(sqrt(e)*sqrt(e+f*x)/sqrt(e^2-d*f))/\]

\[\text{(e}^{3/2}*(e^{2-d*f})^{5/2})-2*(e^2*(b*e-a*f)-c*d*(2*e^2-d*f))*_\]

\[407\]
\[
\text{atanh}(\sqrt{e}\sqrt{e+f(x)})/(e^{(3/2)}(e^{2-d*f})^{(5/2)}) - \\
2*(c*e^{2-f}*(b*e-a*f))/(f*(e^{2-d*f})^{2}*\sqrt{e+f(x)}) + (c*d^{2}-b*d*e+a*e^{2})* \\
f*\sqrt{e+f(x)}/(e*(e^{2-d*f})^{2}*(e^{2-d*f}=e^{(e+f*x)})
\]

\[\text{---R} \]
\[\text{---R (2)} \]
\[\text{---R } 3 2 2 2 4 3 \]
\[\text{---R } + \]
\[\text{---R } 2 2 3 2 \]
\[\text{---R } (3a \, d \, e - b \, d \, e - c \, d \, e)f + (- 2b \, d \, e + 4c \, d \, e)f  \\
\text{---R } * \]
\[\text{---R } + \]
\[\text{---R } 2 2 3 4 2 \]
\[\text{---R } ((- 3a \, e + b \, d \, e - c \, d \, e)f + 2b \, e \, f - 2c \, e)x - 2a \, d \, e \\
\text{---R } * \]
\[\text{---R } + \]
\[\text{---R } 3 2 2 3 \]
\[\text{---R } (- a \, e + 3b \, d \, e - c \, d \, e)f - 2c \, d \, e \\
\text{---R } * \]
\[\text{---R } + \]
\[\text{---R } \]
\[\text{---R } 2 2 3 4 2 \]
\[\text{---R } ((d \, e \, f - 2d \, e \, f + e \, f)x + d \, e \, f - 2d \, e \, f + d \, e \, f)\text{-d \, f + e } \\
\text{---R } * \]
\[\text{---R } + \]
\[\text{---R } \]
\[\text{Type: Expression(Integer)} \]

---E 1022

---S 1023 of 1035

d0:=normalize(t0-D(r0,x))

---R

---R (3) 0

---R

---E 1023

)clear all

---S 1024 of 1035
t0:=(a+b*x+c*x^2)/(d+e*x)^3*(e+f*x)^(3/2))
\[
\frac{c \cdot x + b \cdot x + a}{(e \cdot f \cdot x + (3d \cdot e \cdot f + e) \cdot x + (3d \cdot e \cdot f + 3d \cdot e) \cdot x + (d \cdot f + 3d \cdot e) \cdot x + d \cdot e) \cdot x + d \cdot e}
\]

\[
(r0 := -3/4 \cdot (c \cdot d^2 \cdot b \cdot d \cdot e + a \cdot e^2) \cdot f^2 \cdot \text{atanh}(\sqrt{e} \cdot \sqrt{e + f \cdot x}) / \sqrt{e^2 - d \cdot f}) / (e^{3/2} \cdot (e^2 - d \cdot f)^{7/2}) + f \cdot (e^2 \cdot (b \cdot e - a \cdot f) - c \cdot d \cdot (2 \cdot e^2 - d \cdot f)) \cdot \text{atanh}(\sqrt{e} \cdot \sqrt{e + f \cdot x}) / (e^{3/2} \cdot (e^2 - d \cdot f)^{7/2}) - 2 \cdot (c \cdot e^2 - f \cdot (b \cdot e - a \cdot f)) \cdot \text{atanh}(\sqrt{e} \cdot \sqrt{e + f \cdot x}) / (e^{3/2} \cdot (e^2 - d \cdot f)^{7/2}) + 2 \cdot (c \cdot e^2 - f \cdot (b \cdot e - a \cdot f)) / ((e^2 - d \cdot f)^3 \cdot \sqrt{e + f \cdot x}) - 1/2 \cdot (c \cdot d^2 \cdot b \cdot d \cdot e + a \cdot e^2) \cdot f^2 \cdot \sqrt{e + f \cdot x} / (e \cdot (e^2 - d \cdot f)^2 \cdot (e^2 - d \cdot f - e \cdot (e + f \cdot x))^2) - 3/4 \cdot (c \cdot d^2 \cdot b \cdot d \cdot e + a \cdot e^2) \cdot f^2 \cdot \sqrt{e + f \cdot x} / (e \cdot (e^2 - d \cdot f)^3 \cdot (e^2 - d \cdot f - e \cdot (e + f \cdot x)))
\]
\[
\begin{align*}
&+ \quad 2 \quad 2 \quad 3 \quad 2 \quad 4 \quad 3 \quad 2 \quad 2 \\
&+ \quad -25a \quad d \quad e \quad + \quad 5b \quad d \quad e \quad - \quad c \quad d \quad )f \quad + \quad (- \quad 5a \quad e \quad + \quad 21b \quad d \quad e \quad - \quad 5c \quad d \quad e \quad )f \\
&+ \quad 5 \quad 4 \\
&4b \quad e \quad - \quad 24c \quad d \quad e \\
&* \quad x \\
&+ \quad 2 \quad 2 \quad 3 \quad 2 \quad 2 \quad 3 \quad 5 \quad 4 \\
&- \quad 8a \quad d \quad e \quad f \quad + \quad (- \quad 9a \quad d \quad e \quad + \quad 13b \quad d \quad e \quad - \quad c \quad d \quad e \quad )f \quad + \quad 2a \quad e \quad + \quad 2b \quad d \quad e \\
&+ \quad 2 \quad 3 \\
&- \quad 14c \quad d \quad e \\
&* \quad +----------+ \\
&\quad | \quad 2 \quad +-- \\
&\quad \\|\quad d \quad f \quad + \quad e \quad \\|e \\
&/ \quad 3 \quad 3 \quad 3 \quad 2 \quad 5 \quad 2 \quad 7 \quad 9 \quad 2 \\
&\quad (4d \quad e \quad f \quad - \quad 12d \quad e \quad f \quad + \quad 12d \quad e \quad f \quad - \quad 4e \quad )x \\
&+ \quad 4 \quad 2 \quad 3 \quad 3 \quad 4 \quad 2 \quad 2 \quad 6 \quad 8 \quad 5 \quad 3 \quad 4 \quad 3 \quad 2 \quad 3 \quad 5 \\
&\quad (8d \quad e \quad f \quad - \quad 24d \quad e \quad f \quad + \quad 24d \quad e \quad f \quad - \quad 8d \quad e \quad )x \quad + \quad 4d \quad e \quad f \quad - \quad 12d \quad e \quad f \quad + \quad 12d \quad e \quad f \\
&+ \quad 2 \quad 7 \\
&- \quad 4d \quad e \\
&* \quad +----------+ \\
&\quad | \quad 2 \quad +-- +----------+ \\
&\quad \\|\quad d \quad f \quad + \quad e \quad \\|e \quad \|f \quad x \quad + \quad e \\
\end{align*}
\]
--R (1) ---------------
--R a x + 1
--R Type: Expression(Integer)
--E 1027

--S 1028 of 1035
--r0:=x^(1+m)*AppellF1(1+m,-p,1-p,2+m,a*x,-a*x)/(1+m)
--E 1028

--S 1029 of 1035
--d0:=D(m0,x)
--E 1029

)clear all

--S 1030 of 1035
t0:=sqrt(-1+x)*sqrt(1+x)/(1+x-x^2)
--R
--R
--R +-----+ +-----+
--R \|x - 1 \|x + 1
--R (1) - ----------------
--R 2
--R x - x - 1
--R Type: Expression(Integer)
--E 1030

--S 1031 of 1035
r0:=-acosh(x)-atan(sqrt(-1+x)*sqrt(-2+sqrt(5))/sqrt(1+x))*sqrt(2/5*(-1+sqrt(5)))+atanh(sqrt(-1+x)*sqrt(2+sqrt(5))/sqrt(1+x))*sqrt(2/5*(1+sqrt(5)))
--R
--R
--R (2)
--R +--------+
--R +---------+ +-----+ | +-+
--R | +-+ \|x - 1 \|5 + 2
--R \|2\|5 + 2 atanh(--------------------)
--R +-----+
--R \|x + 1
--R +
--R +--------+
--R +---------+ +-----+ | ++
--R | ++ \|x - 1 \\|5 - 2 ++
--R \|2\|5 - 2 atan(-------------------) - \|5 acosh(x)
--R +-----+
--R \|x + 1
--R /
--R ++
--R \|5

411
\[ r_0 = \frac{-b}{2} \left( e^x \right)^{3/2} \frac{d + e x}{f + g x} \]

\[ t_0 = \frac{a + b x + c x^2}{\sqrt{d + e x} \sqrt{f + g x}} \]

\[ d_0 := D(m_0, x) \]
--E 1035

)spool
)lisp (bye)
References

[1] nothing