$SPAD/src/input richlog200-299.input

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Abstract

Contents

```
                 ___ * ___

)set break resume
)sys rm -f richlog200-299.output
)spool richlog200-299.output
)set message auto off
)clear all

--S 1 of 514
t0200:= log(c*(a+b*x)^n)^2/x^2
--R
--R
--R                      n 2
--R         log(c (b x + a) )
--R   (1)   ------------------
--R                 2
--R                x
--R                                          Type: Expression(Integer)
--E 1

--S 2 of 514
r0200:= 2*b*n*log(-b*x/a)*log(c*(a+b*x)^n)/a-(a+b*x)*log(c*(a+b*x)^n)^2/a/x+_
        2*b*n^2*polylog(2,1+b*x/a)/a
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                     Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 2

--S 3 of 514
a0200:= integrate(t0200,x)
--R
--R
--R           x                 n 2
--R          ++  log(c (%I b + a) )
--R   (2)    |   ------------------ d%I
--R          ++            2
--R                       %I
--R                                          Type: Union(Expression(Integer),...)
```

```
--E 3

--S 4 of 514
--m0200:= a0200-r0200
--E 4

--S 5 of 514
--d0200:= D(m0200,x)
--E 5

--S 6 of 514
t0201:= log(c*(a+b*x)^n)^2/x^3
--R
--R
--R                     n 2
--R        log(c (b x + a) )
--R  (3)   ------------------
--R                3
--R               x
--R                                             Type: Expression(Integer)
--E 6

--S 7 of 514
r0201:= b^2*n^2*log(x)/a^2-b^2*n^2*log(a+b*x)/a^2-b*n*log(c*(a+b*x)^n)/a/x-_
        b^2*n*log(-b*x/a)*log(c*(a+b*x)^n)/a^2+1/2*b^2*_
        log(c*(a+b*x)^n)^2/a^2-1/2*log(c*(a+b*x)^n)^2/x^2-_
        b^2*n^2*polylog(2,1+b*x/a)/a^2
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                             PositiveInteger
--R                    Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 7

--S 8 of 514
a0201:= integrate(t0201,x)
--R
--R
--R           x                n 2
--R        ++  log(c (%I b + a) )
--R  (4)   |  ------------------- d%I
```

```
--R           ++              3
--R                         %I
--R                                          Type: Union(Expression(Integer),...)
--E 8


--S 9 of 514
--m0201:= a0201-r0201
--E 9


--S 10 of 514
--d0201:= D(m0201,x)
--E 10


--S 11 of 514
t0202:= x*log(c*(a+b*x)^n)^3
--R
--R
--R                         n 3
--R    (5)  x log(c (b x + a) )
--R                                          Type: Expression(Integer)
--E 11


--S 12 of 514
r0202:= 21/4*a*n^3*x/b-3/8*n^3*x^2-3/4*a^2*n^3*log(a+b*x)/b^2+_
        3/4*n^2*x^2*log(c*(a+b*x)^n)-9/2*a*n^2*(a+b*x)*log(c*(a+b*x)^n)/b^2-_
        3/4*n*x^2*log(c*(a+b*x)^n)^2+9/4*a*n*(a+2/3*b*x)*_
        log(c*(a+b*x)^n)^2/b^2-1/2*a^2*log(c*(a+b*x)^n)^3/b^2+_
        1/2*x^2*log(c*(a+b*x)^n)^3
--R
--R
--R    (6)
--R         2 2     2               n 3
--R       (4b x  - 4a )log(c (b x + a) )
--R     +
--R          2   2                2               n 2
--R       (- 6b n x  + 12a b n x + 18a n)log(c (b x + a) )
--R     +
--R         2 2 2        2      2 2              n      2 3
--R       (6b n x  - 36a b n x - 36a n )log(c (b x + a) ) - 6a n log(b x + a)
--R     +
--R          2 3 2          3
--R       - 3b n x  + 42a b n x
--R  /
--R         2
--R      8b
--R                                          Type: Expression(Integer)
--E 12


--S 13 of 514
a0202:= integrate(t0202,x)
```

5

```
--R
--R
--R   (7)
--R          2 3 2     2 3             3
--R        (4b n x  - 4a n )log(b x + a)
--R     +
--R            2 2 2      2 2              2 3 2        3       2 3            2
--R        ((12b n x  - 12a n )log(c) - 6b n x  + 12a b n x + 18a n )log(b x + a)
--R     +
--R             2 2     2        2        2 2 2        2       2 2
--R           (12b n x  - 12a n)log(c)  + (- 12b n x  + 24a b n x + 36a n )log(c)
--R        +
--R             2 3 2          3       2 3
--R           6b n x  - 36a b n x - 42a n
--R       *
--R         log(b x + a)
--R     +
--R        2 2      3        2   2                  2
--R      4b x log(c)  + (- 6b n x  + 12a b n x)log(c)
--R     +
--R          2 2 2       2        2 3 2          3
--R        (6b n x  - 36a b n x)log(c) - 3b n x  + 42a b n x
--R  /
--R        2
--R     8b
--R                                         Type: Union(Expression(Integer),...)
--E 13

--S 14 of 514
m0202:= a0202-r0202
--R
--R
--R   (8)
--R           2 2     2                  n 3
--R        (- 2b x  + 2a )log(c (b x + a) )
--R     +
--R        2   2                2               n 2
--R      (3b n x  - 6a b n x - 9a n)log(c (b x + a) )
--R     +
--R          2 2 2       2       2 2               n
--R        (- 3b n x  + 18a b n x + 18a n )log(c (b x + a) )
--R     +
--R         2 3 2     2 3         3
--R        (2b n x  - 2a n )log(b x + a)
--R     +
--R          2 2 2     2 2            2 3 2        3       2 3           2
--R        ((6b n x  - 6a n )log(c) - 3b n x  + 6a b n x + 9a n )log(b x + a)
--R     +
--R            2   2     2       2        2 2 2       2       2 2
--R           (6b n x  - 6a n)log(c)  + (- 6b n x  + 12a b n x + 18a n )log(c)
```

6

```
--R         +
--R            2 3 2          3        2 3
--R         3b n x  - 18a b n x - 18a n
--R      *
--R         log(b x + a)
--R     +
--R       2 2      3       2 2                 2    2 2 2          2
--R     2b x log(c)  + (- 3b n x + 6a b n x)log(c)  + (3b n x  - 18a b n x)log(c)
--R  /
--R      2
--R    4b
--R                                             Type: Expression(Integer)
--E 14

--S 15 of 514
d0202:= D(m0202,x)
--R
--R
--R  (9)
--R          2 2                  n             n 3
--R      (- 4b x  - 4a b x)(b x + a) log(c (b x + a) )
--R    +
--R          2  2   2          n
--R        (6b n x  - 6a n)(b x + a)
--R      +
--R          3 3      2 2    2        3         n - 1
--R        (- 6b n x  - 6a b n x  + 6a b n x + 6a n)(b x + a)
--R    *
--R                 n 2
--R        log(c (b x + a) )
--R    +
--R          2 2 2       2      2 2         n
--R        (- 6b n x  + 12a b n x + 18a n )(b x + a)
--R      +
--R          3 2 3      2 2 2     2  2      3 2         n - 1
--R        (6b n x  - 6a b n x  - 30a b n x - 18a n )(b x + a)
--R    *
--R               n
--R        log(c (b x + a) )
--R    +
--R          2 3 2        3            3
--R        (4b n x  + 4a b n x)log(b x + a)
--R      +
--R          2 2 2       2                2
--R        (12b n x  + 12a b n x)log(c)log(b x + a)
--R      +
--R          2  2        2       2 2           3
--R        (12b n x  + 12a b n x)log(c) log(b x + a) + (4b x  + 4a b x)log(c)
--R      +
--R          2 3 2        3      2 3
```

7

```
--R          3b n x  - 18a b n x - 18a n
--R      *
--R                 n
--R         (b x + a)
--R    +
--R          3 3 3        2 3 2      2   3       3 3         n - 1
--R       (- 3b n x  + 15a b n x  + 36a b n x + 18a n )(b x + a)
--R  /
--R        2                 n
--R     (4b x + 4a b)(b x + a)
--R                                          Type: Expression(Integer)
--E 15


--S 16 of 514
t0203:= log(c*(a+b*x)^n)^3
--R
--R
--R                    n 3
--R   (10)  log(c (b x + a) )
--R                                          Type: Expression(Integer)
--E 16


--S 17 of 514
r0203:= -6*n^3*x+6*n^2*(a+b*x)*log(c*(a+b*x)^n)/b-_
        3*n*(a+b*x)*log(c*(a+b*x)^n)^2/b+(a+b*x)*log(c*(a+b*x)^n)^3/b
--R
--R
--R   (11)
--R                          n 3                              n 2
--R       (b x + a)log(c (b x + a) )  + (- 3b n x - 3a n)log(c (b x + a) )
--R    +
--R           2        2            n        3
--R       (6b n x + 6a n )log(c (b x + a) ) - 6b n x
--R  /
--R     b
--R                                          Type: Expression(Integer)
--E 17


--S 18 of 514
a0203:= integrate(t0203,x)
--R
--R
--R   (12)
--R           3        3            3
--R       (b n x + a n )log(b x + a)
--R    +
--R            2        2          3        3          2
--R       ((3b n x + 3a n )log(c) - 3b n x - 3a n )log(b x + a)
--R    +
--R                             2        2        2          3        3
```

8

```
--R          ((3b n x + 3a n)log(c)  + (- 6b n x - 6a n )log(c) + 6b n x + 6a n )
--R      *
--R          log(b x + a)
--R      +
--R              3             2        2              3
--R        b x log(c)  - 3b n x log(c)  + 6b n x log(c) - 6b n x
--R  /
--R      b
--R                                      Type: Union(Expression(Integer),...)
--E 18


--S 19 of 514
m0203:= a0203-r0203
--R
--R
--R   (13)
--R                               n 3                              n 2
--R        (- b x - a)log(c (b x + a) )  + (3b n x + 3a n)log(c (b x + a) )
--R      +
--R              2        2              n      3    3          3
--R        (- 6b n x - 6a n )log(c (b x + a) ) + (b n x + a n )log(b x + a)
--R      +
--R              2        2          3    3          2
--R        ((3b n x + 3a n )log(c) - 3b n x - 3a n )log(b x + a)
--R      +
--R                            2        2        2              3        3
--R          ((3b n x + 3a n)log(c)  + (- 6b n x - 6a n )log(c) + 6b n x + 6a n )
--R      *
--R          log(b x + a)
--R      +
--R              3             2        2
--R        b x log(c)  - 3b n x log(c)  + 6b n x log(c)
--R  /
--R      b
--R                                            Type: Expression(Integer)
--E 19


--S 20 of 514
d0203:= D(m0203,x)
--R
--R
--R   (14)
--R              n              n 3
--R        - (b x + a) log(c (b x + a) )
--R      +
--R              n                     n - 1                n 2
--R        (3n (b x + a)  + (- 3b n x - 3a n)(b x + a)     )log(c (b x + a) )
--R      +
--R            2         n      2    2        n - 1              n
--R        (- 6n (b x + a)  + (6b n x + 6a n )(b x + a)     )log(c (b x + a) )
```

9

```
--R    +
--R             3               3    2                 2              2
--R          n log(b x + a)  + 3n log(c)log(b x + a)  + 3n log(c) log(b x + a)
--R        +
--R              3    3
--R          log(c)  + 6n
--R      *
--R                 n
--R        (b x + a)
--R      +
--R              3        3         n - 1
--R        (- 6b n x - 6a n )(b x + a)
--R  /
--R            n
--R      (b x + a)
--R                                              Type: Expression(Integer)
--E 20


--S 21 of 514
t0204:= log(c*(a+b*x)^n)^3/x
--R
--R
--R                          n 3
--R          log(c (b x + a) )
--R   (15)  ------------------
--R                 x
--R                                              Type: Expression(Integer)
--E 21


--S 22 of 514
r0204:= log(-b*x/a)*log(c*(a+b*x)^n)^3+3*n*log(c*(a+b*x)^n)^2*_
        polylog(2,1+b*x/a)-6*n^2*log(c*(a+b*x)^n)*_
        polylog(3,1+b*x/a)+6*n^3*polylog(4,(a+b*x)/a)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                    Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 22


--S 23 of 514
```

10

```
        a0204:= integrate(t0204,x)
--R
--R
--R              x                    n 3
--R            ++  log(c (%I b + a) )
--R   (16)   |   ------------------ d%I
--R          ++            %I
--R                                              Type: Union(Expression(Integer),...)
--E 23

--S 24 of 514
--m0204:= a0204-r0204
--E 24

--S 25 of 514
--d0204:= D(m0204,x)
--E 25

--S 26 of 514
t0205:= log(c*(a+b*x)^n)^3/x^2
--R
--R
--R                        n 3
--R         log(c (b x + a) )
--R   (17)  ------------------
--R                 2
--R                x
--R                                              Type: Expression(Integer)
--E 26

--S 27 of 514
r0205:= 3*b*n*log(-b*x/a)*log(c*(a+b*x)^n)^2/a-_
        (a+b*x)*log(c*(a+b*x)^n)^3/a/x+6*b*n^2*log(c*(a+b*x)^n)*_
        polylog(2,1+b*x/a)/a-6*b*n^3*polylog(3,(a+b*x)/a)/a
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                               PositiveInteger
--R                     Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 27
```

```
--S 28 of 514
a0205:= integrate(t0205,x)
--R
--R
--R             x                    n 3
--R          ++  log(c (%I b + a) )
--R   (18)    |  ------------------ d%I
--R          ++              2
--R                        %I
--R                                          Type: Union(Expression(Integer),...)
--E 28

--S 29 of 514
--m0205:= a0205-r0205
--E 29

--S 30 of 514
--d0205:= D(m0205,x)
--E 30

--S 31 of 514
t0206:= log(c*(a+b*x)^n)^3/x^3
--R
--R
--R                      n 3
--R          log(c (b x + a) )
--R   (19)   ------------------
--R                  3
--R                 x
--R                                                  Type: Expression(Integer)
--E 31

--S 32 of 514
r0206:= 3*b^2*n^2*log(-b*x/a)*log(c*(a+b*x)^n)/a^2-3/2*b*n*(a+b*x)*_
        log(c*(a+b*x)^n)^2/a^2/x-3/2*b^2*n*log(-b*x/a)*_
        log(c*(a+b*x)^n)^2/a^2+1/2*b^2*log(c*(a+b*x)^n)^3/a^2-1/2*_
        log(c*(a+b*x)^n)^3/x^2+3*b^2*n^2*(n-log(c*(a+b*x)^n))*_
        polylog(2,1+b*x/a)/a^2+3*b^2*n^3*polylog(3,(a+b*x)/a)/a^2
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                    Fraction(Polynomial(Integer))
--R
```

12

```
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 32


--S 33 of 514
a0206:= integrate(t0206,x)
--R
--R
--R           x                    n 3
--R          ++  log(c (%I b + a) )
--R  (20)    |   ------------------- d%I
--R         ++              3
--R                       %I
--R                                        Type: Union(Expression(Integer),...)
--E 33


--S 34 of 514
--m0206:= a0206-r0206
--E 34


--S 35 of 514
--d0206:= D(m0206,x)
--E 35


--S 36 of 514
t0207:= x^3/log(c*(a+b*x)^n)
--R
--R
--R               3
--R              x
--R  (21)  ----------------
--R                  n
--R        log(c (b x + a) )
--R                                               Type: Expression(Integer)
--E 36

--S 37 of 514
r0207:= -a^3*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^4/n+_
        3*a^2*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^4/n-_
        3*a*(a+b*x)^3*Ei(3*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(3/n))/b^4/n+_
        (a+b*x)^4*Ei(4*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(4/n))/b^4/n
--R
--R
--R  (22)
--R                                                       1             2
--R                                                       -             -
--R          4 4      3 3     2 2 2    3      4            n n           n n
--R        (b x + 4a b x + 6a b x + 4a b x + a )(c (b x + a) ) (c (b x + a) )
--R      *
--R                     3
```

13

```
--R                                 -                   n
--R                       n n    4log(c (b x + a) )
--R          (c (b x + a) ) Ei(------------------)
--R                                       n
--R     +
--R                                               1                 2
--R                                               -                 -
--R          3 3      2 2 2    3      4           n n               n n
--R          (- 3a b x  - 9a b x  - 9a b x - 3a )(c (b x + a) ) (c (b x + a) )
--R     *
--R                       4
--R                       -                   n
--R                       n n    3log(c (b x + a) )
--R          (c (b x + a) ) Ei(------------------)
--R                                       n
--R     +
--R                                               1              3              4
--R                                               -              -              -
--R          2 2 2    3      4                    n n            n n            n n
--R          (3a b x  + 6a b x + 3a )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R     *
--R                            n
--R            2log(c (b x + a) )
--R          Ei(------------------)
--R                    n
--R     +
--R                                       2              3              4
--R                                       -              -              -
--R          3      4                     n n            n n            n n
--R          (- a b x - a )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R     *
--R                           n
--R            log(c (b x + a) )
--R          Ei(----------------)
--R                    n
--R  /
--R                             1              2              3              4
--R                             -              -              -              -
--R       4               n n            n n            n n            n n
--R     b n (c (b x + a) ) (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R                                                 Type: Expression(Integer)
--E 37

--S 38 of 514
a0207:= integrate(t0207,x)
--R
--R
--R               x          3
--R              ++        %I
--R   (23)    |   ------------------ d%I
```

14

```
--R           ++                       n
--R               log(c (%I b + a) )
--R                                             Type: Union(Expression(Integer),...)
--E 38

--S 39 of 514
--m0207:= a0207-r0207
--E 39

--S 40 of 514
--d0207:= D(m0207,x)
--E 40

--S 41 of 514
t0208:= x^2/log(c*(a+b*x)^n)
--R
--R
--R                     2
--R                    x
--R   (24)  -----------------
--R                     n
--R         log(c (b x + a) )
--R                                             Type: Expression(Integer)
--E 41

--S 42 of 514
r0208:= a^2*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^3/n-_
        2*a*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^3/n+_
        (a+b*x)^3*Ei(3*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(3/n))/b^3/n
--R
--R
--R   (25)
--R                                                       1           2
--R                                                       -           -
--R           3 3      2 2     2       3                 n n         n n
--R         (b x  + 3a b x  + 3a b x + a )(c (b x + a) ) (c (b x + a) )
--R      *
--R                            n
--R             3log(c (b x + a) )
--R         Ei(------------------)
--R                   n
--R      +
--R                                               1           3
--R                                               -           -
--R             2 2     2       3                n n         n n
--R         (- 2a b x  - 4a b x - 2a )(c (b x + a) ) (c (b x + a) )
--R      *
--R                            n
--R             2log(c (b x + a) )
--R         Ei(------------------)
```

```
--R                       n
--R        +
--R                                   2               3
--R                                   -               -               n
--R         2       3              n n             n n    log(c (b x + a) )
--R        (a b x + a )(c (b x + a) ) (c (b x + a) ) Ei(-----------------)
--R                                                              n
--R  /
--R                         1               2               3
--R                         -               -               -
--R        3             n n             n n             n n
--R      b n (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R                                            Type: Expression(Integer)
--E 42


--S 43 of 514
a0208:= integrate(t0208,x)
--R
--R
--R              x           2
--R         ++           %I
--R  (26)   |   ----------------- d%I
--R         ++              n
--R            log(c (%I b + a) )
--R                                     Type: Union(Expression(Integer),...)
--E 43


--S 44 of 514
--m0208:= a0208-r0208
--E 44


--S 45 of 514
--d0208:= D(m0208,x)
--E 45


--S 46 of 514
t0209:= x/log(c*(a+b*x)^n)
--R
--R
--R                  x
--R  (27)   -----------------
--R                        n
--R          log(c (b x + a) )
--R                                            Type: Expression(Integer)
--E 46


--S 47 of 514
r0209:= -a*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^2/n+_
        (a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^2/n
--R
```

16

```
--R
--R   (28)
--R                                              1
--R                                              -                       n
--R        2 2           2           n n   2log(c (b x + a) )
--R       (b x  + 2a b x + a )(c (b x + a) ) Ei(------------------)
--R                                                       n
--R     +
--R                                         2
--R                                         -                n
--R               2            n n   log(c (b x + a) )
--R       (- a b x - a )(c (b x + a) ) Ei(-----------------)
--R                                               n
--R  /
--R                       1            2
--R                       -            -
--R      2           n n           n n
--R     b n (c (b x + a) ) (c (b x + a) )
--R                                              Type: Expression(Integer)
--E 47


--S 48 of 514
a0209:= integrate(t0209,x)
--R
--R
--R            x
--R          ++           %I
--R  (29)   |   ----------------- d%I
--R          ++               n
--R            log(c (%I b + a) )
--R                                        Type: Union(Expression(Integer),...)
--E 48


--S 49 of 514
--m0209:= a0209-r0209
--E 49


--S 50 of 514
--d0209:= D(m0209,x)
--E 50


--S 51 of 514
t0210:= 1/log(c*(a+b*x)^n)
--R
--R
--R                1
--R   (30)  -----------------
--R                       n
--R          log(c (b x + a) )
--R                                              Type: Expression(Integer)
```

17

```
--E 51

--S 52 of 514
r0210:= (a+b*x)*Ei(log(c*(a+b*x)^n)/n)/b/n/((c*(a+b*x)^n)^(1/n))
--R
--R
--R                                           n
--R                       log(c (b x + a) )
--R           (b x + a)Ei(-----------------)
--R                               n
--R   (31)   ----------------------------
--R                                 1
--R                                 -
--R                               n n
--R               b n (c (b x + a) )
--R                                                   Type: Expression(Integer)
--E 52

--S 53 of 514
a0210:= integrate(t0210,x)
--R
--R
--R             x
--R           ++          1
--R   (32)   |   ----------------- d%I
--R           ++              n
--R               log(c (%I b + a) )
--R                                           Type: Union(Expression(Integer),...)
--E 53

--S 54 of 514
--m0210:= a0210-r0210
--E 54

--S 55 of 514
--d0210:= D(m0210,x)
--E 55

--S 56 of 514
t0211:= x^3/log(c*(a+b*x)^n)^2
--R
--R
--R                   3
--R                 x
--R   (33)   ------------------
--R                       n 2
--R         log(c (b x + a) )
--R                                                   Type: Expression(Integer)
--E 56
```

18

```
r0211:= -a^3*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^4/n^2+_
        6*a^2*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/_
        b^4/n^2-9*a*(a+b*x)^3*Ei(3*log(c*(a+b*x)^n)/n)/_
        ((c*(a+b*x)^n)^(3/n))/b^4/n^2+4*(a+b*x)^4*Ei(4*log(c*(a+b*x)^n)/n)/_
        ((c*(a+b*x)^n)^(4/n))/b^4/n^2+a^3*(a+b*x)/b^4/n/log(c*(a+b*x)^n)-_
        3*a^2*(a+b*x)^2/b^4/n/log(c*(a+b*x)^n)+3*a*(a+b*x)^3/b^4/n/_
        log(c*(a+b*x)^n)-(a+b*x)^4/b^4/n/log(c*(a+b*x)^n)
```
```
--R
--R
--R   (34)
--R          4 4        3 3      2 2 2      3        4                    n
--R       (4b x  + 16a b x  + 24a b x  + 16a b x + 4a )log(c (b x + a) )
--R     *
--R                      1            2            3
--R                      -            -            -                    n
--R               n n          n n          n n   4log(c (b x + a) )
--R       (c (b x + a) ) (c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                                             n
--R     +
--R                                                                        1
--R                                                                        -
--R            3 3       2 2 2      3        4                n        n n
--R       (- 9a b x  - 27a b x  - 27a b x - 9a )log(c (b x + a) )(c (b x + a) )
--R     *
--R                      2            4
--R                      -            -                    n
--R               n n          n n   3log(c (b x + a) )
--R       (c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                               n
--R     +
--R                                                                      1
--R                                                                      -
--R         2 2 2      3        4                n        n n
--R       (6a b x  + 12a b x + 6a )log(c (b x + a) )(c (b x + a) )
--R     *
--R                      3            4
--R                      -            -                    n
--R               n n          n n   2log(c (b x + a) )
--R       (c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                               n
--R     +
--R                                                   2            3
--R                                                   -            -
--R         3        4                n        n n          n n
--R       (- a b x - a )log(c (b x + a) )(c (b x + a) ) (c (b x + a) )
--R     *
--R                      4
--R                      -                    n
--R               n n    log(c (b x + a) )
```

```
--R          (c (b x + a) ) Ei(----------------)
--R                               n
--R      +
--R                                        1          2          3
--R                                        -          -          -
--R            4  4     3  3             n n        n n        n n
--R         (- b n x  - a b n x )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R       *
--R                      4
--R                      -
--R                    n n
--R         (c (b x + a) )
--R  /
--R                                        1          2          3
--R                                        -          -          -
--R         4 2              n           n n        n n        n n
--R        b n log(c (b x + a) )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R    *
--R                     4
--R                     -
--R                   n n
--R         (c (b x + a) )
--R                                            Type: Expression(Integer)
--E 57


--S 58 of 514
a0211:= integrate(t0211,x)
--R
--R
--R              x            3
--R        ++         %I
--R   (35)  |   ------------------ d%I
--R        ++            n 2
--R           log(c (%I b + a) )
--R                                    Type: Union(Expression(Integer),...)
--E 58


--S 59 of 514
--m0211:= a0211-r0211
--E 59


--S 60 of 514
--d0211:= D(m0211,x)
--E 60


--S 61 of 514
t0212:= x^2/log(c*(a+b*x)^n)^2
--R
--R
--R                    2
```

20

```
--R                    x
--R    (36)  ------------------
--R                     n 2
--R          log(c (b x + a) )
--R                                                        Type: Expression(Integer)
--E 61


--S 62 of 514
r0212:= a^2*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^3/n^2-_
        4*a*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^3/n^2+_
        3*(a+b*x)^3*Ei(3*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(3/n))/b^3/n^2-_
        a^2*(a+b*x)/b^3/n/log(c*(a+b*x)^n)+2*a*(a+b*x)^2/b^3/n/_
        log(c*(a+b*x)^n)-(a+b*x)^3/b^3/n/log(c*(a+b*x)^n)
--R
--R
--R    (37)
--R                                                                        1
--R                                                                        -
--R            3 3      2 2     2        3                n            n n
--R          (3b x  + 9a b x  + 9a b x + 3a )log(c (b x + a) )(c (b x + a) )
--R        *
--R                         2
--R                         -                  n
--R                 n n   3log(c (b x + a) )
--R          (c (b x + a) ) Ei(------------------)
--R                                  n
--R        +
--R                                                                        1
--R                                                                        -
--R              2 2     2        3                n            n n
--R          (- 4a b x  - 8a b x - 4a )log(c (b x + a) )(c (b x + a) )
--R        *
--R                         3
--R                         -                  n
--R                 n n   2log(c (b x + a) )
--R          (c (b x + a) ) Ei(------------------)
--R                                  n
--R        +
--R                                                        2           3
--R                                                        -           -
--R            2    3                n            n n           n n
--R          (a b x + a )log(c (b x + a) )(c (b x + a) ) (c (b x + a) )
--R        *
--R                         n
--R            log(c (b x + a) )
--R          Ei(------------------)
--R                   n
--R        +
--R                                               1           2           3
--R                                               -           -           -
```

```
--R               3  3      2  2            n n            n n            n n
--R       (- b n x  - a b n x )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R  /
--R                                            1            2            3
--R                                            -            -            -
--R        3 2              n            n n            n n            n n
--R      b n log(c (b x + a) )(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R                                                    Type: Expression(Integer)
--E 62


--S 63 of 514
a0212:= integrate(t0212,x)
--R
--R
--R             x              2
--R           ++           %I
--R  (38)     |   ------------------ d%I
--R           ++               n 2
--R                log(c (%I b + a) )
--R                                           Type: Union(Expression(Integer),...)
--E 63


--S 64 of 514
--m0212:= a0212-r0212
--E 64


--S 65 of 514
--d0212:= D(m0212,x)
--E 65


--S 66 of 514
t0213:= x/log(c*(a+b*x)^n)^2
--R
--R
--R                 x
--R  (39)  ------------------
--R                  n 2
--R        log(c (b x + a) )
--R                                                 Type: Expression(Integer)
--E 66


--S 67 of 514
r0213:= -a*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^2/n^2+_
        2*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^2/n^2+_
        a*(a+b*x)/b^2/n/log(c*(a+b*x)^n)-(a+b*x)^2/b^2/n/log(c*(a+b*x)^n)
--R
--R
--R  (40)
--R                                                                    1
--R                                                                    -
```

```
--R            2 2              2                  n            n n
--R        (2b x  + 4a b x + 2a )log(c (b x + a) )(c (b x + a) )
--R      *
--R                          n
--R          2log(c (b x + a) )
--R        Ei(------------------)
--R                    n
--R    +
--R                                                2
--R                                                -              n
--R              2            n          n n   log(c (b x + a) )
--R      (- a b x - a )log(c (b x + a) )(c (b x + a) ) Ei(-----------------)
--R                                                              n
--R    +
--R                                            1          2
--R                                            -          -
--R          2  2                n n          n n
--R      (- b n x  - a b n x)(c (b x + a) ) (c (b x + a) )
--R  /
--R                                            1          2
--R                                            -          -
--R      2 2              n          n n          n n
--R    b n log(c (b x + a) )(c (b x + a) ) (c (b x + a) )
--R                                                Type: Expression(Integer)
--E 67


--S 68 of 514
a0213:= integrate(t0213,x)
--R
--R
--R            x
--R        ++            %I
--R  (41)   |   ------------------ d%I
--R        ++              n 2
--R          log(c (%I b + a) )
--R                                        Type: Union(Expression(Integer),...)
--E 68


--S 69 of 514
--m0213:= a0213-r0213
--E 69


--S 70 of 514
--d0213:= D(m0213,x)
--E 70


--S 71 of 514
t0214:= 1/log(c*(a+b*x)^n)^2
--R
--R
```

```
--R                       1
--R    (42)  ------------------
--R                      n 2
--R          log(c (b x + a) )
--R                                                      Type: Expression(Integer)
--E 71


--S 72 of 514
r0214:= (a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b/n^2-_
          (a+b*x)/b/n/log(c*(a+b*x)^n)
--R
--R
--R    (43)
--R                                                           n
--R                               n     log(c (b x + a) )
--R        (b x + a)log(c (b x + a) )Ei(-----------------)
--R                                            n
--R     +
--R                                 1
--R                                 -
--R                              n n
--R        (- b n x - a n)(c (b x + a) )
--R  /
--R                                      1
--R                                      -
--R          2                 n          n n
--R      b n log(c (b x + a) )(c (b x + a) )
--R                                                      Type: Expression(Integer)
--E 72


--S 73 of 514
a0214:= integrate(t0214,x)
--R
--R
--R             x
--R           ++            1
--R    (44)   |   ------------------- d%I
--R           ++              n 2
--R                log(c (%I b + a) )
--R                                                      Type: Union(Expression(Integer),...)
--E 73


--S 74 of 514
--m0214:= a0214-r0214
--E 74


--S 75 of 514
--d0214:= D(m0214,x)
--E 75
```

24

```
t0215:= x^3/log(c*(a+b*x)^n)^3
--R
--R
--R                 3
--R                x
--R   (45)  ------------------
--R                    n 3
--R         log(c (b x + a) )
--R                                                    Type: Expression(Integer)
--E 76
```

```
r0215:= -1/2*a^3*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/_
        b^4/n^3+6*a^2*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/_
        ((c*(a+b*x)^n)^(2/n))/b^4/n^3-27/2*a*(a+b*x)^3*_
        Ei(3*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(3/n))/b^4/n^3+8*(a+b*x)^4*_
        Ei(4*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(4/n))/b^4/n^3-_
        1/2*x^3*(a+b*x)/b/n/log(c*(a+b*x)^n)^2-_
        1/2*x^2*(a+b*x)*(3*a+4*b*x)/b^2/n^2/log(c*(a+b*x)^n)
--R
--R
--R   (46)
--R            4 4        3 3       2 2 2      3         4              n 2
--R         (16b x  + 64a b x  + 96a b x  + 64a b x + 16a )log(c (b x + a) )
--R       *
--R                   1               2               3
--R                   -               -               -
--R                 n n             n n             n n   4log(c (b x + a) )
--R         (c (b x + a) ) (c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                                                  n
--R       +
--R             3 3       2 2 2      3         4              n 2
--R         (- 27a b x  - 81a b x  - 81a b x - 27a )log(c (b x + a) )
--R       *
--R                   1               2               4
--R                   -               -               -
--R                 n n             n n             n n   3log(c (b x + a) )
--R         (c (b x + a) ) (c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                                                  n
--R       +
--R                                                                  1
--R                                                                  -
--R            2 2 2      3         4              n 2              n n
--R         (12a b x  + 24a b x + 12a )log(c (b x + a) ) (c (b x + a) )
--R       *
--R                   3               4
--R                   -               -               n
--R                 n n             n n   2log(c (b x + a) )
--R         (c (b x + a) ) (c (b x + a) ) Ei(------------------)
```

```
--R                                                     n
--R      +
--R                                                  2              3
--R                                                  -              -
--R          3       4            n 2             n n            n n
--R        (- a b x - a )log(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R      *
--R                        4
--R                        -                 n
--R                  n n   log(c (b x + a) )
--R        (c (b x + a) ) Ei(----------------)
--R                                  n
--R      +
--R              4 4       3 3     2 2   2              n     4 2 4
--R          (- 4b n x  - 7a b n x  - 3a b n x )log(c (b x + a) ) - b n x
--R        +
--R              3 2 3
--R          - a b n x
--R      *
--R                        1              2              3              4
--R                        -              -              -              -
--R                  n n          n n            n n            n n
--R        (c (b x + a) ) (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R  /
--R                                      1              2              3
--R                                      -              -              -
--R         4 3            n 2        n n            n n            n n
--R        2b n log(c (b x + a) ) (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R    *
--R                        4
--R                        -
--R                  n n
--R        (c (b x + a) )
--R                                            Type: Expression(Integer)
--E 77

--S 78 of 514
a0215:= integrate(t0215,x)
--R
--R
--R             x           3
--R          ++         %I
--R   (47)   |   ------------------ d%I
--R          ++             n 3
--R             log(c (%I b + a) )
--R                                            Type: Union(Expression(Integer),...)
--E 78

--S 79 of 514
--m0215:= a0215-r0215
```

26

--d0215:= D(m0215,x)

t0216:= x^2/log(c*(a+b*x)^n)^3
--R
--R
--R   2
--R   x
--R   (48) ------------------
--R   n 3
--R   log(c (b x + a))
--R   Type: Expression(Integer)

r0216:= 1/2*a^2*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^3/n^3-_
        4*a*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^3/n^3+_
        9/2*(a+b*x)^3*Ei(3*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(3/n))/b^3/n^3-_
        1/2*x^2*(a+b*x)/b/n/log(c*(a+b*x)^n)^2-1/2*x*(a+b*x)*_
        (2*a+3*b*x)/b^2/n^2/log(c*(a+b*x)^n)
--R
--R
--R   (49)
--R   1
--R   -
--R   3 3   2 2   2   3   n 2   n n
--R   (9b x + 27a b x + 27a b x + 9a)log(c (b x + a)) (c (b x + a))
--R   *
--R   2
--R   -   n
--R   n n   3log(c (b x + a))
--R   (c (b x + a)) Ei(------------------)
--R   n
--R   +
--R   1
--R   -
--R   2 2   2   3   n 2   n n
--R   (- 8a b x - 16a b x - 8a)log(c (b x + a)) (c (b x + a))
--R   *
--R   3
--R   -   n
--R   n n   2log(c (b x + a))
--R   (c (b x + a)) Ei(------------------)
--R   n
--R   +
--R   2   3

```
--R                                                   -           -
--R          2        3            n 2         n n           n n
--R      (a b x + a )log(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R     *
--R                        n
--R          log(c (b x + a) )
--R        Ei(-----------------)
--R                 n
--R     +
--R              3  3      2  2     2                    n     3 2 3
--R          (- 3b n x  - 5a b n x  - 2a b n x)log(c (b x + a) ) - b n x
--R        +
--R              2 2 2
--R          - a b n x
--R     *
--R                      1           2           3
--R                      -           -           -
--R                    n n         n n         n n
--R        (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R  /
--R                                      1           2           3
--R                                      -           -           -
--R        3 3           n 2          n n         n n         n n
--R     2b n log(c (b x + a) ) (c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R                                                Type: Expression(Integer)
--E 82

--S 83 of 514
a0216:= integrate(t0216,x)
--R
--R
--R             x              2
--R         ++          %I
--R   (50)  |   ------------------- d%I
--R         ++                 n 3
--R            log(c (%I b + a) )
--R                                       Type: Union(Expression(Integer),...)
--E 83

--S 84 of 514
--m0216:= a0216-r0216
--E 84

--S 85 of 514
--d0216:= D(m0216,x)
--E 85

--S 86 of 514
t0217:= x/log(c*(a+b*x)^n)^3
--R
```

28

```
--R
--R                     x
--R   (51)  ------------------
--R                      n 3
--R         log(c (b x + a) )
--R                                                          Type: Expression(Integer)
--E 86


--S 87 of 514
r0217:= -1/2*a*(a+b*x)*Ei(log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(1/n))/b^2/n^3+_
        2*(a+b*x)^2*Ei(2*log(c*(a+b*x)^n)/n)/((c*(a+b*x)^n)^(2/n))/b^2/n^3-_
        1/2*x*(a+b*x)/b/n/log(c*(a+b*x)^n)^2-1/2*(a+b*x)*(a+2*b*x)/_
        b^2/n^2/log(c*(a+b*x)^n)
--R
--R
--R   (52)
--R                                                                        1
--R                                                                        -
--R            2 2          2           n 2            n n
--R         (4b x  + 8a b x + 4a )log(c (b x + a) ) (c (b x + a) )
--R       *
--R                          n
--R            2log(c (b x + a) )
--R         Ei(------------------)
--R                    n
--R     +
--R                                                          2
--R                                                          -           n
--R                2           n 2           n n   log(c (b x + a) )
--R        (- a b x - a )log(c (b x + a) ) (c (b x + a) ) Ei(------------------)
--R                                                          n
--R     +
--R              2 2           2           n    2 2 2        2
--R         ((- 2b n x  - 3a b n x - a n)log(c (b x + a) ) - b n x  - a b n x)
--R       *
--R                     1          2
--R                     -          -
--R                    n n        n n
--R         (c (b x + a) ) (c (b x + a) )
--R  /
--R                                  1          2
--R                                  -          -
--R         2 3           n 2       n n        n n
--R     2b n log(c (b x + a) ) (c (b x + a) ) (c (b x + a) )
--R                                                          Type: Expression(Integer)
--E 87


--S 88 of 514
a0217:= integrate(t0217,x)
--R
```

29

```
--R
--R               x
--R          ++            %I
--R   (53)  |   ------------------ d%I
--R        ++                 n 3
--R           log(c (%I b + a) )
--R                                      Type: Union(Expression(Integer),...)
--E 88

--S 89 of 514
--m0217:= a0217-r0217
--E 89

--S 90 of 514
--d0217:= D(m0217,x)
--E 90

--S 91 of 514
t0218:= 1/log(c*(a+b*x)^n)^3
--R
--R
--R                 1
--R   (54)   ------------------
--R                   n 3
--R         log(c (b x + a) )
--R                                      Type: Expression(Integer)
--E 91

--S 92 of 514
r0218:= 1/2*(a+b*x)*(Ei(log(c*(a+b*x)^n)/n)*(c*(a+b*x)^n)^(-1/n)*_
        log(c*(a+b*x)^n)^2-n^2-n*log(c*(a+b*x)^n))/n^3/b/log(c*(a+b*x)^n)^2
--R
--R
--R   (55)
--R                                                    1
--R                                                   - -                n
--R                            n 2            n   n   log(c (b x + a) )
--R       (b x + a)log(c (b x + a) ) (c (b x + a) )   Ei(------------------)
--R                                                              n
--R     +
--R                                    n       2       2
--R       (- b n x - a n)log(c (b x + a) ) - b n x - a n
--R  /
--R           3              n 2
--R      2b n log(c (b x + a) )
--R                                      Type: Expression(Integer)
--E 92

--S 93 of 514
a0218:= integrate(t0218,x)
```

```
--R
--R
--R              x
--R          ++            1
--R   (56)  |   ------------------ d%I
--R         ++                 n 3
--R             log(c (%I b + a) )
--R                                      Type: Union(Expression(Integer),...)
--E 93


--S 94 of 514
--m0218:= a0218-r0218
--E 94


--S 95 of 514
--d0218:= D(m0218,x)
--E 95


--S 96 of 514
t0219:= log(c+d*x)/(a+b*x)^3
--R
--R
--R                 log(d x + c)
--R   (57)  ---------------------------
--R           3 3      2 2     2       3
--R          b x  + 3a b  x  + 3a b x + a
--R                                      Type: Expression(Integer)
--E 96


--S 97 of 514
r0219:= -1/2*d/b/(b*c-a*d)/(a+b*x)-1/2*d^2*log(a+b*x)/b/(b*c-a*d)^2+_
        1/2*d^2*log(c+d*x)/b/(b*c-a*d)^2-1/2*log(c+d*x)/b/(a+b*x)^2
--R
--R
--R   (58)
--R         2 2 2          2                22
--R       (b d x  + 2a b d x + 2a b c d - b c )log(d x + c)
--R     +
--R          2 2 2         2     2 2                 2   2        2 2
--R       (- b d x  - 2a b d x - a d )log(b x + a) + (a b d  - b c d)x + a d
--R     +
--R        - a b c d
--R  /
--R          2 3 2       4        5 2 2      3 2 2    2 3          4 2
--R       (2a b d  - 4a b c d + 2b c )x  + (4a b d  - 8a b c d + 4a b c )x
--R     +
--R         4   2     3 2       2 3 2
--R       2a b d  - 4a b c d + 2a b c
--R                                      Type: Expression(Integer)
--E 97
```

31

```
--S 98 of 514
a0219:= integrate(t0219,x)
--R
--R
--R   (59)
--R        2 2 2         2                   2 2
--R        (b d x  + 2a b d x + 2a b c d - b c )log(d x + c)
--R     +
--R          2 2 2       2     2 2                   2   2       2 2
--R        (- b d x  - 2a b d x - a d )log(b x + a) + (a b d  - b c d)x + a d
--R     +
--R        - a b c d
--R  /
--R          2 3 2       4        5 2  2     3 2 2     2 3         4 2
--R        (2a b d  - 4a b c d + 2b c )x  + (4a b d  - 8a b c d + 4a b c )x
--R     +
--R          4   2     3 2         2 3 2
--R        2a b d  - 4a b c d + 2a b c
--R                                       Type: Union(Expression(Integer),...)
--E 98


--S 99 of 514
m0219:= a0219-r0219
--R
--R
--R   (60)  0
--R                                       Type: Expression(Integer)
--E 99


--S 100 of 514
d0219:= D(m0219,x)
--R
--R
--R   (61)  0
--R                                       Type: Expression(Integer)
--E 100


--S 101 of 514
t0220:= log(c+d*x)^2/(a+b*x)^2
--R
--R
--R                         2
--R             log(d x + c)
--R   (62)  ------------------
--R             2 2          2
--R           b x  + 2a b x + a
--R                                       Type: Expression(Integer)
--E 101
```

32

```
--S 102 of 514
r0220:= 2*d*log(-d*(a+b*x)/(b*c-a*d))*log(c+d*x)/b/(b*c-a*d)-_
        d*log(c+d*x)^2/b/(b*c-a*d)-log(c+d*x)^2/b/(a+b*x)+_
        2*d*polylog(2,b*(c+d*x)/(b*c-a*d))/b/(b*c-a*d)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                     Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 102


--S 103 of 514
a0220:= integrate(t0220,x)
--R
--R
--R             x                 2
--R          ++      log(%I d + c)
--R   (63)   |   ------------------- d%I
--R          ++     2 2              2
--R             %I b  + 2%I a b + a
--R                                        Type: Union(Expression(Integer),...)
--E 103


--S 104 of 514
--m0220:= a0220-r0220
--E 104


--S 105 of 514
--d0220:= D(m0220,x)
--E 105


--S 106 of 514
t0221:= log(c+d*x)^2/(a+b*x)^3
--R
--R
--R                            2
--R                 log(d x + c)
--R   (64)  ---------------------------
--R           3 3      2 2     2       3
--R          b x  + 3a b x  + 3a b x + a
--R                                              Type: Expression(Integer)
```

33

```
--E 106

--S 107 of 514
r0221:= d^2*log(a+b*x)/b/(b*c-a*d)^2-d^2*log(c+d*x)/b/(b*c-a*d)^2-_
        d*log(c+d*x)/b/(b*c-a*d)/(a+b*x)-d^2*log(-d*(a+b*x)/(b*c-a*d))*_
        log(c+d*x)/b/(b*c-a*d)^2+1/2*d^2*log(c+d*x)^2/b/(b*c-a*d)^2-_
        1/2*log(c+d*x)^2/b/(a+b*x)^2-d^2*polylog(2,b*(c+d*x)/_
        (b*c-a*d))/b/(b*c-a*d)^2
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                     Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 107

--S 108 of 514
a0221:= integrate(t0221,x)
--R
--R
--R            x                      2
--R          ++           log(%I d + c)
--R   (65)   |   --------------------------- d%I
--R          ++     3 3     2 2        2    3
--R              %I b + 3%I a b  + 3%I a b + a
--R                                      Type: Union(Expression(Integer),...)
--E 108

--S 109 of 514
--m0221:= a0221-r0221
--E 109

--S 110 of 514
--d0221:= D(m0221,x)
--E 110

--S 111 of 514
t0222:= log(c+d*x)^3/(a+b*x)^2
--R
--R
--R                      3
--R            log(d x + c)
```

34

```
--R   (66)  ------------------
--R          2 2              2
--R         b x  + 2a b x + a
--R                                                 Type: Expression(Integer)
--E 111


--S 112 of 514
r0222:= 3*d*log(-d*(a+b*x)/(b*c-a*d))*log(c+d*x)^2/b/(b*c-a*d)-_
        d*log(c+d*x)^3/b/(b*c-a*d)-log(c+d*x)^3/b/(a+b*x)+_
        6*d*log(c+d*x)*polylog(2,b*(c+d*x)/(b*c-a*d))/b/(b*c-a*d)-_
        6*d*polylog(3,b*(c+d*x)/(b*c-a*d))/b/(b*c-a*d)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                        Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 112


--S 113 of 514
a0222:= integrate(t0222,x)
--R
--R
--R             x                3
--R          ++      log(%I d + c)
--R   (67)   |    -------------------- d%I
--R          ++     2 2              2
--R               %I b  + 2%I a b + a
--R                                            Type: Union(Expression(Integer),...)
--E 113


--S 114 of 514
--m0222:= a0222-r0222
--E 114


--S 115 of 514
--d0222:= D(m0222,x)
--E 115


--S 116 of 514
t0223:= log(c+d*x)^3/(a+b*x)^3
--R
```

35

```
--R
--R                                 3
--R                    log(d x + c)
--R   (68)  ---------------------------
--R           3 3       2 2     2       3
--R          b x  + 3a b x  + 3a b x + a
--R                                                    Type: Expression(Integer)
--E 116


--S 117 of 514
r0223:= 3*d^2*log(-d*(a+b*x)/(b*c-a*d))*log(c+d*x)/b/(b*c-a*d)^2-_
        3/2*d^2*log(c+d*x)^2/b/(b*c-a*d)^2-3/2*d*log(c+d*x)^2/b/_
        (b*c-a*d)/(a+b*x)-3/2*d^2*log(-d*(a+b*x)/(b*c-a*d))*log(c+d*x)^2/_
        b/(b*c-a*d)^2+1/2*d^2*log(c+d*x)^3/b/(b*c-a*d)^2-1/2*log(c+d*x)^3/_
        b/(a+b*x)^2+3*d^2*(1-log(c+d*x))*polylog(2,b*(c+d*x)/(b*c-a*d))/_
        b/(b*c-a*d)^2+3*d^2*polylog(3,b*(c+d*x)/(b*c-a*d))/b/(b*c-a*d)^2
--R
--R    There are no library operations named polylog
--R        Use HyperDoc Browse or issue
--R                                )what op polylog
--R        to learn if there is any operation containing " polylog " in its
--R        name.
--R
--R    Cannot find a definition or applicable library operation named
--R        polylog with argument type(s)
--R                                PositiveInteger
--R                        Fraction(Polynomial(Integer))
--R
--R        Perhaps you should use "@" to indicate the required return type,
--R        or "$" to specify which version of the function you need.
--E 117


--S 118 of 514
a0223:= integrate(t0223,x)
--R
--R
--R             x                         3
--R            ++            log(%I d + c)
--R   (69)   |  ---------------------------- d%I
--R            ++    3 3       2 2       2       3
--R                %I b  + 3%I a b  + 3%I a b + a
--R                                            Type: Union(Expression(Integer),...)
--E 118


--S 119 of 514
--m0223:= a0223-r0223
--E 119


--S 120 of 514
--d0223:= D(m0223,x)
```

```
--E 120

--S 121 of 514
t0224:= log(c*(a+b*x)^n)/(d+e*x^2)
--R
--R
--R                       n
--R           log(c (b x + a) )
--R   (70)  ----------------
--R                  2
--R               e x  + d
--R                                              Type: Expression(Integer)
--E 121

--S 122 of 514
r0224:= -1/2*(log(c*(a+b*x)^n)*log(-b*(-e)^(1/2)*(-d^(1/2)+(-e)^(1/2)*x)/_
        (b*d^(1/2)*(-e)^(1/2)-a*e))-log(c*(a+b*x)^n)*log(b*(-e)^(1/2)*_
        (d^(1/2)+(-e)^(1/2)*x)/(b*d^(1/2)*(-e)^(1/2)+a*e))+_
        n*polylog(2,-e*(a+b*x)/(b*d^(1/2)*(-e)^(1/2)-a*e))-_
        n*polylog(2,e*(a+b*x)/(b*d^(1/2)*(-e)^(1/2)+a*e)))/d^(1/2)/(-e)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                             Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 122

--S 123 of 514
a0224:= integrate(t0224,x)
--R
--R
--R           x                  n
--R          ++  log(c (%I b + a) )
--R   (71)  |   ----------------- d%I
--R          ++          2
--R                  %I e + d
--R                                          Type: Union(Expression(Integer),...)
--E 123

--S 124 of 514
--m0224:= a0224-r0224
```

37

```
--E 124


--S 125 of 514
--d0224:= D(m0224,x)
--E 125


--S 126 of 514
t0225:= log(c*(a+b*x)^n)^2/(d+e*x^2)
--R
--R
--R                       n 2
--R           log(c (b x + a) )
--R   (72)  ------------------
--R                 2
--R              e x  + d
--R                                                   Type: Expression(Integer)
--E 126


--S 127 of 514
r0225:= -1/2*(log(c*(a+b*x)^n)^2*log(-b*(-e)^(1/2)*(-d^(1/2)+(-e)^(1/2)*x)/_
        (b*d^(1/2)*(-e)^(1/2)-a*e))-log(c*(a+b*x)^n)^2*log(b*(-e)^(1/2)*_
        (d^(1/2)+(-e)^(1/2)*x)/(b*d^(1/2)*(-e)^(1/2)+a*e))+_
        2*n*log(c*(a+b*x)^n)*polylog(2,-e*(a+b*x)/(b*d^(1/2)*_
        (-e)^(1/2)-a*e))-2*n*log(c*(a+b*x)^n)*polylog(2,e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)+a*e))-2*n^2*polylog(3,-e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)-a*e))+2*n^2*polylog(3,e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)+a*e)))/d^(1/2)/(-e)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 127


--S 128 of 514
a0225:= integrate(t0225,x)
--R
--R
--R            x                  n 2
--R          ++  log(c (%I b + a) )
--R   (73)  |   ------------------ d%I
```

38

```
--R              ++                2
--R                            %I e + d
--R                                             Type: Union(Expression(Integer),...)
--E 128


--S 129 of 514
--m0225:= a0225-r0225
--E 129


--S 130 of 514
--d0225:= D(m0225,x)
--E 130


--S 131 of 514
t0226:= log(c*(a+b*x)^n)^3/(d+e*x^2)
--R
--R
--R                          n 3
--R          log(c (b x + a) )
--R   (74)   ------------------
--R                  2
--R              e x  + d
--R                                                        Type: Expression(Integer)
--E 131


--S 132 of 514
r0226:= -1/2*(log(c*(a+b*x)^n)^3*log(-b*(-e)^(1/2)*_
        (-d^(1/2)+(-e)^(1/2)*x)/(b*d^(1/2)*(-e)^(1/2)-a*e))-_
        log(c*(a+b*x)^n)^3*log(b*(-e)^(1/2)*(d^(1/2)+(-e)^(1/2)*x)/_
        (b*d^(1/2)*(-e)^(1/2)+a*e))+3*n*log(c*(a+b*x)^n)^2*_
        polylog(2,-e*(a+b*x)/(b*d^(1/2)*(-e)^(1/2)-a*e))-_
        3*n*log(c*(a+b*x)^n)^2*polylog(2,e*(a+b*x)/(b*d^(1/2)*(-e)^(1/2)+_
        a*e))-6*n^2*log(c*(a+b*x)^n)*polylog(3,-e*(a+b*x)/(b*d^(1/2)*_
        (-e)^(1/2)-a*e))+6*n^2*log(c*(a+b*x)^n)*polylog(3,e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)+a*e))+6*n^3*polylog(4,-e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)-a*e))-6*n^3*polylog(4,e*(a+b*x)/_
        (b*d^(1/2)*(-e)^(1/2)+a*e)))/d^(1/2)/(-e)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                               )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
```

39

```
--R      or "$" to specify which version of the function you need.
--E 132


--S 133 of 514
a0226:= integrate(t0226,x)
--R
--R
--R           x                    n 3
--R           ++  log(c (%I b + a) )
--R   (75)    |   ------------------ d%I
--R           ++              2
--R                      %I e + d
--R                                           Type: Union(Expression(Integer),...)
--E 133


--S 134 of 514
--m0226:= a0226-r0226
--E 134


--S 135 of 514
--d0226:= D(m0226,x)
--E 135


--S 136 of 514
t0227:= log(c*(a+b*x)^n)/(d*x+e*x^2)
--R
--R
--R                        n
--R         log(c (b x + a) )
--R   (76)  -----------------
--R                 2
--R            e x  + d x
--R                                                   Type: Expression(Integer)
--E 136


--S 137 of 514
r0227:= -1/d*(-log(-b*x/a)*log(c*(a+b*x)^n)+_
        log(c*(a+b*x)^n)*log(-b*(d+e*x)/(a*e-b*d))+_
        n*polylog(2,e*(a+b*x)/(a*e-b*d))-n*polylog(2,(a+b*x)/a))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                               )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                      Fraction(Polynomial(Integer))
```

```
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 137


--S 138 of 514
a0227:= integrate(t0227,x)
--R
--R
--R            x                   n
--R          ++  log(c (%I b + a) )
--R  (77)   |  ----------------- d%I
--R          ++        2
--R               %I e + %I d
--R                                        Type: Union(Expression(Integer),...)
--E 138


--S 139 of 514
--m0227:= a0227-r0227
--E 139


--S 140 of 514
--d0227:= D(m0227,x)
--E 140


--S 141 of 514
t0228:= log(c*(a+b*x)^n)^2/(d*x+e*x^2)
--R
--R
--R                    n 2
--R         log(c (b x + a) )
--R  (78)   ------------------
--R               2
--R            e x  + d x
--R                                               Type: Expression(Integer)
--E 141


--S 142 of 514
r0228:= -1/d*(-log(-b*x/a)*log(c*(a+b*x)^n)^2+log(c*(a+b*x)^n)^2*_
       log(-b*(d+e*x)/(a*e-b*d))+2*n*log(c*(a+b*x)^n)*_
       polylog(2,e*(a+b*x)/(a*e-b*d))-2*n*log(c*(a+b*x)^n)*_
       polylog(2,(a+b*x)/a)+2*n^2*polylog(3,(a+b*x)/a)-2*_
       n^2*polylog(3,e*(a+b*x)/(a*e-b*d)))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
```

```
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 142

--S 143 of 514
a0228:= integrate(t0228,x)
--R
--R
--R           x                   n 2
--R         ++  log(c (%I b + a) )
--R   (79)  |   ------------------ d%I
--R         ++            2
--R                  %I e + %I d
--R                                          Type: Union(Expression(Integer),...)
--E 143

--S 144 of 514
--m0228:= a0228-r0228
--E 144

--S 145 of 514
--d0228:= D(m0228,x)
--E 145

--S 146 of 514
t0229:= log(c*(a+b*x)^n)^3/(d*x+e*x^2)
--R
--R
--R                       n 3
--R         log(c (b x + a) )
--R   (80)  ------------------
--R                 2
--R             e x  + d x
--R                                                  Type: Expression(Integer)
--E 146

--S 147 of 514
r0229:= -1/d*(-log(-b*x/a)*log(c*(a+b*x)^n)^3+log(c*(a+b*x)^n)^3*_
        log(-b*(d+e*x)/(a*e-b*d))+3*n*log(c*(a+b*x)^n)^2*_
        polylog(2,e*(a+b*x)/(a*e-b*d))-3*n*log(c*(a+b*x)^n)^2*_
        polylog(2,(a+b*x)/a)-6*n^2*log(c*(a+b*x)^n)*_
        polylog(3,e*(a+b*x)/(a*e-b*d))+6*n^2*log(c*(a+b*x)^n)*_
        polylog(3,(a+b*x)/a)-6*n^3*polylog(4,(a+b*x)/a)+6*n^3*_
        polylog(4,e*(a+b*x)/(a*e-b*d)))
--R
```

```
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 147

--S 148 of 514
a0229:= integrate(t0229,x)
--R
--R
--R            x                    n 3
--R          ++  log(c (%I b + a) )
--R   (81)   |   ------------------ d%I
--R          ++         2
--R                 %I e + %I d
--R                                          Type: Union(Expression(Integer),...)
--E 148

--S 149 of 514
--m0229:= a0229-r0229
--E 149

--S 150 of 514
--d0229:= D(m0229,x)
--E 150

--S 151 of 514
t0230:= log(a+b*x)/(c+d*x+e*x^2)
--R
--R
--R          log(b x + a)
--R   (82)   --------------
--R              2
--R          e x  + d x + c
--R                                          Type: Expression(Integer)
--E 151

--S 152 of 514
r0230:= (log(a+b*x)*log(b*(-d+(d^2-4*c*e)^(1/2)-2*e*x)/_
        (b*(d^2-4*c*e)^(1/2)-b*d+2*a*e))-log(a+b*x)*_
        log(b*(d+(d^2-4*c*e)^(1/2)+2*e*x)/(b*(d^2-4*c*e)^(1/2)+_
```

```
              b*d-2*a*e))+polylog(2,2*e*(a+b*x)/(b*(d^2-4*c*e)^(1/2)-_
              b*d+2*a*e))-polylog(2,-2*e*(a+b*x)/(b*(d^2-4*c*e)^(1/2)+_
              b*d-2*a*e)))/(d^2-4*c*e)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                             Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 152


--S 153 of 514
a0230:= integrate(t0230,x)
--R
--R
--R           x
--R          ++   log(%I b + a)
--R   (83)   |   -------------- d%I
--R          ++      2
--R             %I e + %I d + c
--R                                      Type: Union(Expression(Integer),...)
--E 153


--S 154 of 514
--m0230:= a0230-r0230
--E 154


--S 155 of 514
--d0230:= D(m0230,x)
--E 155


--S 156 of 514
t0231:= log(c*(a+b*x)^n)/(d+e*x+f*x^2)
--R
--R
--R                     n
--R          log(c (b x + a) )
--R   (84)   -----------------
--R               2
--R            f x  + e x + d
--R                                             Type: Expression(Integer)
--E 156
```

44

```
--S 157 of 514
r0231:= (log(c*(a+b*x)^n)*log(b*(-e+(e^2-4*d*f)^(1/2)-2*f*x)/_
        (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-log(c*(a+b*x)^n)*_
        log(b*(e+(e^2-4*d*f)^(1/2)+2*f*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))+_
        n*polylog(2,2*f*(a+b*x)/(-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-_
        n*polylog(2,-2*f*(a+b*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2))))/_
        (e^2-4*d*f)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                          )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                            Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 157

--S 158 of 514
a0231:= integrate(t0231,x)
--R
--R
--R             x                  n
--R          ++  log(c (%I b + a) )
--R   (85)   |  ------------------ d%I
--R          ++        2
--R              %I f + %I e + d
--R                                           Type: Union(Expression(Integer),...)
--E 158

--S 159 of 514
--m0231:= a0231-r0231
--E 159

--S 160 of 514
--d0231:= D(m0231,x)
--E 160

--S 161 of 514
t0232:= log(c*(a+b*x)^n)^2/(d+e*x+f*x^2)
--R
--R
--R                       n 2
--R          log(c (b x + a) )
```

45

```
--R   (86)  -----------------
--R             2
--R          f x  + e x + d
--R                                              Type: Expression(Integer)
--E 161


--S 162 of 514
r0232:= (log(c*(a+b*x)^n)^2*log(b*(-e+(e^2-4*d*f)^(1/2)-2*f*x)/_
        (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-log(c*(a+b*x)^n)^2*_
        log(b*(e+(e^2-4*d*f)^(1/2)+2*f*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))+_
        2*n*log(c*(a+b*x)^n)*polylog(2,2*f*(a+b*x)/(-b*e+2*a*f+_
        b*(e^2-4*d*f)^(1/2)))-2*n*log(c*(a+b*x)^n)*polylog(2,-2*f*(a+b*x)/_
        (b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))-2*n^2*polylog(3,2*f*(a+b*x)/_
        (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))+2*n^2*_
        polylog(3,-2*f*(a+b*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2))))/_
        (e^2-4*d*f)^(1/2)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                               PositiveInteger
--R                             Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 162


--S 163 of 514
a0232:= integrate(t0232,x)
--R
--R
--R            x               n 2
--R          ++  log(c (%I b + a) )
--R   (87)  |   ------------------ d%I
--R         ++        2
--R                %I f + %I e + d
--R                                              Type: Union(Expression(Integer),...)
--E 163


--S 164 of 514
--m0232:= a0232-r0232
--E 164


--S 165 of 514
--d0232:= D(m0232,x)
```

46

```
          --E 165

          --S 166 of 514
          t0233:= log(c*(a+b*x)^n)^3/(d+e*x+f*x^2)
          --R
          --R
          --R                      n 3
          --R          log(c (b x + a) )
          --R   (88)  -----------------
          --R                2
          --R            f x  + e x + d
          --R                                                      Type: Expression(Integer)
          --E 166

          --S 167 of 514
          r0233:= (log(c*(a+b*x)^n)^3*log(b*(-e+(e^2-4*d*f)^(1/2)-2*f*x)/_
                  (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-log(c*(a+b*x)^n)^3*_
                  log(b*(e+(e^2-4*d*f)^(1/2)+2*f*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))+_
                  3*n*log(c*(a+b*x)^n)^2*polylog(2,2*f*(a+b*x)/_
                  (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-3*n*log(c*(a+b*x)^n)^2*_
                  polylog(2,-2*f*(a+b*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))-_
                  6*n^2*log(c*(a+b*x)^n)*polylog(3,2*f*(a+b*x)/_
                  (-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))+6*n^2*log(c*(a+b*x)^n)*_
                  polylog(3,-2*f*(a+b*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2)))+_
                  6*n^3*polylog(4,2*f*(a+b*x)/(-b*e+2*a*f+b*(e^2-4*d*f)^(1/2)))-_
                  6*n^3*polylog(4,-2*f*(a+b*x)/(b*e-2*a*f+b*(e^2-4*d*f)^(1/2))))/_
                  (e^2-4*d*f)^(1/2)
          --R
          --R   There are no library operations named polylog
          --R      Use HyperDoc Browse or issue
          --R                               )what op polylog
          --R      to learn if there is any operation containing " polylog " in its
          --R      name.
          --R
          --R   Cannot find a definition or applicable library operation named
          --R      polylog with argument type(s)
          --R                               PositiveInteger
          --R                               Expression(Integer)
          --R
          --R      Perhaps you should use "@" to indicate the required return type,
          --R      or "$" to specify which version of the function you need.
          --E 167

          --S 168 of 514
          a0233:= integrate(t0233,x)
          --R
          --R
          --R             x                   n 3
          --R          ++  log(c (%I b + a) )
          --R   (89)  |   ------------------ d%I
```

47

```
--R            ++        2
--R                %I f + %I e + d
--R                                         Type: Union(Expression(Integer),...)
--E 168


--S 169 of 514
--m0233:= a0233-r0233
--E 169


--S 170 of 514
--d0233:= D(m0233,x)
--E 170


--S 171 of 514
t0234:= log(d*(b*x+c*x^2)^n)^2
--R
--R
--R                    2       n 2
--R   (90)  log(d (c x  + b x) )
--R                                              Type: Expression(Integer)
--E 171


--S 172 of 514
r0234:= -1/c*(-8*n^2*x*c+4*b*n^2*log(b+c*x)+2*b*n^2*log(-c*x/b)*_
        log(b+c*x)+b*n^2*log(b+c*x)^2+4*n*x*log(d*(x*(b+c*x))^n)*c-_
        x*log(d*(x*(b+c*x))^n)^2*c-2*b*n*log(b+c*x)*log(d*(x*(b+c*x))^n)+_
        2*b*n^2*polylog(2,(b+c*x)/b))
--R
--R    There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                             )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                               PositiveInteger
--R                        Fraction(Polynomial(Integer))
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 172


--S 173 of 514
a0234:= integrate(t0234,x)
--R
--R
--R            x
--R           ++           2         n 2
--R   (91)   |   log(d (%I c + %I b) ) d%I
```

```
--R          ++
--R                                                Type: Union(Expression(Integer),...)
--E 173


--S 174 of 514
--m0234:= a0234-r0234
--E 174


--S 175 of 514
--d0234:= D(m0234,x)
--E 175


--S 176 of 514
t0235:= log(d*(b*x+c*x^2)^n)/x
--R
--R
--R                    2       n
--R          log(d (c x  + b x) )
--R   (92)  --------------------
--R                    x
--R                                                Type: Expression(Integer)
--E 176


--S 177 of 514
r0235:= -1/2*n*log(x)^2-n*log(x)*log((b+c*x)/b)+log(x)*_
        log(d*(x*(b+c*x))^n)-n*polylog(2,-c*x/b)
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                                )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                       Fraction(Polynomial(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 177


--S 178 of 514
a0235:= integrate(t0235,x)
--R
--R
--R              x         2          n
--R          ++  log(d (%I c + %I b) )
--R   (93)  |   -------------------- d%I
--R          ++               %I
```

49

```
--R                                                Type: Union(Expression(Integer),...)
--E 178


--S 179 of 514
--m0235:= a0235-r0235
--E 179


--S 180 of 514
--d0235:= D(m0235,x)
--E 180


--S 181 of 514
t0236:= log(d*(a+b*x+c*x^2)^n)
--R
--R
--R                    2          n
--R   (94)  log(d (c x  + b x + a) )
--R                                                Type: Expression(Integer)
--E 181


--S 182 of 514
r0236:= -2*n*x+(b^2-4*a*c)^(1/2)*n*atanh((b+2*c*x)/(b^2-4*a*c)^(1/2))/c+_
       1/2*b*n*log(a+b*x+c*x^2)/c+x*log(d*(a+b*x+c*x^2)^n)
--R
--R
--R   (95)
--R                                         +-----------+
--R                 2          n     |         2         2c x + b
--R      2c x log(d (c x  + b x + a) ) + 2n\|- 4a c + b  atanh(-------------)
--R                                                           +-----------+
--R                                                           |         2
--R                                                           \|- 4a c + b
--R     +
--R              2
--R       b n log(c x  + b x + a) - 4c n x
--R  /
--R     2c
--R                                                Type: Expression(Integer)
--E 182


--S 183 of 514
a0236:= integrate(t0236,x)
--R
--R
--R   (96)
--R   [
--R              +-----------+
--R              |         2
--R          n\|- 4a c + b
--R       *
```

50

```
--R                          +-----------+
--R                          |         2       2 2                        2
--R              (2c x + b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R         log(------------------------------------------------------)
--R                                      2
--R                                   c x  + b x + a
--R       +
--R                        2
--R         (2c n x + b n)log(c x  + b x + a) + 2c x log(d) - 4c n x
--R    /
--R       2c
--R      ,
--R
--R                                      +---------+
--R                    +---------+       |       2
--R                    |       2      \|4a c - b                           2
--R         - 2n\|4a c - b  atan(------------) + (2c n x + b n)log(c x  + b x + a)
--R                                2c x + b
--R       +
--R           2c x log(d) - 4c n x
--R    /
--R       2c
--R      ]
--R                                    Type: Union(List(Expression(Integer)),...)
--E 183

--S 184 of 514
m0236a:= a0236.1-r0236
--R
--R
--R   (97)
--R                                      +-----------+
--R         +-----------+               |         2       2 2                        2
--R         |         2      (2c x + b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R      n\|- 4a c + b  log(------------------------------------------------------)
--R                                              2
--R                                           c x  + b x + a
--R     +
--R                                            +-----------+
--R                 2           n             |         2          2c x + b
--R       - 2c x log(d (c x  + b x + a) ) - 2n\|- 4a c + b  atanh(-------------)
--R                                                              +-----------+
--R                                                              |         2
--R                                                              \|- 4a c + b
--R     +
--R                        2
--R       2c n x log(c x  + b x + a) + 2c x log(d)
--R    /
--R       2c
--R                                                       Type: Expression(Integer)
```

51

```
--E 184

--S 185 of 514
d0236a:= D(m0236a,x)
--R
--R
--R   (98)
--R            2              2        n        2        n
--R      (- c x  - b x - a)(c x  + b x + a) log(d (c x  + b x + a) )
--R    +
--R              2              2              2
--R          (c n x  + b n x + a n)log(c x  + b x + a) + (c x  + b x + a)log(d)
--R        +
--R              2
--R          2c n x  + b n x
--R      *
--R            2        n
--R        (c x  + b x + a)
--R    +
--R        2  4         3            2  2           2            n - 1
--R    (- 2c n x  - 3b c n x  + (- 2a c - b )n x  - a b n x)(c x  + b x + a)
--R  /
--R          2              2        n
--R    (c x  + b x + a)(c x  + b x + a)
--R                                             Type: Expression(Integer)
--E 185


--S 186 of 514
m0236b:= a0236.2-r0236
--R
--R
--R   (99)
--R                                        +----------+
--R                  2        n    |       2        2c x + b
--R      - c x log(d (c x  + b x + a) ) - n\|- 4a c + b  atanh(--------------)
--R                                                        +----------+
--R                                                        |        2
--R                                                        \|- 4a c + b
--R    +
--R                            +---------+
--R          +---------+       |       2
--R          |       2  \|4a c - b            2
--R    - n\|4a c - b  atan(-----------) + c n x log(c x  + b x + a) + c x log(d)
--R                        2c x + b
--R  /
--R    c
--R                                             Type: Expression(Integer)
--E 186


--S 187 of 514
```

52

```
d0236b:= D(m0236b,x)
--R
--R
--R   (100)
--R            2                 2            n           2            n
--R       (- c x  - b x - a)(c x  + b x + a) log(d (c x  + b x + a) )
--R     +
--R              2                   2                  2
--R          (c n x  + b n x + a n)log(c x  + b x + a) + (c x  + b x + a)log(d)
--R         +
--R               2
--R           2c n x  + b n x
--R      *
--R             2           n
--R         (c x  + b x + a)
--R      +
--R          2  4         3             2  2               2            n - 1
--R      (- 2c n x  - 3b c n x  + (- 2a c - b )n x  - a b n x)(c x  + b x + a)
--R  /
--R          2           2          n
--R      (c x  + b x + a)(c x  + b x + a)
--R                                                      Type: Expression(Integer)
--E 187


--S 188 of 514
t0237:= log(d*(a+b*x+c*x^2)^n)/x
--R
--R
--R                   2           n
--R           log(d (c x  + b x + a) )
--R   (101)   -----------------------
--R                      x
--R                                                      Type: Expression(Integer)
--E 188


--S 189 of 514
r0237:= -n*log(x)*log((-b+(b^2-4*a*c)^(1/2)-2*c*x)/(-b+(b^2-4*a*c)^(1/2)))-_
        n*log(x)*log((b+(b^2-4*a*c)^(1/2)+2*c*x)/(b+(b^2-4*a*c)^(1/2)))+_
        log(x)*log(d*(a+b*x+c*x^2)^n)-_
        n*polylog(2,2*c*x/(-b+(b^2-4*a*c)^(1/2)))-_
        n*polylog(2,-2*c*x/(b+(b^2-4*a*c)^(1/2)))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                                )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
```

```
--R                              PositiveInteger
--R                            Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 189

--S 190 of 514
a0237:= integrate(t0237,x)
--R
--R
--R            x              2              n
--R          ++  log(d (%I c + %I b + a) )
--R   (102)  |   ----------------------- d%I
--R          ++              %I
--R                                        Type: Union(Expression(Integer),...)
--E 190

--S 191 of 514
--m0237:= a0237-r0237
--E 191

--S 192 of 514
--d0237:= D(m0237,x)
--E 192

--S 193 of 514
t0238:= log(a+b*x+c*x^2)
--R
--R
--R                  2
--R   (103)  log(c x  + b x + a)
--R                                                Type: Expression(Integer)
--E 193

--S 194 of 514
r0238:= -2*x+(b^2-4*a*c)^(1/2)*atanh((b+2*c*x)/(b^2-4*a*c)^(1/2))/c+_
        1/2*b*log(a+b*x+c*x^2)/c+x*log(a+b*x+c*x^2)
--R
--R
--R   (104)
--R      +----------+
--R      |      2        2c x + b                            2
--R   2\|- 4a c + b  atanh(-------------) + (2c x + b)log(c x  + b x + a) - 4c x
--R                        +----------+
--R                        |      2
--R                        \|- 4a c + b
--R   -------------------------------------------------------------------------
--R                                     2c
--R                                                Type: Expression(Integer)
```

54

```
--E 194

--S 195 of 514
a0238:= integrate(t0238,x)
--R
--R
--R   (105)
--R   [
--R           +----------+
--R           |        2
--R          \|- 4a c + b
--R       *
--R                         +----------+
--R                         |        2      2 2                       2
--R             (2c x + b)\|- 4a c + b    + 2c x  + 2b c x - 2a c + b
--R          log(----------------------------------------------------)
--R                                        2
--R                                     c x  + b x + a
--R       +
--R                          2
--R         (2c x + b)log(c x  + b x + a) - 4c x
--R   /
--R       2c
--R     ,
--R                             +---------+
--R         +---------+         |       2
--R         |       2     \|4a c - b                          2
--R   - 2\|4a c - b  atan(------------) + (2c x + b)log(c x  + b x + a) - 4c x
--R                          2c x + b
--R   -----------------------------------------------------------------------]
--R                                     2c
--R                                 Type: Union(List(Expression(Integer)),...)
--E 195

--S 196 of 514
m0238a:= a0238.1-r0238
--R
--R
--R   (106)
--R                                       +----------+
--R         +----------+                  |        2      2 2                       2
--R         |        2     (2c x + b)\|- 4a c + b    + 2c x  + 2b c x - 2a c + b
--R        \|- 4a c + b  log(----------------------------------------------------)
--R                                              2
--R                                           c x  + b x + a
--R       +
--R           +----------+
--R           |        2        2c x + b
--R         - 2\|- 4a c + b  atanh(--------------)
--R                                 +----------+
```

55

```
--R                                             |           2
--R                                           \|- 4a c + b
--R  /
--R    2c
--R                                                      Type: Expression(Integer)
--E 196


--S 197 of 514
d0238a:= D(m0238a,x)
--R
--R
--R   (107)  0
--R                                                      Type: Expression(Integer)
--E 197


--S 198 of 514
m0238b:= a0238.2-r0238
--R
--R
--R   (108)
--R                                                              +---------+
--R      +-----------+                        +---------+   |        2
--R      |         2        2c x + b          |       2      \|4a c - b
--R   - \|- 4a c + b  atanh(-------------) - \|4a c - b  atan(------------)
--R                         +-----------+                      2c x + b
--R                         |         2
--R                         \|- 4a c + b
--R   -------------------------------------------------------------------
--R                                     c
--R                                                      Type: Expression(Integer)
--E 198


--S 199 of 514
d0238b:= D(m0238b,x)
--R
--R
--R   (109)  0
--R                                                      Type: Expression(Integer)
--E 199


--S 200 of 514
t0239:= x*log(a+b*x+c*x^2)
--R
--R
--R                   2
--R   (110)  x log(c x  + b x + a)
--R                                                      Type: Expression(Integer)
--E 200


--S 201 of 514
```

```
r0239:= 1/2*b*x/c-1/2*x^2-1/2*b*(b^2-4*a*c)^(1/2)*_
        atanh((b+2*c*x)/(b^2-4*a*c)^(1/2))/c^2-1/4*(b^2-2*a*c)*_
        log(a+b*x+c*x^2)/c^2+1/2*x^2*log(a+b*x+c*x^2)
--R
--R
--R   (111)
--R           +-----------+
--R           |        2          2c x + b
--R        - 2b\|- 4a c + b  atanh(-------------)
--R                                 +-----------+
--R                                 |        2
--R                                 \|- 4a c + b
--R     +
--R         2 2         2       2            2 2
--R        (2c x  + 2a c - b )log(c x  + b x + a) - 2c x  + 2b c x
--R   /
--R        2
--R      4c
--R                                              Type: Expression(Integer)
--E 201

--S 202 of 514
a0239:= integrate(t0239,x)
--R
--R
--R   (112)
--R   [
--R            +-----------+
--R            |        2
--R          b\|- 4a c + b
--R       *
--R                      +-----------+
--R                      |        2    2 2                      2
--R           (- 2c x - b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R         log(-----------------------------------------------------)
--R                                     2
--R                                  c x  + b x + a
--R     +
--R         2 2         2       2            2 2
--R        (2c x  + 2a c - b )log(c x  + b x + a) - 2c x  + 2b c x
--R   /
--R        2
--R      4c
--R     ,
--R
--R                                   +---------+
--R              +---------+          |        2
--R              |        2     \|4a c - b
--R          2b\|4a c - b  atan(------------)
--R                                 2c x + b
```

57

```
--R        +
--R           2 2            2        2                22
--R         (2c x  + 2a c - b )log(c x  + b x + a) - 2c x  + 2b c x
--R   /
--R        2
--R      4c
--R    ]
--R                                       Type: Union(List(Expression(Integer)),...)
--E 202

--S 203 of 514
m0239a:= a0239.1-r0239
--R
--R
--R   (113)
--R          +----------+
--R          |        2
--R        b\|- 4a c + b
--R     *
--R                      +----------+
--R                      |        2    2 2                      2
--R           (- 2c x - b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R        log(-------------------------------------------------------)
--R                                    2
--R                           c x  + b x + a
--R     +
--R          +----------+
--R          |        2          2c x + b
--R        2b\|- 4a c + b  atanh(-------------)
--R                              +----------+
--R                              |        2
--R                            \|- 4a c + b
--R  /
--R        2
--R      4c
--R                                               Type: Expression(Integer)
--E 203

--S 204 of 514
d0239a:= D(m0239a,x)
--R
--R
--R   (114)  0
--R                                               Type: Expression(Integer)
--E 204

--S 205 of 514
m0239b:= a0239.2-r0239
--R
--R
```

```
--R   (115)
--R                                                              +---------+
--R      +-----------+                        +---------+        |      2
--R      |        2        2c x + b           |      2    \|4a c - b
--R   b\|- 4a c + b  atanh(-------------) + b\|4a c - b  atan(------------)
--R                        +-----------+                       2c x + b
--R                        |        2
--R                      \|- 4a c + b
--R   -------------------------------------------------------------------
--R                                      2
--R                                    2c
--R                                                Type: Expression(Integer)
--E 205


--S 206 of 514
d0239b:= D(m0239b,x)
--R
--R
--R   (116)  0
--R                                                Type: Expression(Integer)
--E 206


--S 207 of 514
t0240:= x^2*log(a+b*x+c*x^2)
--R
--R
--R          2        2
--R   (117)  x log(c x  + b x + a)
--R                                                Type: Expression(Integer)
--E 207


--S 208 of 514
r0240:= -1/3*(b^2-2*a*c)*x/c^2+1/6*b*x^2/c-2/9*x^3+_
        1/3*(b^4-a*c*(5*b^2-4*a*c))*atanh((b+2*c*x)/(b^2-4*a*c)^(1/2))/_
        c^3/(b^2-4*a*c)^(1/2)+1/6*b*(b^2-3*a*c)*log(a+b*x+c*x^2)/c^3+_
        1/3*x^3*log(a+b*x+c*x^2)
--R
--R
--R   (118)
--R          2 2        2     4         2c x + b
--R      (24a c  - 30a b c + 6b )atanh(--------------)
--R                                    +-----------+
--R                                    |        2
--R                                  \|- 4a c + b
--R      +
--R            3 3        3     2                3 3      2 2
--R          (6c x  - 9a b c + 3b )log(c x  + b x + a) - 4c x  + 3b c x
--R        +
--R              2    2
--R          (12a c  - 6b c)x
```

59

```
--R        *
--R            +-----------+
--R            |          2
--R          \|- 4a c + b
--R  /
--R              +-----------+
--R         3 |          2
--R      18c \|- 4a c + b
--R                                                    Type: Expression(Integer)
--E 208

--S 209 of 514
a0240:= integrate(t0240,x)
--R
--R
--R   (119)
--R   [
--R                          +-----------+
--R                  2 |          2
--R          (3a c - 3b )\|- 4a c + b
--R        *
--R                           +-----------+
--R                   |          2      2 2                      2
--R            (- 2c x - b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R          log(--------------------------------------------------------)
--R                                        2
--R                                     c x  + b x + a
--R      +
--R          3 3              3       2                  3 3     2 2
--R        (6c x  - 9a b c + 3b )log(c x  + b x + a) - 4c x  + 3b c x
--R      +
--R             2     2
--R        (12a c  - 6b c)x
--R   /
--R          3
--R        18c
--R     ,
--R
--R                                        +---------+
--R                         +---------+    |        2
--R                  2 |          2   \|4a c - b
--R        (6a c - 6b )\|4a c - b  atan(------------)
--R                                          2c x + b
--R      +
--R          3 3              3       2                  3 3     2 2
--R        (6c x  - 9a b c + 3b )log(c x  + b x + a) - 4c x  + 3b c x
--R      +
--R             2     2
--R        (12a c  - 6b c)x
--R   /
```

60

```
--R          3
--R       18c
--R     ]
--R                                        Type: Union(List(Expression(Integer)),...)
--E 209


--S 210 of 514
m0240a:= a0240.1-r0240
--R
--R
--R   (120)
--R            2 2       2     4
--R        (- 4a c  + 5a b c - b )
--R     *
--R                        +----------+
--R                        |      2     2 2                      2
--R           (- 2c x - b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R        log(---------------------------------------------------)
--R                                 2
--R                           c x  + b x + a
--R     +
--R            2 2       2     4          2c x + b
--R        (- 8a c  + 10a b c - 2b )atanh(------------)
--R                                       +----------+
--R                                       |      2
--R                                      \|- 4a c + b
--R  /
--R           +----------+
--R        3 |      2
--R     6c \|- 4a c + b
--R                                        Type: Expression(Integer)
--E 210


--S 211 of 514
d0240a:= D(m0240a,x)
--R
--R
--R   (121)  0
--R                                        Type: Expression(Integer)
--E 211


--S 212 of 514
m0240b:= a0240.2-r0240
--R
--R
--R   (122)
--R            2 2       2     4          2c x + b
--R        (- 4a c  + 5a b c - b )atanh(------------)
--R                                     +----------+
--R                                     |      2
```

```
--R                                             \|- 4a c + b
--R     +
--R                                                     +---------+
--R                              +----------+ +---------+    |       2
--R              2 |          2 |        2   \|4a c - b
--R      (a c - b )\|- 4a c + b  \|4a c - b  atan(-----------)
--R                                                    2c x + b
--R  /
--R          +----------+
--R        3 |         2
--R     3c \|- 4a c + b
--R                                                    Type: Expression(Integer)
--E 212


--S 213 of 514
d0240b:= D(m0240b,x)
--R
--R
--R   (123)  0
--R                                                    Type: Expression(Integer)
--E 213


--S 214 of 514
t0241:= x^3*log(a+b*x+c*x^2)
--R
--R
--R            3       2
--R   (124)  x log(c x  + b x + a)
--R                                                    Type: Expression(Integer)
--E 214


--S 215 of 514
r0241:= 1/4*b*(b^2-3*a*c)*x/c^3-1/8*(b^2-2*a*c)*x^2/c^2+1/12*b*x^3/c-_
        1/8*x^4-1/4*b*(b^4-2*a*c*(3*b^2-4*a*c))*atanh((b+2*c*x)/_
        (b^2-4*a*c)^(1/2))/c^4/(b^2-4*a*c)^(1/2)-_
        1/8*(b^4-4*b^2*a*c+2*a^2*c^2)*log(a+b*x+c*x^2)/c^4+_
        1/4*x^4*log(a+b*x+c*x^2)
--R
--R
--R   (125)
--R            2 2        3      5          2c x + b
--R      (- 48a b c  + 36a b c - 6b )atanh(-------------)
--R                                        +----------+
--R                                        |        2
--R                                        \|- 4a c + b
--R     +
--R            4 4     2 2      2     4      2               4 4       3 3
--R          (6c x  - 6a c  + 12a b c - 3b )log(c x  + b x + a) - 3c x  + 2b c x
--R       +
--R            3     2 2 2         2     3
```

62

```
--R              (6a c  - 3b c )x  + (- 18a b c  + 6b c)x
--R       *
--R            +----------+
--R            |         2
--R          \|- 4a c + b
--R  /
--R              +----------+
--R          4 |         2
--R       24c \|- 4a c + b
--R                                              Type: Expression(Integer)
--E 215

--S 216 of 514
a0241:= integrate(t0241,x)
--R
--R
--R   (126)
--R   [
--R                          +----------+
--R                      3 |         2
--R          (6a b c - 3b )\|- 4a c + b
--R        *
--R                          +----------+
--R                      |         2      2 2                2
--R            (2c x + b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R          log(----------------------------------------------------)
--R                                     2
--R                                  c x  + b x + a
--R       +
--R           4 4      2 2       2     4      2               4 4      3 3
--R         (6c x  - 6a c  + 12a b c - 3b )log(c x  + b x + a) - 3c x  + 2b c x
--R       +
--R            3      2 2 2             2      3
--R         (6a c  - 3b c )x  + (- 18a b c  + 6b c)x
--R    /
--R          4
--R        24c
--R      ,
--R
--R                                          +--------+
--R                          +--------+      |       2
--R                      3 |         2     \|4a c - b
--R         (- 12a b c + 6b )\|4a c - b  atan(-----------)
--R                                             2c x + b
--R       +
--R           4 4      2 2       2     4      2               4 4      3 3
--R         (6c x  - 6a c  + 12a b c - 3b )log(c x  + b x + a) - 3c x  + 2b c x
--R       +
--R            3      2 2 2             2      3
--R         (6a c  - 3b c )x  + (- 18a b c  + 6b c)x
```

63

```
--R    /
--R          4
--R       24c
--R     ]
--R                                         Type: Union(List(Expression(Integer)),...)
--E 216


--S 217 of 514
m0241a:= a0241.1-r0241
--R
--R
--R   (127)
--R            2  2       3     5
--R        (- 8a b c  + 6a b c - b )
--R     *
--R                         +-----------+
--R                         |      2       2 2              2
--R            (2c x + b)\|- 4a c + b    + 2c x  + 2b c x - 2a c + b
--R        log(---------------------------------------------------)
--R                                     2
--R                             c x  + b x + a
--R     +
--R          2  2       3     5           2c x + b
--R       (16a b c  - 12a b c + 2b )atanh(--------------)
--R                                        +-----------+
--R                                        |          2
--R                                        \|- 4a c + b
--R  /
--R            +-----------+
--R         4 |          2
--R       8c \|- 4a c + b
--R                                                Type: Expression(Integer)
--E 217


--S 218 of 514
d0241a:= D(m0241a,x)
--R
--R
--R   (128)  0
--R                                                Type: Expression(Integer)
--E 218


--S 219 of 514
m0241b:= a0241.2-r0241
--R
--R
--R   (129)
--R           2  2       3     5           2c x + b
--R       (8a b c  - 6a b c + b )atanh(--------------)
--R                                     +-----------+
```

64

```
--R                                                    |        2
--R                                                  \|- 4a c + b
--R      +
--R                                                            +---------+
--R                              +----------+ +---------+      |        2
--R                         3 |            2 |         2    \|4a c - b
--R       (- 2a b c + b )\|- 4a c + b  \|4a c - b  atan(------------)
--R                                                          2c x + b
--R  /
--R           +----------+
--R        4 |          2
--R     4c \|- 4a c + b
--R                                                    Type: Expression(Integer)
--E 219


--S 220 of 514
d0241b:= D(m0241b,x)
--R
--R
--R   (130)  0
--R                                                    Type: Expression(Integer)
--E 220


--S 221 of 514
t0242:= log(a+b*x+c*x^2)/x
--R
--R
--R                 2
--R          log(c x  + b x + a)
--R   (131)  -------------------
--R                  x
--R                                                    Type: Expression(Integer)
--E 221


--S 222 of 514
r0242:= -log(x)*(log(1+2*c*x/(b-(b^2-4*a*c)^(1/2)))+_
        log(1+2*c*x/(b+(b^2-4*a*c)^(1/2)))-log(a+b*x+c*x^2))-_
        polylog(2,-2*c*x/(b-(b^2-4*a*c)^(1/2)))-_
        polylog(2,-2*c*x/(b+(b^2-4*a*c)^(1/2)))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                                )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
```

65

```
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 222

--S 223 of 514
a0242:= integrate(t0242,x)
--R
--R
--R            x        2
--R         ++  log(%I c + %I b + a)
--R   (132)  |   -------------------- d%I
--R         ++          %I
--R                                         Type: Union(Expression(Integer),...)
--E 223

--S 224 of 514
--m0242:= a0242-r0242
--E 224

--S 225 of 514
--d0242:= D(m0242,x)
--E 225

--S 226 of 514
t0243:= log(a+b*x+c*x^2)/x^2
--R
--R
--R               2
--R         log(c x  + b x + a)
--R   (133)  -------------------
--R                  2
--R                 x
--R                                                 Type: Expression(Integer)
--E 226

--S 227 of 514
r0243:= (b^2-4*a*c)^(1/2)*atanh((b+2*c*x)/(b^2-4*a*c)^(1/2))/a+_
        b*log(x)/a-1/2*b*log(a+b*x+c*x^2)/a-log(a+b*x+c*x^2)/x
--R
--R
--R   (134)
--R          +-----------+
--R          |      2          2c x + b                              2
--R       2x\|- 4a c + b  atanh(--------------) + (- b x - 2a)log(c x  + b x + a)
--R                             +-----------+
--R                             |       2
--R                            \|- 4a c + b
--R      +
--R       2b x log(x)
```

66

```
--R  /
--R     2a x
--R                                                              Type: Expression(Integer)
--E 227


--S 228 of 514
a0243:= integrate(t0243,x)
--R
--R
--R   (135)
--R   [
--R            +----------+
--R            |          2
--R          x\|- 4a c + b
--R      *
--R                       +----------+
--R                       |        2     2 2                     2
--R            (2c x + b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R         log(----------------------------------------------------)
--R                                     2
--R                              c x  + b x + a
--R      +
--R                         2
--R         (- b x - 2a)log(c x  + b x + a) + 2b x log(x)
--R   /
--R      2a x
--R      ,
--R
--R                              +---------+
--R            +---------+       |        2
--R            |        2     \|4a c - b                         2
--R         - 2x\|4a c - b  atan(-----------) + (- b x - 2a)log(c x  + b x + a)
--R                              2c x + b
--R      +
--R         2b x log(x)
--R   /
--R      2a x
--R   ]
--R                               Type: Union(List(Expression(Integer)),...)
--E 228


--S 229 of 514
m0243a:= a0243.1-r0243
--R
--R
--R   (136)
--R                                   +----------+
--R            +----------+           |        2     2 2                     2
--R            |          2     (2c x + b)\|- 4a c + b   + 2c x  + 2b c x - 2a c + b
--R         \|- 4a c + b  log(----------------------------------------------------)
```

```
--R                                                        2
--R                                                      c x  + b x + a
--R     +
--R          +-----------+
--R          |         2          2c x + b
--R      - 2\|- 4a c + b  atanh(-------------)
--R                               +-----------+
--R                               |         2
--R                               \|- 4a c + b
--R  /
--R     2a
--R                                                    Type: Expression(Integer)
--E 229

--S 230 of 514
d0243a:= D(m0243a,x)
--R
--R
--R   (137)  0
--R                                                    Type: Expression(Integer)
--E 230

--S 231 of 514
m0243b:= a0243.2-r0243
--R
--R
--R   (138)
--R                                                              +---------+
--R      +-----------+                        +---------+  |         2
--R      |         2          2c x + b        |       2      \|4a c - b
--R   - \|- 4a c + b  atanh(-------------) - \|4a c - b  atan(------------)
--R                          +-----------+                     2c x + b
--R                          |         2
--R                          \|- 4a c + b
--R   -----------------------------------------------------------------
--R                                      a
--R                                                    Type: Expression(Integer)
--E 231

--S 232 of 514
d0243b:= D(m0243b,x)
--R
--R
--R   (139)  0
--R                                                    Type: Expression(Integer)
--E 232

--S 233 of 514
t0244:= log(a+b*x+c*x^2)/x^3
--R
```

```
--R
--R                 2
--R           log(c x  + b x + a)
--R   (140)  -------------------
--R                  3
--R                 x
--R                                              Type: Expression(Integer)
--E 233


--S 234 of 514
r0244:= -1/2*b/a/x-1/2*b*(b^2-4*a*c)^(1/2)*atanh((b+2*c*x)/_
        (b^2-4*a*c)^(1/2))/a^2-1/2*(b^2-2*a*c)*log(x)/a^2+_
        1/4*(b^2-2*a*c)*log(a+b*x+c*x^2)/a^2-1/2*log(a+b*x+c*x^2)/x^2
--R
--R
--R   (141)
--R               +----------+
--R          2 |          2              2c x + b
--R       - 2b x \|- 4a c + b  atanh(-------------)
--R                                   +----------+
--R                                   |         2
--R                                   \|- 4a c + b
--R     +
--R             2 2     2        2                         2 2
--R     ((- 2a c + b )x  - 2a )log(c x  + b x + a) + (4a c - 2b )x log(x) - 2a b x
--R  /
--R        2 2
--R     4a x
--R                                              Type: Expression(Integer)
--E 234


--S 235 of 514
a0244:= integrate(t0244,x)
--R
--R
--R   (142)
--R   [
--R               +----------+
--R          2 |          2
--R         b x \|- 4a c + b
--R       *
--R                        +----------+
--R              |         2      2 2              2
--R          (- 2c x - b)\|- 4a c + b  + 2c x  + 2b c x - 2a c + b
--R         log(-------------------------------------------------------)
--R                                    2
--R                               c x  + b x + a
--R       +
--R             2 2     2        2                         2 2
--R         ((- 2a c + b )x  - 2a )log(c x  + b x + a) + (4a c - 2b )x log(x)
```

69

```
--R         +
--R            - 2a b x
--R     /
--R          2 2
--R       4a x
--R      ,
--R
--R                                       +---------+
--R                      +---------+      |       2
--R               2 |         2      \|4a c - b
--R          2b x \|4a c - b  atan(-----------)
--R                                      2c x + b
--R        +
--R                       2 2    2         2                          2 2
--R          ((- 2a c + b )x  - 2a )log(c x  + b x + a) + (4a c - 2b )x log(x)
--R        +
--R            - 2a b x
--R     /
--R          2 2
--R       4a x
--R      ]
--R                                    Type: Union(List(Expression(Integer)),...)
--E 235

--S 236 of 514
m0244a:= a0244.1-r0244
--R
--R
--R   (143)
--R          +-----------+
--R          |         2
--R        b\|- 4a c + b
--R      *
--R                        +-----------+
--R                        |         2    2 2                    2
--R            (- 2c x - b)\|- 4a c + b  + 2c x  + 2b c x - 2a c + b
--R         log(-------------------------------------------------------)
--R                                         2
--R                                      c x  + b x + a
--R      +
--R          +-----------+
--R          |         2          2c x + b
--R        2b\|- 4a c + b  atanh(--------------)
--R                              +-----------+
--R                              |         2
--R                              \|- 4a c + b
--R   /
--R         2
--R       4a
--R                                                   Type: Expression(Integer)
```

70

```
--E 236

--S 237 of 514
d0244a:= D(m0244a,x)
--R
--R
--R   (144)  0
--R                                                    Type: Expression(Integer)
--E 237

--S 238 of 514
m0244b:= a0244.2-r0244
--R
--R
--R   (145)
--R                                                                +---------+
--R      +----------+                        +---------+        |       2
--R      |       2           2c x + b         |       2      \|4a c - b
--R   b\|- 4a c + b  atanh(-------------) + b\|4a c - b  atan(-----------)
--R                        +----------+                        2c x + b
--R                        |       2
--R                     \|- 4a c + b
--R   -------------------------------------------------------------------
--R                                        2
--R                                     2a
--R                                                    Type: Expression(Integer)
--E 238

--S 239 of 514
d0244b:= D(m0244b,x)
--R
--R
--R   (146)  0
--R                                                    Type: Expression(Integer)
--E 239

--S 240 of 514
t0245:= x*log(1+c*f^(a+b*x))
--R
--R
--R                   b x + a
--R   (147)  x log(c f        + 1)
--R                                                    Type: Expression(Integer)
--E 240

--S 241 of 514
r0245:= -1/b^2/log(f)^2*(x*polylog(2,-c*f^(a+b*x))*b*log(f)-_
        polylog(3,-c*f^(a+b*x)))
--R
--R   There are no library operations named polylog
```

71

```
--R      Use HyperDoc Browse or issue
--R                          )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                             Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 241

--S 242 of 514
a0245:= integrate(t0245,x)
--R
--R
--R              x
--R          ++              %I b + a
--R   (148)  |   %I log(c f         + 1)d%I
--R          ++
--R                                          Type: Union(Expression(Integer),...)
--E 242

--S 243 of 514
--m0245:= a0245-r0245
--E 243

--S 244 of 514
--d0245:= D(m0245,x)
--E 244

--S 245 of 514
t0246:= x^2*log(1+c*f^(a+b*x))
--R
--R
--R            2         b x + a
--R   (149)  x log(c f         + 1)
--R                                              Type: Expression(Integer)
--E 245

--S 246 of 514
r0246:= -1/b^3/log(f)^3*(x^2*polylog(2,-c*f^(a+b*x))*b^2*log(f)^2-_
        2*x*polylog(3,-c*f^(a+b*x))*b*log(f)+2*polylog(4,-c*f^(a+b*x)))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                          )what op polylog
--R      to learn if there is any operation containing " polylog " in its
```

```
--R       name.
--R
--R   Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                 PositiveInteger
--R                                Expression(Integer)
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 246

--S 247 of 514
a0246:= integrate(t0246,x)
--R
--R
--R             x
--R           ++    2       %I b + a
--R   (150)  |   %I log(c f         + 1)d%I
--R          ++
--R                                         Type: Union(Expression(Integer),...)
--E 247

--S 248 of 514
--m0246:= a0246-r0246
--E 248

--S 249 of 514
--d0246:= D(m0246,x)
--E 249

--S 250 of 514
t0247:= x*log(c+d*f^(a+b*x))
--R
--R
--R                 b x + a
--R   (151)  x log(d f       + c)
--R                                                     Type: Expression(Integer)
--E 250

--S 251 of 514
r0247:= 1/2*x^2*log(c+d*f^(a+b*x))-1/2*x^2*log(1+d*f^(a+b*x)/c)-_
        x*polylog(2,-d*f^(a+b*x)/c)/b/log(f)+_
        polylog(3,-d*f^(a+b*x)/c)/b^2/log(f)^2
--R
--R   There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                                )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
```

```
--R   Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 251

--S 252 of 514
a0247:= integrate(t0247,x)
--R
--R
--R               x
--R            ++                %I b + a
--R    (152)   |   %I log(d f          + c)d%I
--R            ++
--R                                        Type: Union(Expression(Integer),...)
--E 252

--S 253 of 514
--m0247:= a0247-r0247
--E 253

--S 254 of 514
--d0247:= D(m0247,x)
--E 254

--S 255 of 514
t0248:= x^2*log(c+d*f^(a+b*x))
--R
--R
--R            2        b x + a
--R    (153)  x log(d f        + c)
--R                                             Type: Expression(Integer)
--E 255

--S 256 of 514
r0248:= 1/3*x^3*log(c+d*f^(a+b*x))-1/3*x^3*log(1+d*f^(a+b*x)/c)-_
        x^2*polylog(2,-d*f^(a+b*x)/c)/b/log(f)+_
        2*x*polylog(3,-d*f^(a+b*x)/c)/b^2/log(f)^2-_
        2*polylog(4,-d*f^(a+b*x)/c)/b^3/log(f)^3
--R
--R   There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                              )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
--R   Cannot find a definition or applicable library operation named
```

74

```
--R       polylog with argument type(s)
--R                            PositiveInteger
--R                           Expression(Integer)
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 256

--S 257 of 514
a0248:= integrate(t0248,x)
--R
--R
--R             x
--R           ++    2        %I b + a
--R   (154)  |   %I log(d f          + c)d%I
--R           ++
--R                                        Type: Union(Expression(Integer),...)
--E 257

--S 258 of 514
--m0248:= a0248-r0248
--E 258

--S 259 of 514
--d0248:= D(m0248,x)
--E 259

--S 260 of 514
t0249:= exp(x)*log(a+b*exp(x))
--R
--R
--R            x        x
--R   (155)  %e log(b %e  + a)
--R                                        Type: Expression(Integer)
--E 260

--S 261 of 514
r0249:= -exp(x)+(a+b*exp(x))*log(a+b*exp(x))/b
--R
--R
--R            x            x           x
--R         (b %e  + a)log(b %e  + a) - b %e
--R   (156)  -------------------------------
--R                         b
--R                                        Type: Expression(Integer)
--E 261

--S 262 of 514
a0249:= integrate(t0249,x)
--R
```

```
--R
--R              x              x              x
--R          (b %e  + a)log(b %e  + a) - b %e
--R   (157)  --------------------------------
--R                           b
--R                                           Type: Union(Expression(Integer),...)
--E 262

--S 263 of 514
m0249:= a0249-r0249
--R
--R
--R   (158)  0
--R                                           Type: Expression(Integer)
--E 263

--S 264 of 514
d0249:= D(m0249,x)
--R
--R
--R   (159)  0
--R                                           Type: Expression(Integer)
--E 264

--S 265 of 514
t0250:= 1/x/log(exp(x))
--R
--R
--R            1
--R   (160)  --
--R            2
--R           x
--R                                           Type: Expression(Integer)
--E 265

--S 266 of 514
r0250:= (-log(x)+log(log(exp(x))))/(x-log(exp(x)))
--R
--R
--R   >> Error detected within library code:
--R   catdef: division by zero
--R
--R   Continuing to read the file...
--R
--E 266

--S 267 of 514
a0250:= integrate(t0250,x)
--R
--R
```

```
--R                 1
--R    (161)  - -
--R                 x
--R                                              Type: Union(Expression(Integer),...)
--E 267


--S 268 of 514
--m0250:= a0250-r0250
--E 268


--S 269 of 514
--d0250:= D(m0250,x)
--E 269


--S 270 of 514
t0251:= log(sin(x)^2)
--R
--R
--R                    2
--R    (162)  log(sin(x) )
--R                                                     Type: Expression(Integer)
--E 270


--S 271 of 514
r0251:= %i*x^2-2*x*log(1-exp(2*%i*x))+x*log(sin(x)^2)+%i*polylog(2,exp(2*%i*x))
--R
--R    There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                                  )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                 PositiveInteger
--R                         Expression(Complex(Integer))
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 271


--S 272 of 514
a0251:= integrate(t0251,x)
--R
--R
--R               x
--R           ++               2
--R    (163)   |   log(sin(%I) )d%I
--R          ++
--R                                              Type: Union(Expression(Integer),...)
```

```
--E 272


--S 273 of 514
--m0251:= a0251-r0251
--E 273


--S 274 of 514
--d0251:= D(m0251,x)
--E 274


--S 275 of 514
t0252:= log(sin(x)^n)
--R
--R
--R                   n
--R   (164)  log(sin(x) )
--R                                                Type: Expression(Integer)
--E 275


--S 276 of 514
r0252:= 1/2*%i*n*x^2-n*x*log(1-exp(2*%i*x))+x*log(sin(x)^n)+_
        1/2*%i*n*polylog(2,exp(2*%i*x))
--R
--R   There are 12 exposed and 3 unexposed library operations named -
--R      having 2 argument(s) but none was determined to be applicable.
--R      Use HyperDoc Browse, or issue
--R                               )display op -
--R      to learn more about the available operations. Perhaps
--R      package-calling the operation or using coercions on the arguments
--R      will allow you to apply the operation.
--R
--R   Cannot find a definition or applicable library operation named -
--R      with argument type(s)
--R                   Polynomial(Complex(Fraction(Integer)))
--R                     Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 276


--S 277 of 514
a0252:= integrate(t0252,x)
--R
--R
--R            x
--R           ++                n
--R   (165)   |   log(sin(%I) )d%I
--R          ++
--R                                                Type: Union(Expression(Integer),...)
--E 277
```

78

```
--S 278 of 514
--m0252:= a0252-r0252
--E 278


--S 279 of 514
--d0252:= D(m0252,x)
--E 279


--S 280 of 514
t0253:= log(cos(x)^2)
--R
--R
--R                      2
--R   (166)  log(cos(x) )
--R                                                    Type: Expression(Integer)
--E 280


--S 281 of 514
r0253:= %i*x^2-2*x*log(1+exp(2*%i*x))+x*log(cos(x)^2)+_
        %i*polylog(2,-exp(2*%i*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 281


--S 282 of 514
a0253:= integrate(t0253,x)
--R
--R
--R            x
--R           ++                2
--R   (167)  |   log(cos(%I) )d%I
--R         ++
--R                                                    Type: Union(Expression(Integer),...)
--E 282


--S 283 of 514
--m0253:= a0253-r0253
```

79

```
--E 283

--S 284 of 514
--d0253:= D(m0253,x)
--E 284

--S 285 of 514
t0254:= log(cos(x)^n)
--R
--R
--R                       n
--R   (168)  log(cos(x) )
--R                                                    Type: Expression(Integer)
--E 285

--S 286 of 514
r0254:= 1/2*%i*n*x^2-n*x*log(1+exp(2*%i*x))+x*log(cos(x)^n)+_
        1/2*%i*n*polylog(2,-exp(2*%i*x))
--R
--R   There are 12 exposed and 3 unexposed library operations named -
--R      having 2 argument(s) but none was determined to be applicable.
--R      Use HyperDoc Browse, or issue
--R                              )display op -
--R      to learn more about the available operations. Perhaps
--R      package-calling the operation or using coercions on the arguments
--R      will allow you to apply the operation.
--R
--R   Cannot find a definition or applicable library operation named -
--R      with argument type(s)
--R                  Polynomial(Complex(Fraction(Integer)))
--R                     Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 286

--S 287 of 514
a0254:= integrate(t0254,x)
--R
--R
--R            x
--R          ++               n
--R   (169)  |   log(cos(%I) )d%I
--R          ++
--R                                                    Type: Union(Expression(Integer),...)
--E 287

--S 288 of 514
--m0254:= a0254-r0254
--E 288
```

```
--S 289 of 514
--d0254:= D(m0254,x)
--E 289


--S 290 of 514
t0255:= log(tan(x)^2)
--R
--R
--R                      2
--R   (170)  log(tan(x) )
--R                                                    Type: Expression(Integer)
--E 290


--S 291 of 514
r0255:= 1/2*%i*log(1-%i*tan(x))*log(tan(x)^2)-1/2*%i*log(1+%i*tan(x))*_
        log(tan(x)^2)-%i*polylog(2,-%i*tan(x))+%i*polylog(2,%i*tan(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 291


--S 292 of 514
a0255:= integrate(t0255,x)
--R
--R
--R              x
--R            ++                2
--R   (171)    |   log(tan(%I) )d%I
--R            ++
--R                                                    Type: Union(Expression(Integer),...)
--E 292


--S 293 of 514
--m0255:= a0255-r0255
--E 293


--S 294 of 514
--d0255:= D(m0255,x)
```

```
--E 294

--S 295 of 514
t0256:= log(tan(x)^n)
--R
--R
--R                    n
--R   (172)  log(tan(x) )
--R                                                   Type: Expression(Integer)
--E 295

--S 296 of 514
r0256:= 1/2*%i*log(1-%i*tan(x))*log(tan(x)^n)-1/2*%i*log(1+%i*tan(x))*_
        log(tan(x)^n)-1/2*%i*n*polylog(2,-%i*tan(x))+_
        1/2*%i*n*polylog(2,%i*tan(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                             PositiveInteger
--R                    Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 296

--S 297 of 514
a0256:= integrate(t0256,x)
--R
--R
--R             x
--R           ++                n
--R   (173)   |   log(tan(%I) )d%I
--R          ++
--R                                        Type: Union(Expression(Integer),...)
--E 297

--S 298 of 514
--m0256:= a0256-r0256
--E 298

--S 299 of 514
--d0256:= D(m0256,x)
--E 299
```

```
--S 300 of 514
t0257:= log(cot(x)^2)
--R
--R
--R                    2
--R   (174)  log(cot(x) )
--R                                                    Type: Expression(Integer)
--E 300

--S 301 of 514
r0257:= -1/2*%i*log(1-%i*cot(x))*log(cot(x)^2)+1/2*%i*log(1+%i*cot(x))*_
        log(cot(x)^2)+%i*polylog(2,-%i*cot(x))-%i*polylog(2,%i*cot(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 301

--S 302 of 514
a0257:= integrate(t0257,x)
--R
--R
--R            x
--R          ++                2
--R   (175)  |   log(cot(%I) )d%I
--R          ++
--R                                               Type: Union(Expression(Integer),...)
--E 302

--S 303 of 514
--m0257:= a0257-r0257
--E 303

--S 304 of 514
--d0257:= D(m0257,x)
--E 304

--S 305 of 514
t0258:= log(cot(x)^n)
--R
```

```
--R
--R                      n
--R    (176)  log(cot(x) )
--R                                                   Type: Expression(Integer)
--E 305

--S 306 of 514
r0258:= -1/2*%i*log(1-%i*cot(x))*log(cot(x)^n)+1/2*%i*log(1+%i*cot(x))*_
        log(cot(x)^n)+1/2*%i*n*polylog(2,-%i*cot(x))-_
        1/2*%i*n*polylog(2,%i*cot(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 306

--S 307 of 514
a0258:= integrate(t0258,x)
--R
--R
--R              x
--R          ++               n
--R    (177)  |   log(cot(%I) )d%I
--R          ++
--R                                              Type: Union(Expression(Integer),...)
--E 307

--S 308 of 514
--m0258:= a0258-r0258
--E 308

--S 309 of 514
--d0258:= D(m0258,x)
--E 309

--S 310 of 514
t0259:= log(sec(x))
--R
--R
--R    (178)  log(sec(x))
```

84

```
--R                                                            Type: Expression(Integer)
--E 310


--S 311 of 514
r0259:= -1/2*%i*x^2+x*log(1+exp(2*%i*x))+x*log(1/cos(x))-_
        1/2*%i*polylog(2,-exp(2*%i*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 311


--S 312 of 514
a0259:= integrate(t0259,x)
--R
--R
--R             x
--R          ++
--R   (179)  |   log(sec(%I))d%I
--R        ++
--R                                              Type: Union(Expression(Integer),...)
--E 312


--S 313 of 514
--m0259:= a0259-r0259
--E 313


--S 314 of 514
--d0259:= D(m0259,x)
--E 314


--S 315 of 514
t0260:= log(sec(x)^2)
--R
--R
--R                  2
--R   (180)  log(sec(x) )
--R                                                            Type: Expression(Integer)
--E 315
```

```
--S 316 of 514
r0260:= -%i*x^2+2*x*log(1+exp(2*%i*x))+x*log(1/cos(x)^2)-_
        %i*polylog(2,-exp(2*%i*x))
--R
--R    There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                                )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R    Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                               PositiveInteger
--R                        Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 316

--S 317 of 514
a0260:= integrate(t0260,x)
--R
--R
--R              x
--R            ++              2
--R   (181)   |   log(sec(%I) )d%I
--R          ++
--R                                              Type: Union(Expression(Integer),...)
--E 317

--S 318 of 514
--m0260:= a0260-r0260
--E 318

--S 319 of 514
--d0260:= D(m0260,x)
--E 319

--S 320 of 514
t0261:= log(sec(x)^n)
--R
--R
--R                   n
--R   (182)  log(sec(x) )
--R                                              Type: Expression(Integer)
--E 320

--S 321 of 514
r0261:= -1/2*%i*n*x^2+n*x*log(1+exp(2*%i*x))+x*log((1/cos(x))^n)-_
        1/2*%i*n*polylog(2,-exp(2*%i*x))
```

```
--R
--R    There are 15 exposed and 5 unexposed library operations named +
--R        having 2 argument(s) but none was determined to be applicable.
--R        Use HyperDoc Browse, or issue
--R                               )display op +
--R        to learn more about the available operations. Perhaps
--R        package-calling the operation or using coercions on the arguments
--R        will allow you to apply the operation.
--R
--R    Cannot find a definition or applicable library operation named +
--R        with argument type(s)
--R                    Polynomial(Complex(Fraction(Integer)))
--R                      Expression(Complex(Integer))
--R
--R        Perhaps you should use "@" to indicate the required return type,
--R        or "$" to specify which version of the function you need.
--E 321

--S 322 of 514
a0261:= integrate(t0261,x)
--R
--R
--R            x
--R         ++                n
--R   (183)  |   log(sec(%I) )d%I
--R         ++
--R                                              Type: Union(Expression(Integer),...)
--E 322

--S 323 of 514
--m0261:= a0261-r0261
--E 323

--S 324 of 514
--d0261:= D(m0261,x)
--E 324

--S 325 of 514
t0262:= log(csc(x))
--R
--R
--R   (184)  log(csc(x))
--R                                              Type: Expression(Integer)
--E 325

--S 326 of 514
r0262:= -1/2*%i*x^2+x*log(1-exp(2*%i*x))+x*log(1/sin(x))-_
        1/2*%i*polylog(2,exp(2*%i*x))
--R
--R    There are no library operations named polylog
```

```
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 326

--S 327 of 514
a0262:= integrate(t0262,x)
--R
--R
--R            x
--R         ++
--R   (185)  |   log(csc(%I))d%I
--R        ++
--R                                        Type: Union(Expression(Integer),...)
--E 327

--S 328 of 514
--m0262:= a0262-r0262
--E 328

--S 329 of 514
--d0262:= D(m0262,x)
--E 329

--S 330 of 514
t0263:= log(csc(x)^2)
--R
--R
--R                 2
--R   (186)  log(csc(x) )
--R                                        Type: Expression(Integer)
--E 330

--S 331 of 514
r0263:= -%i*x^2+2*x*log(1-exp(2*%i*x))+x*log(1/sin(x)^2)-_
       %i*polylog(2,exp(2*%i*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
```

```
--R       name.
--R
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                  PositiveInteger
--R                         Expression(Complex(Integer))
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 331

--S 332 of 514
a0263:= integrate(t0263,x)
--R
--R
--R              x
--R           ++                 2
--R   (187)  |    log(csc(%I) )d%I
--R           ++
--R                                             Type: Union(Expression(Integer),...)
--E 332

--S 333 of 514
--m0263:= a0263-r0263
--E 333

--S 334 of 514
--d0263:= D(m0263,x)
--E 334

--S 335 of 514
t0264:= log(csc(x)^n)
--R
--R
--R                   n
--R   (188)  log(csc(x) )
--R                                             Type: Expression(Integer)
--E 335

--S 336 of 514
r0264:= -1/2*%i*n*x^2+n*x*log(1-exp(2*%i*x))+x*log((1/sin(x))^n)-_
        1/2*%i*n*polylog(2,exp(2*%i*x))
--R
--R   There are 15 exposed and 5 unexposed library operations named +
--R       having 2 argument(s) but none was determined to be applicable.
--R       Use HyperDoc Browse, or issue
--R                                )display op +
--R       to learn more about the available operations. Perhaps
--R       package-calling the operation or using coercions on the arguments
--R       will allow you to apply the operation.
```

```
--R
--R   Cannot find a definition or applicable library operation named +
--R      with argument type(s)
--R                   Polynomial(Complex(Fraction(Integer)))
--R                      Expression(Complex(Integer))
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 336

--S 337 of 514
a0264:= integrate(t0264,x)
--R
--R
--R              x
--R           ++                n
--R   (189)  |   log(csc(%I) )d%I
--R           ++
--R                                        Type: Union(Expression(Integer),...)
--E 337

--S 338 of 514
--m0264:= a0264-r0264
--E 338

--S 339 of 514
--d0264:= D(m0264,x)
--E 339

--S 340 of 514
t0265:= cos(x)*log(1/2-1/2*cos(2*x))
--R
--R
--R                   - cos(2x) + 1
--R   (190)  cos(x)log(-------------)
--R                        2
--R                                               Type: Expression(Integer)
--E 340

--S 341 of 514
r0265:= sin(x)*(-2+log(sin(x)^2))
--R
--R
--R                        2
--R   (191)  sin(x)log(sin(x) ) - 2sin(x)
--R                                               Type: Expression(Integer)
--E 341

--S 342 of 514
a0265:= integrate(t0265,x)
```

90

```
--R
--R
--R                           2
--R    (192)  sin(x)log(- cos(x)  + 1) - 2sin(x)
--R                                       Type: Union(Expression(Integer),...)
--E 342


--S 343 of 514
m0265:= a0265-r0265
--R
--R
--R                        2                      2
--R    (193)  - sin(x)log(sin(x) ) + sin(x)log(- cos(x)  + 1)
--R                                                 Type: Expression(Integer)
--E 343


--S 344 of 514
d0265:= D(m0265,x)
--R
--R
--R    (194)
--R              3                    2           3                      2
--R       (- cos(x)  + cos(x))log(sin(x) ) + (cos(x)  - cos(x))log(- cos(x)  + 1)
--R     +
--R                    2           3
--R       - 2cos(x)sin(x)  - 2cos(x)  + 2cos(x)
--R  /
--R            2
--R      cos(x)  - 1
--R                                                 Type: Expression(Integer)
--E 344


--S 345 of 514
t0266:= cot(x)/log(exp(1)*sin(x))
--R
--R
--R                cot(x)
--R    (195)  --------------
--R           log(%e sin(x))
--R                                                 Type: Expression(Integer)
--E 345


--S 346 of 514
r0266:= log(1+log(sin(x)))
--R
--R
--R    (196)  log(log(sin(x)) + 1)
--R                                                 Type: Expression(Integer)
--E 346
```

91

```
--S 347 of 514
a0266:= integrate(t0266,x)
--R
--R
--R   (197)  log(log(%e sin(x)))
--R                                          Type: Union(Expression(Integer),...)
--E 347

--S 348 of 514
m0266:= a0266-r0266
--R
--R
--R   (198)  log(log(%e sin(x))) - log(log(sin(x)) + 1)
--R                                                    Type: Expression(Integer)
--E 348

--S 349 of 514
d0266:= D(m0266,x)
--R
--R
--R          - cos(x)log(%e sin(x)) + cos(x)log(sin(x)) + cos(x)
--R   (199)  ---------------------------------------------------
--R                 (sin(x)log(sin(x)) + sin(x))log(%e sin(x))
--R                                                    Type: Expression(Integer)
--E 349

--S 350 of 514
t0267:= cot(x)/log(exp(1)^sin(x))
--R
--R
--R          cot(x)
--R   (200)  ------
--R          sin(x)
--R                                                    Type: Expression(Integer)
--E 350

--S 351 of 514
r0267:= (-log(log(exp(sin(x))))+log(sin(x)))/(log(exp(sin(x)))-sin(x))
--R
--R
--R   >> Error detected within library code:
--R   catdef: division by zero
--R
--R   Continuing to read the file...
--R
--E 351

--S 352 of 514
a0267:= integrate(t0267,x)
--R
```

```
--R
--R                 1
--R   (201)   - ------
--R            sin(x)
--R                                         Type: Union(Expression(Integer),...)
--E 352


--S 353 of 514
--m0267:= a0267-r0267
--E 353


--S 354 of 514
--d0267:= D(m0267,x)
--E 354


--S 355 of 514
t0268:= log(cos(x))*sec(x)^2
--R
--R
--R               2
--R   (202)   sec(x) log(cos(x))
--R                                         Type: Expression(Integer)
--E 355


--S 356 of 514
r0268:= -x+tan(x)+log(cos(x))*tan(x)
--R
--R
--R   (203)   tan(x)log(cos(x)) + tan(x) - x
--R                                         Type: Expression(Integer)
--E 356


--S 357 of 514
a0268:= integrate(t0268,x)
--R
--R
--R          sin(x)log(cos(x)) + sin(x) - x cos(x)
--R   (204)  -------------------------------------
--R                         cos(x)
--R                                         Type: Union(Expression(Integer),...)
--E 357


--S 358 of 514
m0268:= a0268-r0268
--R
--R
--R          (- cos(x)tan(x) + sin(x))log(cos(x)) - cos(x)tan(x) + sin(x)
--R   (205)  -----------------------------------------------------------
--R                                   cos(x)
--R                                         Type: Expression(Integer)
```

```
--E 358

--S 359 of 514
d0268:= D(m0268,x)
--R
--R
--R   (206)
--R            2       2           2                         2       2
--R   (- cos(x) tan(x)  + sin(x) )log(cos(x)) - cos(x) tan(x)  + cos(x)sin(x)tan(x)
--R   -----------------------------------------------------------------------------
--R                                           2
--R                                      cos(x)
--R                                                     Type: Expression(Integer)
--E 359

--S 360 of 514
t0269:= cot(x)*log(sin(x))
--R
--R
--R   (207)  cot(x)log(sin(x))
--R                                                     Type: Expression(Integer)
--E 360

--S 361 of 514
r0269:= 1/2*log(sin(x))^2
--R
--R
--R                   2
--R          log(sin(x))
--R   (208)  ------------
--R                2
--R                                                     Type: Expression(Integer)
--E 361

--S 362 of 514
a0269:= integrate(t0269,x)
--R
--R
--R                   2
--R          log(sin(x))
--R   (209)  ------------
--R                2
--R                                             Type: Union(Expression(Integer),...)
--E 362

--S 363 of 514
m0269:= a0269-r0269
--R
--R
--R   (210)  0
```

94

```
--R                                                     Type: Expression(Integer)
--E 363

--S 364 of 514
d0269:= D(m0269,x)
--R
--R
--R   (211)  0
--R                                                     Type: Expression(Integer)
--E 364

--S 365 of 514
t0270:= tan(x)/log(cos(x))
--R
--R
--R           tan(x)
--R   (212)  -----------
--R         log(cos(x))
--R                                                     Type: Expression(Integer)
--E 365

--S 366 of 514
r0270:= -log(log(cos(x)))
--R
--R
--R   (213)  - log(log(cos(x)))
--R                                                     Type: Expression(Integer)
--E 366

--S 367 of 514
a0270:= integrate(t0270,x)
--R
--R
--R   (214)  - log(log(cos(x)))
--R                                       Type: Union(Expression(Integer),...)
--E 367

--S 368 of 514
m0270:= a0270-r0270
--R
--R
--R   (215)  0
--R                                                     Type: Expression(Integer)
--E 368

--S 369 of 514
d0270:= D(m0270,x)
--R
--R
--R   (216)  0
```

```
--R                                                      Type: Expression(Integer)
--E 369

--S 370 of 514
t0271:= csc(x)*log(tan(x))*sec(x)
--R
--R
--R   (217)  csc(x)sec(x)log(tan(x))
--R                                                      Type: Expression(Integer)
--E 370

--S 371 of 514
r0271:= 1/2*log(tan(x))^2
--R
--R
--R                    2
--R         log(tan(x))
--R   (218)  ------------
--R               2
--R                                                      Type: Expression(Integer)
--E 371

--S 372 of 514
a0271:= integrate(t0271,x)
--R
--R
--R              sin(x) 2
--R         log(------)
--R              cos(x)
--R   (219)  ------------
--R               2
--R                                            Type: Union(Expression(Integer),...)
--E 372

--S 373 of 514
m0271:= a0271-r0271
--R
--R
--R                    2        sin(x) 2
--R         - log(tan(x))  + log(------)
--R                               cos(x)
--R   (220)  ----------------------------
--R                        2
--R                                                      Type: Expression(Integer)
--E 373

--S 374 of 514
d0271:= D(m0271,x)
--R
--R
```

96

```
--R   (221)
--R                         2
--R       (- cos(x)sin(x)tan(x)  - cos(x)sin(x))log(tan(x))
--R    +
--R              2       2           sin(x)
--R       (sin(x)  + cos(x) )tan(x)log(------)
--R                                     cos(x)
--R  /
--R     cos(x)sin(x)tan(x)
--R                                            Type: Expression(Integer)
--E 374

--S 375 of 514
t0272:= csc(2*x)*log(tan(x))
--R
--R
--R   (222)  csc(2x)log(tan(x))
--R                                            Type: Expression(Integer)
--E 375

--S 376 of 514
r0272:= 1/4*log(tan(x))^2
--R
--R
--R                 2
--R          log(tan(x))
--R   (223)  ------------
--R               4
--R                                            Type: Expression(Integer)
--E 376

--S 377 of 514
a0272:= integrate(t0272,x)
--R
--R
--R              sin(x) 2
--R          log(------)
--R              cos(x)
--R   (224)  ------------
--R               4
--R                                       Type: Union(Expression(Integer),...)
--E 377

--S 378 of 514
m0272:= a0272-r0272
--R
--R
--R                     2       sin(x) 2
--R          - log(tan(x))  + log(------)
--R                                cos(x)
```

97

```
--R   (225)  ----------------------------
--R                          4
--R                                                        Type: Expression(Integer)
--E 378


--S 379 of 514
d0272:= D(m0272,x)
--R
--R
--R   (226)
--R                                2
--R      (- cos(x)sin(x)tan(x)  - cos(x)sin(x))log(tan(x))
--R    +
--R             2        2            sin(x)
--R      (sin(x)  + cos(x) )tan(x)log(------)
--R                                   cos(x)
--R  /
--R     2cos(x)sin(x)tan(x)
--R                                                        Type: Expression(Integer)
--E 379


--S 380 of 514
t0273:= log(sinh(x))
--R
--R
--R   (227)  log(sinh(x))
--R                                                        Type: Expression(Integer)
--E 380


--S 381 of 514
r0273:= 1/2*x^2-x*log(1-exp(2*x))+x*log(sinh(x))-1/2*polylog(2,exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                          )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                          PositiveInteger
--R                        Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 381


--S 382 of 514
a0273:= integrate(t0273,x)
--R
```

98

```
--R
--R               x
--R           ++
--R   (228)   |   log(sinh(%I))d%I
--R          ++
--R                                              Type: Union(Expression(Integer),...)
--E 382

--S 383 of 514
--m0273:= a0273-r0273
--E 383

--S 384 of 514
--d0273:= D(m0273,x)
--E 384

--S 385 of 514
t0274:= log(sinh(x)^2)
--R
--R
--R                        2
--R   (229)  log(sinh(x) )
--R                                              Type: Expression(Integer)
--E 385

--S 386 of 514
r0274:= x^2-2*x*log(1-exp(2*x))+x*log(sinh(x)^2)-polylog(2,exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                            PositiveInteger
--R                            Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 386

--S 387 of 514
a0274:= integrate(t0274,x)
--R
--R
--R               x
--R           ++                2
--R   (230)   |   log(sinh(%I) )d%I
```

```
--R            ++
--R                                           Type: Union(Expression(Integer),...)
--E 387


--S 388 of 514
--m0274:= a0274-r0274
--E 388


--S 389 of 514
--d0274:= D(m0274,x)
--E 389


--S 390 of 514
t0275:= log(sinh(x)^n)
--R
--R
--R                      n
--R   (231)  log(sinh(x) )
--R                                              Type: Expression(Integer)
--E 390


--S 391 of 514
r0275:= 1/2*n*x^2-n*x*log(1-exp(2*x))+x*log(sinh(x)^n)-_
        1/2*n*polylog(2,exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                                )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                 PositiveInteger
--R                               Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 391


--S 392 of 514
a0275:= integrate(t0275,x)
--R
--R
--R            x
--R           ++                n
--R   (232)  |    log(sinh(%I) )d%I
--R           ++
--R                                           Type: Union(Expression(Integer),...)
--E 392
```

100

```
--S 393 of 514
--m0275:= a0275-r0275
--E 393


--S 394 of 514
--d0275:= D(m0275,x)
--E 394

--S 395 of 514
t0276:= log(cosh(x))
--R
--R
--R   (233)  log(cosh(x))
--R                                                Type: Expression(Integer)
--E 395


--S 396 of 514
r0276:= 1/2*x^2-x*log(1+exp(2*x))+x*log(cosh(x))-1/2*polylog(2,-exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                               PositiveInteger
--R                             Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 396


--S 397 of 514
a0276:= integrate(t0276,x)
--R
--R
--R               x
--R           ++
--R   (234)  |   log(cosh(%I))d%I
--R          ++
--R                                           Type: Union(Expression(Integer),...)
--E 397


--S 398 of 514
--m0276:= a0276-r0276
--E 398
```

```
--S 399 of 514
--d0276:= D(m0276,x)
--E 399


--S 400 of 514
t0277:= log(cosh(x)^2)
--R
--R
--R                      2
--R   (235)  log(cosh(x) )
--R                                                   Type: Expression(Integer)
--E 400


--S 401 of 514
r0277:= x^2-2*x*log(1+exp(2*x))+x*log(cosh(x)^2)-polylog(2,-exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                             )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 401


--S 402 of 514
a0277:= integrate(t0277,x)
--R
--R
--R             x
--R          ++                2
--R   (236)  |   log(cosh(%I) )d%I
--R          ++
--R                                               Type: Union(Expression(Integer),...)
--E 402


--S 403 of 514
--m0277:= a0277-r0277
--E 403


--S 404 of 514
--d0277:= D(m0277,x)
--E 404
```

```
--S 405 of 514
t0278:= log(cosh(x)^n)
--R
--R
--R                      n
--R   (237)  log(cosh(x) )
--R                                               Type: Expression(Integer)
--E 405


--S 406 of 514
r0278:= 1/2*n*x^2-n*x*log(1+exp(2*x))+x*log(cosh(x)^n)-_
        1/2*n*polylog(2,-exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                           )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                            PositiveInteger
--R                          Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 406


--S 407 of 514
a0278:= integrate(t0278,x)
--R
--R
--R            x
--R          ++            n
--R   (238)  |   log(cosh(%I) )d%I
--R          ++
--R                                           Type: Union(Expression(Integer),...)
--E 407


--S 408 of 514
--m0278:= a0278-r0278
--E 408


--S 409 of 514
--d0278:= D(m0278,x)
--E 409


--S 410 of 514
t0279:= log(tanh(x)^n)
--R
```

```
--R
--R                      n
--R   (239)  log(tanh(x) )
--R                                               Type: Expression(Integer)
--E 410


--S 411 of 514
r0279:= -1/2*log(1-tanh(x))*log(tanh(x)^n)+1/2*log(tanh(x)^n)*_
       log(1+tanh(x))+1/2*n*polylog(2,-tanh(x))-1/2*n*polylog(2,tanh(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                              )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                              PositiveInteger
--R                            Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 411


--S 412 of 514
a0279:= integrate(t0279,x)
--R
--R
--R             x
--R           ++              n
--R   (240)   |   log(tanh(%I) )d%I
--R           ++
--R                                          Type: Union(Expression(Integer),...)
--E 412


--S 413 of 514
--m0279:= a0279-r0279
--E 413


--S 414 of 514
--d0279:= D(m0279,x)
--E 414


--S 415 of 514
t0280:= log(coth(x)^n)
--R
--R
--R                      n
--R   (241)  log(coth(x) )
```

104

```
--R                                                    Type: Expression(Integer)
--E 415


--S 416 of 514
r0280:= -1/2*log(1-coth(x))*log(coth(x)^n)+1/2*log(coth(x)^n)*_
        log(1+coth(x))+1/2*n*polylog(2,-coth(x))-1/2*n*polylog(2,coth(x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                               )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 416


--S 417 of 514
a0280:= integrate(t0280,x)
--R
--R
--R              x
--R           ++                n
--R   (242)   |   log(coth(%I) )d%I
--R         ++
--R                                              Type: Union(Expression(Integer),...)
--E 417


--S 418 of 514
--m0280:= a0280-r0280
--E 418


--S 419 of 514
--d0280:= D(m0280,x)
--E 419


--S 420 of 514
t0281:= log(sech(x))
--R
--R
--R   (243)  log(sech(x))
--R                                                    Type: Expression(Integer)
--E 420


--S 421 of 514
```

105

```
r0281:= -1/2*x^2+x*log(1+exp(2*x))+x*log(1/cosh(x))+1/2*polylog(2,-exp(2*x))
--R
--R    There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                                 )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                  PositiveInteger
--R                                Expression(Integer)
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 421

--S 422 of 514
a0281:= integrate(t0281,x)
--R
--R
--R              x
--R          ++
--R   (244)   |   log(sech(%I))d%I
--R          ++
--R                                          Type: Union(Expression(Integer),...)
--E 422

--S 423 of 514
--m0281:= a0281-r0281
--E 423

--S 424 of 514
--d0281:= D(m0281,x)
--E 424

--S 425 of 514
t0282:= log(sech(x)^2)
--R
--R
--R                    2
--R   (245)  log(sech(x) )
--R                                                   Type: Expression(Integer)
--E 425

--S 426 of 514
r0282:= -x^2+2*x*log(1+exp(2*x))+x*log(1/cosh(x)^2)+polylog(2,-exp(2*x))
--R
--R    There are no library operations named polylog
--R       Use HyperDoc Browse or issue
```

```
--R                               )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 426

--S 427 of 514
a0282:= integrate(t0282,x)
--R
--R
--R            x
--R          ++              2
--R  (246)   |   log(sech(%I) )d%I
--R          ++
--R                                              Type: Union(Expression(Integer),...)
--E 427

--S 428 of 514
--m0282:= a0282-r0282
--E 428

--S 429 of 514
--d0282:= D(m0282,x)
--E 429

--S 430 of 514
t0283:= log(sech(x)^n)
--R
--R
--R                  n
--R  (247)  log(sech(x) )
--R                                                  Type: Expression(Integer)
--E 430

--S 431 of 514
r0283:= -1/2*n*x^2+n*x*log(1+exp(2*x))+x*log((1/cosh(x))^n)+_
       1/2*n*polylog(2,-exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                               )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
```

```
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 431

--S 432 of 514
a0283:= integrate(t0283,x)
--R
--R
--R             x
--R           ++               n
--R   (248)   |   log(sech(%I) )d%I
--R           ++
--R                                          Type: Union(Expression(Integer),...)
--E 432

--S 433 of 514
--m0283:= a0283-r0283
--E 433

--S 434 of 514
--d0283:= D(m0283,x)
--E 434

--S 435 of 514
t0284:= log(csch(x))
--R
--R
--R   (249)  log(csch(x))
--R                                               Type: Expression(Integer)
--E 435

--S 436 of 514
r0284:= -1/2*x^2+x*log(1-exp(2*x))+x*log(1/sinh(x))+1/2*polylog(2,exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                          )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
```

108

```
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 436


--S 437 of 514
a0284:= integrate(t0284,x)
--R
--R
--R               x
--R          ++
--R    (250)  |   log(csch(%I))d%I
--R          ++
--R                                          Type: Union(Expression(Integer),...)
--E 437


--S 438 of 514
--m0284:= a0284-r0284
--E 438


--S 439 of 514
--d0284:= D(m0284,x)
--E 439


--S 440 of 514
t0285:= log(csch(x)^2)
--R
--R
--R                    2
--R    (251)  log(csch(x) )
--R                                                   Type: Expression(Integer)
--E 440


--S 441 of 514
r0285:= -x^2+2*x*log(1-exp(2*x))+x*log(1/sinh(x)^2)+polylog(2,exp(2*x))
--R
--R    There are no library operations named polylog
--R       Use HyperDoc Browse or issue
--R                             )what op polylog
--R       to learn if there is any operation containing " polylog " in its
--R       name.
--R
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                 PositiveInteger
--R                               Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 441
```

```
--S 442 of 514
a0285:= integrate(t0285,x)
--R
--R
--R             x
--R           ++                  2
--R   (252)  |   log(csch(%I) )d%I
--R          ++
--R                                        Type: Union(Expression(Integer),...)
--E 442

--S 443 of 514
--m0285:= a0285-r0285
--E 443

--S 444 of 514
--d0285:= D(m0285,x)
--E 444

--S 445 of 514
t0286:= log(csch(x)^n)
--R
--R
--R                  n
--R   (253)  log(csch(x) )
--R                                              Type: Expression(Integer)
--E 445

--S 446 of 514
r0286:= -1/2*n*x^2+n*x*log(1-exp(2*x))+x*log((1/sinh(x))^n)+_
        1/2*n*polylog(2,exp(2*x))
--R
--R   There are no library operations named polylog
--R      Use HyperDoc Browse or issue
--R                            )what op polylog
--R      to learn if there is any operation containing " polylog " in its
--R      name.
--R
--R   Cannot find a definition or applicable library operation named
--R      polylog with argument type(s)
--R                                PositiveInteger
--R                              Expression(Integer)
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 446

--S 447 of 514
a0286:= integrate(t0286,x)
```

```
--R
--R
--R              x
--R            ++              n
--R    (254)   |   log(csch(%I) )d%I
--R            ++
--R                                              Type: Union(Expression(Integer),...)
--E 447


--S 448 of 514
--m0286:= a0286-r0286
--E 448


--S 449 of 514
--d0286:= D(m0286,x)
--E 449


--S 450 of 514
t0287:= sec(a+b*log(c*x^n))/x
--R
--R
--R                     n
--R          sec(b log(c x ) + a)
--R    (255)  --------------------
--R                    x
--R                                              Type: Expression(Integer)
--E 450


--S 451 of 514
r0287:= atanh(sin(a+b*log(c*x^n)))/b/n
--R
--R
--R                       n
--R          atanh(sin(b log(c x ) + a))
--R    (256)  --------------------------
--R                    b n
--R                                              Type: Expression(Integer)
--E 451


--S 452 of 514
a0287:= integrate(t0287,x)
--R
--R
--R    (257)
--R        log(sin(b n log(x) + b log(c) + a) + 1)
--R      +
--R        - log(sin(b n log(x) + b log(c) + a) - 1)
--R  /
--R      2b n
--R                                              Type: Union(Expression(Integer),...)
```

111

```
--E 452

--S 453 of 514
m0287:= a0287-r0287
--R
--R
--R   (258)
--R                              n
--R        - 2atanh(sin(b log(c x ) + a)) + log(sin(b n log(x) + b log(c) + a) + 1)
--R    +
--R        - log(sin(b n log(x) + b log(c) + a) - 1)
--R  /
--R     2b n
--R                                               Type: Expression(Integer)
--E 453

--S 454 of 514
d0287:= D(m0287,x)
--R
--R
--R   (259)
--R          n                                   n     2
--R        - x cos(b n log(x) + b log(c) + a)sin(b log(c x ) + a)
--R    +
--R           n - 1                         2       n - 1            n
--R        (x x     sin(b n log(x) + b log(c) + a)  - x x     )cos(b log(c x ) + a)
--R    +
--R         n
--R        x cos(b n log(x) + b log(c) + a)
--R  /
--R         n                         2       n            n     2
--R        (x x sin(b n log(x) + b log(c) + a)  - x x )sin(b log(c x ) + a)
--R    +
--R          n                       2       n
--R        - x x sin(b n log(x) + b log(c) + a)  + x x
--R                                               Type: Expression(Integer)
--E 454

--S 455 of 514
t0288:= csc(a+b*log(c*x^n))/x
--R
--R
--R                     n
--R          csc(b log(c x ) + a)
--R   (260)  --------------------
--R                   x
--R                                               Type: Expression(Integer)
--E 455

--S 456 of 514
```

112

```
r0288:= -atanh(cos(a+b*log(c*x^n)))/b/n
--R
--R
--R                             n
--R          atanh(cos(b log(c x ) + a))
--R   (261)  - -------------------------
--R                       b n
--R                                              Type: Expression(Integer)
--E 456


--S 457 of 514
a0288:= integrate(t0288,x)
--R
--R
--R   (262)
--R        - log(cos(b n log(x) + b log(c) + a) + 1)
--R      +
--R        log(cos(b n log(x) + b log(c) + a) - 1)
--R  /
--R      2b n
--R                                              Type: Union(Expression(Integer),...)
--E 457


--S 458 of 514
m0288:= a0288-r0288
--R
--R
--R   (263)
--R                          n
--R        2atanh(cos(b log(c x ) + a)) - log(cos(b n log(x) + b log(c) + a) + 1)
--R      +
--R        log(cos(b n log(x) + b log(c) + a) - 1)
--R  /
--R      2b n
--R                                              Type: Expression(Integer)
--E 458


--S 459 of 514
d0288:= D(m0288,x)
--R
--R
--R   (264)
--R          n - 1                            2     n - 1             n
--R        (x x     cos(b n log(x) + b log(c) + a)  - x x     )sin(b log(c x ) + a)
--R      +
--R          n                                          n     2
--R        - x sin(b n log(x) + b log(c) + a)cos(b log(c x ) + a)
--R      +
--R          n
--R        x sin(b n log(x) + b log(c) + a)
```

113

```
--R  /
--R          n                                    2      n              n   2
--R      (x x cos(b n log(x) + b log(c) + a)  - x x )cos(b log(c x ) + a)
--R    +
--R          n                              2     n
--R      - x x cos(b n log(x) + b log(c) + a)  + x x
--R                                                  Type: Expression(Integer)
--E 459


--S 460 of 514
t0289:= sin(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R          +-------------------+
--R          |            n
--R         \|sin(b log(c x ) + a)
--R   (265)  ---------------------
--R                    x
--R                                                  Type: Expression(Integer)
--E 460


--S 461 of 514
r0289:= 2*EllipticE(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)/b/n
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                             )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                             Expression(Integer)
--R                               PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 461


--S 462 of 514
a0289:= integrate(t0289,x)
--R
--R
--R               +-------------------+
--R          x |            n
--R         ++  \|sin(b log(c %I ) + a)
--R   (266)  |  ---------------------- d%I
--R         ++               %I
--R                                                  Type: Union(Expression(Integer),...)
--E 462
```

114

```
--S 463 of 514
--m0289:= a0289-r0289
--E 463


--S 464 of 514
--d0289:= D(m0289,x)
--E 464


--S 465 of 514
t0290:= sin(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                                +-------------------+
--R                       n        |            n
--R            sin(b log(c x ) + a)\|sin(b log(c x ) + a)
--R    (267)  -----------------------------------------
--R                              x
--R                                                   Type: Expression(Integer)
--E 465


--S 466 of 514
r0290:= 2/3/b/n*(EllipticF(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)-_
         cos(a+b*log(c*x^n))*sin(a+b*log(c*x^n))^(1/2))
--R
--R    There are no library operations named EllipticF
--R       Use HyperDoc Browse or issue
--R                                )what op EllipticF
--R       to learn if there is any operation containing " EllipticF " in
--R       its name.
--R
--R    Cannot find a definition or applicable library operation named
--R       EllipticF with argument type(s)
--R                           Expression(Integer)
--R                              PositiveInteger
--R
--R       Perhaps you should use "@" to indicate the required return type,
--R       or "$" to specify which version of the function you need.
--E 466


--S 467 of 514
a0290:= integrate(t0290,x)
--R
--R
--R                                      +-------------------+
--R             x          n        |            n
--R            ++  sin(b log(c %I ) + a)\|sin(b log(c %I ) + a)
--R    (268)   |   ------------------------------------------- d%I
--R            ++                        %I
--R                                                  Type: Union(Expression(Integer),...)
```

115

```
--E 467

--S 468 of 514
--m0290:= a0290-r0290
--E 468

--S 469 of 514
--d0290:= D(m0290,x)
--E 469

--S 470 of 514
t0291:= sin(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                              +-------------------+
--R                    n      2 |                  n
--R          sin(b log(c x ) + a) \|sin(b log(c x ) + a)
--R   (269)  -----------------------------------------
--R                              x
--R                                              Type: Expression(Integer)
--E 470

--S 471 of 514
r0291:= -2/5/b/n*(-3*EllipticE(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)+_
        cos(a+b*log(c*x^n))*sin(a+b*log(c*x^n))^(3/2))
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                              )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                              Expression(Integer)
--R                               PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 471

--S 472 of 514
a0291:= integrate(t0291,x)
--R
--R
--R                                  +---------------------+
--R            x               n    2 |                  n
--R           ++  sin(b log(c %I ) + a) \|sin(b log(c %I ) + a)
--R   (270)   |   --------------------------------------------- d%I
--R           ++                      %I
```

116

```
--R                                                    Type: Union(Expression(Integer),...)
--E 472


--S 473 of 514
--m0291:= a0291-r0291
--E 473


--S 474 of 514
--d0291:= D(m0291,x)
--E 474


--S 475 of 514
t0292:= 1/x/sin(a+b*log(c*x^n))^(1/2)
--R
--R
--R                      1
--R   (271)  -----------------------
--R              +-------------------+
--R              |               n
--R          x\|sin(b log(c x ) + a)
--R                                                    Type: Expression(Integer)
--E 475


--S 476 of 514
r0292:= 2*EllipticF(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)/b/n
--R
--R   There are no library operations named EllipticF
--R      Use HyperDoc Browse or issue
--R                            )what op EllipticF
--R      to learn if there is any operation containing " EllipticF " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                            Expression(Integer)
--R                              PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 476


--S 477 of 514
a0292:= integrate(t0292,x)
--R
--R
--R             x
--R           ++                1
--R   (272)  |   ------------------------- d%I
--R           ++       +--------------------+
--R                    |               n
```

117

```
--R                     %I\|sin(b log(c %I ) + a)
--R                                            Type: Union(Expression(Integer),...)
--E 477


--S 478 of 514
--m0292:= a0292-r0292
--E 478


--S 479 of 514
--d0292:= D(m0292,x)
--E 479


--S 480 of 514
t0293:= 1/x/sin(a+b*log(c*x^n))^(3/2)
--R
--R
--R                              1
--R   (273)  ---------------------------------------------
--R                           +------------------+
--R                   n       |           n
--R          x sin(b log(c x ) + a)\|sin(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 480


--S 481 of 514
r0293:= -2*EllipticE(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)/b/n-_
        2*cos(a+b*log(c*x^n))/b/n/sin(a+b*log(c*x^n))^(1/2)
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                          )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                          Expression(Integer)
--R                            PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 481


--S 482 of 514
a0293:= integrate(t0293,x)
--R
--R
--R              x
--R          ++                                         1
--R   (274)  |  ----------------------------------------------- d%I
```

118

```
--R             ++                              +--------------------+
--R                          n          |              n
--R             %I sin(b log(c %I ) + a)\|sin(b log(c %I ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 482


--S 483 of 514
--m0293:= a0293-r0293
--E 483


--S 484 of 514
--d0293:= D(m0293,x)
--E 484


--S 485 of 514
t0294:= 1/x/sin(a+b*log(c*x^n))^(5/2)
--R
--R
--R                              1
--R   (275)  -----------------------------------------------
--R                              +--------------------+
--R                  n     2 |              n
--R          x sin(b log(c x ) + a) \|sin(b log(c x ) + a)
--R                                        Type: Expression(Integer)
--E 485


--S 486 of 514
r0294:= 2/3*EllipticF(1/2*a-1/4*%pi+1/2*b*log(c*x^n),2)/b/n-_
        2/3*cos(a+b*log(c*x^n))/b/n/sin(a+b*log(c*x^n))^(3/2)
--R
--R   There are no library operations named EllipticF
--R      Use HyperDoc Browse or issue
--R                              )what op EllipticF
--R      to learn if there is any operation containing " EllipticF " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                              Expression(Integer)
--R                                PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 486


--S 487 of 514
a0294:= integrate(t0294,x)
--R
--R
--R              x
```

```
--R           ++                           1
--R  (276)   |  ------------------------------------------- d%I
--R          ++                          +--------------------+
--R                         n     2 |              n
--R          %I sin(b log(c %I ) + a) \|sin(b log(c %I ) + a)
--R                                    Type: Union(Expression(Integer),...)
--E 487


--S 488 of 514
--m0294:= a0294-r0294
--E 488


--S 489 of 514
--d0294:= D(m0294,x)
--E 489


--S 490 of 514
t0295:= cos(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R           +--------------------+
--R           |            n
--R          \|cos(b log(c x ) + a)
--R  (277)   ----------------------
--R                    x
--R                                               Type: Expression(Integer)
--E 490


--S 491 of 514
r0295:= 2*EllipticE(1/2*a+1/2*b*log(c*x^n),2)/b/n
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                          )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                          Expression(Integer)
--R                            PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 491


--S 492 of 514
a0295:= integrate(t0295,x)
--R
--R
```

```
--R               +-------------------+
--R         x  |                 n
--R        ++  \|cos(b log(c %I ) + a)
--R   (278)  |  ---------------------- d%I
--R        ++              %I
--R                                    Type: Union(Expression(Integer),...)
--E 492


--S 493 of 514
--m0295:= a0295-r0295
--E 493


--S 494 of 514
--d0295:= D(m0295,x)
--E 494


--S 495 of 514
t0296:= cos(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                             +-------------------+
--R             n           |               n
--R        cos(b log(c x ) + a)\|cos(b log(c x ) + a)
--R   (279)  -----------------------------------------
--R                             x
--R                                             Type: Expression(Integer)
--E 495


--S 496 of 514
r0296:= 2/3/b/n*(EllipticF(1/2*a+1/2*b*log(c*x^n),2)+_
        cos(a+b*log(c*x^n))^(1/2)*sin(a+b*log(c*x^n)))
--R
--R  There are no library operations named EllipticF
--R     Use HyperDoc Browse or issue
--R                         )what op EllipticF
--R     to learn if there is any operation containing " EllipticF " in
--R     its name.
--R
--R  Cannot find a definition or applicable library operation named
--R     EllipticF with argument type(s)
--R                         Expression(Integer)
--R                          PositiveInteger
--R
--R     Perhaps you should use "@" to indicate the required return type,
--R     or "$" to specify which version of the function you need.
--E 496


--S 497 of 514
a0296:= integrate(t0296,x)
--R
```

```
--R
--R                                   +--------------------+
--R             x                 n   |                n
--R            ++  cos(b log(c %I ) + a)\|cos(b log(c %I ) + a)
--R   (280)   |   ------------------------------------------ d%I
--R            ++                          %I
--R                                    Type: Union(Expression(Integer),...)
--E 497


--S 498 of 514
--m0296:= a0296-r0296
--E 498


--S 499 of 514
--d0296:= D(m0296,x)
--E 499


--S 500 of 514
t0297:= cos(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                               +-------------------+
--R                  n     2 |                n
--R          cos(b log(c x ) + a) \|cos(b log(c x ) + a)
--R   (281)  -------------------------------------------
--R                              x
--R                                        Type: Expression(Integer)
--E 500


--S 501 of 514
r0297:= 2/5/b/n*(3*EllipticE(1/2*a+1/2*b*log(c*x^n),2)+_
       cos(a+b*log(c*x^n))^(3/2)*sin(a+b*log(c*x^n)))
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                            )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                           Expression(Integer)
--R                            PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 501


--S 502 of 514
a0297:= integrate(t0297,x)
```

```
--R
--R
--R                              +--------------------+
--R            x            n      2 |                n
--R           ++  cos(b log(c %I ) + a) \|cos(b log(c %I ) + a)
--R   (282)   |   -------------------------------------------- d%I
--R           ++                          %I
--R                                          Type: Union(Expression(Integer),...)
--E 502

--S 503 of 514
--m0297:= a0297-r0297
--E 503

--S 504 of 514
--d0297:= D(m0297,x)
--E 504

--S 505 of 514
t0298:= 1/x/cos(a+b*log(c*x^n))^(1/2)
--R
--R
--R                      1
--R   (283)  -----------------------
--R              +------------------+
--R              |            n
--R           x\|cos(b log(c x ) + a)
--R                                                      Type: Expression(Integer)
--E 505

--S 506 of 514
r0298:= 2*EllipticF(1/2*a+1/2*b*log(c*x^n),2)/b/n
--R
--R   There are no library operations named EllipticF
--R      Use HyperDoc Browse or issue
--R                            )what op EllipticF
--R      to learn if there is any operation containing " EllipticF " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                             Expression(Integer)
--R                               PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 506

--S 507 of 514
a0298:= integrate(t0298,x)
```

```
--R
--R
--R                x
--R           ++                 1
--R   (284)  |   ------------------------ d%I
--R           ++      +--------------------+
--R                  |               n
--R              %I\|cos(b log(c %I ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 507


--S 508 of 514
--m0298:= a0298-r0298
--E 508


--S 509 of 514
--d0298:= D(m0298,x)
--E 509


--S 510 of 514
t0299:= 1/x/cos(a+b*log(c*x^n))^(3/2)
--R
--R
--R                              1
--R   (285)  ---------------------------------------------
--R                              +-------------------+
--R                     n        |            n
--R          x cos(b log(c x ) + a)\|cos(b log(c x ) + a)
--R                                        Type: Expression(Integer)
--E 510


--S 511 of 514
r0299:= -2*EllipticE(1/2*a+1/2*b*log(c*x^n),2)/b/n+_
        2*sin(a+b*log(c*x^n))/b/n/cos(a+b*log(c*x^n))^(1/2)
--R
--R   There are no library operations named EllipticE
--R      Use HyperDoc Browse or issue
--R                            )what op EllipticE
--R      to learn if there is any operation containing " EllipticE " in
--R      its name.
--R
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                            Expression(Integer)
--R                             PositiveInteger
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 511
```

```
--S 512 of 514
a0299:= integrate(t0299,x)
--R
--R
--R              x
--R          ++                              1
--R   (286)  |   ----------------------------------------------- d%I
--R          ++                       +--------------------+
--R                          n        |           n
--R                %I cos(b log(c %I ) + a)\|cos(b log(c %I ) + a)
--R                                       Type: Union(Expression(Integer),...)
--E 512

--S 513 of 514
--m0299:= a0299-r0299
--E 513

--S 514 of 514
--d0299:= D(m0299,x)
--E 514

)spool
```
——————-

References

[1] Albert D. Rich "Rule-based Mathematics" `www.apmaths.uwo.ca/~arich`