$SPAD/src/input richlog300-391.input

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Abstract

Contents

```
                 ___ * ___
)set break resume
)sys rm -f richlog300-391.output
)spool richlog300-391.output
)set message test on
)set message auto off
)clear all

--S 1 of 460
t0300:= 1/x/cos(a+b*log(c*x^n))^(5/2)
--R
--R
--R                            1
--R   (1)  ----------------------------------------------
--R                              +-------------------+
--R                      n     2 |              n
--R         x cos(b log(c x ) + a) \|cos(b log(c x ) + a)
--R                                               Type: Expression(Integer)
--E 1

--S 2 of 460
r0300:= 2/3*EllipticF(1/2*a+1/2*b*log(c*x^n),2)/b/n+_
        2/3*sin(a+b*log(c*x^n))/b/n/cos(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
--RDaly Bug
--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 2

--S 3 of 460
a0300:= integrate(t0300,x)
--R
--R
--R            x
--R           ++                       1
--R   (2)  |   ---------------------------------------------------- d%R
--R           ++                         +--------------------+
```

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```
--R                                  n      2 |             n
--R            %R cos(b log(c %R ) + a) \|cos(b log(c %R ) + a)
--R                                         Type: Union(Expression(Integer),...)
--E 3


--S 4 of 460
--m0300:= a0300-r0300
--E 4

--S 5 of 460
--d0300:= D(m0300,x)
--E 5


)clear all

--S 6 of 460
t0301:= sec(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R           +-------------------+
--R           |               n
--R           \|sec(b log(c x ) + a)
--R   (1)  -----------------------
--R                   x
--R                                              Type: Expression(Integer)
--E 6


--S 7 of 460
r0301:= 2*cos(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a+1/2*b*log(c*x^n),2)*_
        sec(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 7


--S 8 of 460
a0301:= integrate(t0301,x)
--R
```

```
--R
--R                 +--------------------+
--R          x  |                 n
--R          ++  \|sec(b log(c %R ) + a)
--R   (2)    |   ---------------------- d%R
--R          ++              %R
--R                                        Type: Union(Expression(Integer),...)
--E 8

--S 9 of 460
--m0301:= a0301-r0301
--E 9

--S 10 of 460
--d0301:= D(m0301,x)
--E 10

)clear all

--S 11 of 460
t0302:= sec(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                       +--------------------+
--R             n         |            n
--R        sec(b log(c x ) + a)\|sec(b log(c x ) + a)
--R   (1)  -------------------------------------------
--R                           x
--R                                            Type: Expression(Integer)
--E 11

--S 12 of 460
r0302:= -2*cos(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a+1/2*b*log(c*x^n),2)*_
        sec(a+b*log(c*x^n))^(1/2)/b/n+2*sec(a+b*log(c*x^n))^(1/2)*_
        sin(a+b*log(c*x^n))/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
--RDaly Bug
--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 12

--S 13 of 460
a0302:= integrate(t0302,x)
--R
--R
--R                                +--------------------+
--R          x                n    |                n
--R         ++  sec(b log(c %R ) + a)\|sec(b log(c %R ) + a)
--R   (2)   |   -------------------------------------------- d%R
--R         ++                       %R
--R                                        Type: Union(Expression(Integer),...)
--E 13

--S 14 of 460
--m0302:= a0302-r0302
--E 14

--S 15 of 460
--d0302:= D(m0302,x)
--E 15

)clear all

--S 16 of 460
t0303:= sec(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                            +-------------------+
--R                n     2 |                n
--R         sec(b log(c x ) + a) \|sec(b log(c x ) + a)
--R   (1)   -----------------------------------------
--R                             x
--R                                              Type: Expression(Integer)
--E 16

--S 17 of 460
r0303:= 2/3*cos(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a+1/2*b*log(c*x^n),2)*_
        sec(a+b*log(c*x^n))^(1/2)/b/n+2/3*sec(a+b*log(c*x^n))^(3/2)*_
        sin(a+b*log(c*x^n))/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
```

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```
--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 17


--S 18 of 460
a0303:= integrate(t0303,x)
--R
--R
--R                                +--------------------+
--R          x             n     2 |             n
--R          ++  sec(b log(c %R ) + a) \|sec(b log(c %R ) + a)
--R   (2)    |   ------------------------------------------- d%R
--R          ++                         %R
--R                                         Type: Union(Expression(Integer),...)
--E 18


--S 19 of 460
--m0303:= a0303-r0303
--E 19


--S 20 of 460
--d0303:= D(m0303,x)
--E 20


)clear all

--S 21 of 460
t0304:= 1/x/sec(a+b*log(c*x^n))^(1/2)
--R
--R
--R                   1
--R   (1)  -----------------------
--R            +--------------------+
--R            |             n
--R         x\|sec(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 21


--S 22 of 460
r0304:= 2*cos(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a+1/2*b*log(c*x^n),2)*_
        sec(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 22

--S 23 of 460
a0304:= integrate(t0304,x)
--R
--R
--R           x
--R         ++                1
--R   (2)   |   ------------------------- d%R
--R         ++      +--------------------+
--R              |            n
--R            %R\|sec(b log(c %R ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 23

--S 24 of 460
--m0304:= a0304-r0304
--E 24

--S 25 of 460
--d0304:= D(m0304,x)
--E 25

)clear all

--S 26 of 460
t0305:= 1/x/sec(a+b*log(c*x^n))^(3/2)
--R
--R
--R                              1
--R   (1)  ---------------------------------------------
--R                           +-------------------+
--R                   n       |            n
--R         x sec(b log(c x ) + a)\|sec(b log(c x ) + a)
--R                                           Type: Expression(Integer)
--E 26

--S 27 of 460
r0305:= 2/3*cos(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a+_
       1/2*b*log(c*x^n),2)*sec(a+b*log(c*x^n))^(1/2)/b/n+_
       2/3*sin(a+b*log(c*x^n))/b/n/sec(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
--RDaly Bug
--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 27

--S 28 of 460
a0305:= integrate(t0305,x)
--R
--R
--R             x
--R         ++                              1
--R   (2)   |   ----------------------------------------------- d%R
--R         ++                              +--------------------+
--R                         n       |              n
--R            %R sec(b log(c %R ) + a)\|sec(b log(c %R ) + a)
--R                                      Type: Union(Expression(Integer),...)
--E 28

--S 29 of 460
--m0305:= a0305-r0305
--E 29

--S 30 of 460
--d0305:= D(m0305,x)
--E 30

)clear all

--S 31 of 460
t0306:= 1/x/sec(a+b*log(c*x^n))^(5/2)
--R
--R
--R                             1
--R   (1)  -----------------------------------------------
--R                             +-------------------+
--R                     n     2 |              n
--R        x sec(b log(c x ) + a) \|sec(b log(c x ) + a)
--R                                      Type: Expression(Integer)
```

```
--E 31

--S 32 of 460
r0306:= 6/5*cos(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a+_
        1/2*b*log(c*x^n),2)*sec(a+b*log(c*x^n))^(1/2)/b/n+_
        2/5*sin(a+b*log(c*x^n))/b/n/sec(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
--RDaly Bug
--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 32

--S 33 of 460
a0306:= integrate(t0306,x)
--R
--R
--R            x
--R          ++                             1
--R   (2)   |   ------------------------------------------------ d%R
--R          ++                            +--------------------+
--R                              n     2 |               n
--R            %R sec(b log(c %R ) + a) \|sec(b log(c %R ) + a)
--R                                           Type: Union(Expression(Integer),...)
--E 33

--S 34 of 460
--m0306:= a0306-r0306
--E 34

--S 35 of 460
--d0306:= D(m0306,x)
--E 35

)clear all

--S 36 of 460
t0307:= csc(a+b*log(c*x^n))^(1/2)/x
--R
--R
```

```
--R        +-------------------+
--R        |              n
--R       \|csc(b log(c x ) + a)
--R   (1) ----------------------
--R                 x
--R                                              Type: Expression(Integer)
--E 36


--S 37 of 460
r0307:= 2*csc(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 37


--S 38 of 460
a0307:= integrate(t0307,x)
--R
--R
--R               +-------------------+
--R          x |              n
--R         ++  \|csc(b log(c %R ) + a)
--R   (2)   |   ---------------------- d%R
--R         ++              %R
--R                                         Type: Union(Expression(Integer),...)
--E 38


--S 39 of 460
--m0307:= a0307-r0307
--E 39


--S 40 of 460
--d0307:= D(m0307,x)
--E 40


)clear all
```

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```
--S 41 of 460
t0308:= csc(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                                   +-------------------+
--R                      n           |              n
--R          csc(b log(c x ) + a)\|csc(b log(c x ) + a)
--R    (1)   -----------------------------------------
--R                                   x
--R                                                       Type: Expression(Integer)
--E 41


--S 42 of 460
r0308:= -2*cos(a+b*log(c*x^n))*csc(a+b*log(c*x^n))^(1/2)/b/n-_
        2*csc(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 42


--S 43 of 460
a0308:= integrate(t0308,x)
--R
--R
--R                                   +--------------------+
--R          x               n       |              n
--R         ++  csc(b log(c %R ) + a)\|csc(b log(c %R ) + a)
--R    (2)   |   --------------------------------------------- d%R
--R         ++                        %R
--R                                                       Type: Union(Expression(Integer),...)
--E 43


--S 44 of 460
--m0308:= a0308-r0308
--E 44


--S 45 of 460
```

```
--d0308:= D(m0308,x)
--E 45

)clear all

--S 46 of 460
t0309:= csc(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                                   +-------------------+
--R                      n      2 |                  n
--R          csc(b log(c x ) + a) \|csc(b log(c x ) + a)
--R    (1)  -------------------------------------------
--R                                    x
--R                                                        Type: Expression(Integer)
--E 46


--S 47 of 460
r0309:= -2/3*cos(a+b*log(c*x^n))*csc(a+b*log(c*x^n))^(3/2)/b/n+_
        2/3*csc(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 47


--S 48 of 460
a0309:= integrate(t0309,x)
--R
--R
--R                                  +-------------------+
--R           x            n      2 |                  n
--R          ++  csc(b log(c %R ) + a) \|csc(b log(c %R ) + a)
--R    (2)   |   ------------------------------------------- d%R
--R          ++                        %R
--R                                                        Type: Union(Expression(Integer),...)
--E 48
```

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```
--S 49 of 460
--m0309:= a0309-r0309
--E 49


--S 50 of 460
--d0309:= D(m0309,x)
--E 50


)clear all

--S 51 of 460
t0310:= 1/x/csc(a+b*log(c*x^n))^(1/2)
--R
--R
--R                       1
--R   (1)  ----------------------
--R            +-------------------+
--R            |                 n
--R         x\|csc(b log(c x ) + a)
--R                                                    Type: Expression(Integer)
--E 51


--S 52 of 460
r0310:= 2*csc(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 52


--S 53 of 460
a0310:= integrate(t0310,x)
--R
--R
--R            x
--R          ++                1
--R   (2)  |  ------------------------- d%R
--R          ++      +--------------------+
```

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```
--R                    |                 n
--R            %R\|csc(b log(c %R ) + a)
--R                                       Type: Union(Expression(Integer),...)
--E 53


--S 54 of 460
--m0310:= a0310-r0310
--E 54


--S 55 of 460
--d0310:= D(m0310,x)
--E 55


)clear all

--S 56 of 460
t0311:= 1/x/csc(a+b*log(c*x^n))^(3/2)
--R
--R
--R                              1
--R   (1)  ---------------------------------------------
--R                              +-------------------+
--R                   n          |              n
--R         x csc(b log(c x ) + a)\|csc(b log(c x ) + a)
--R                                                Type: Expression(Integer)
--E 56


--S 57 of 460
r0311:= -2/3*cos(a+b*log(c*x^n))/b/n/csc(a+b*log(c*x^n))^(1/2)+_
        2/3*csc(a+b*log(c*x^n))^(1/2)*EllipticF(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--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 57


--S 58 of 460
a0311:= integrate(t0311,x)
```

```
--R
--R
--R             x
--R        ++                              1
--R   (2)  |   ---------------------------------------------- d%R
--R        ++                            +--------------------+
--R                           n          |          n
--R             %R csc(b log(c %R ) + a)\|csc(b log(c %R ) + a)
--R                                      Type: Union(Expression(Integer),...)
--E 58


--S 59 of 460
--m0311:= a0311-r0311
--E 59


--S 60 of 460
--d0311:= D(m0311,x)
--E 60


)clear all

--S 61 of 460
t0312:= 1/x/csc(a+b*log(c*x^n))^(5/2)
--R
--R
--R                             1
--R   (1)  ----------------------------------------------
--R                             +-------------------+
--R                   n     2 |              n
--R        x csc(b log(c x ) + a) \|csc(b log(c x ) + a)
--R                                           Type: Expression(Integer)
--E 61


--S 62 of 460
r0312:= -2/5*cos(a+b*log(c*x^n))/b/n/csc(a+b*log(c*x^n))^(3/2)+_
        6/5*csc(a+b*log(c*x^n))^(1/2)*EllipticE(1/2*a-1/4*%pi+_
        1/2*b*log(c*x^n),2)*sin(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--R    Cannot find a definition or applicable library operation named
--R       EllipticE with argument type(s)
--R                             Expression(Integer)
--R                             PositiveInteger
--R
```

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```
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 62

--S 63 of 460
a0312:= integrate(t0312,x)
--R
--R
--R            x
--R         ++                                   1
--R   (2)   |   --------------------------------------------- d%R
--R         ++                             +-------------------+
--R                             n      2 |                 n
--R              %R csc(b log(c %R ) + a) \|csc(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 63

--S 64 of 460
--m0312:= a0312-r0312
--E 64

--S 65 of 460
--d0312:= D(m0312,x)
--E 65

)clear all

--S 66 of 460
t0313:= sin(log(a+b*x))
--R
--R
--R   (1)  sin(log(b x + a))
--R                                                 Type: Expression(Integer)
--E 66

--S 67 of 460
r0313:= -1/2*(a+b*x)*(cos(log(a+b*x))-sin(log(a+b*x)))/b
--R
--R
--R        (b x + a)sin(log(b x + a)) + (- b x - a)cos(log(b x + a))
--R   (2)  -------------------------------------------------------
--R                                   2b
--R                                                 Type: Expression(Integer)
--E 67

--S 68 of 460
a0313:= integrate(t0313,x)
--R
--R
--R        (b x + a)sin(log(b x + a)) + (- b x - a)cos(log(b x + a))
```

```
--R   (3)  ---------------------------------------------------------
--R                                       2b
--R                                               Type: Union(Expression(Integer),...)
--E 68

--S 69 of 460
m0313:= a0313-r0313
--R
--R
--R   (4)  0
--R                                               Type: Expression(Integer)
--E 69

--S 70 of 460
d0313:= D(m0313,x)
--R
--R
--R   (5)  0
--R                                               Type: Expression(Integer)
--E 70

)clear all

--S 71 of 460
t0314:= tanh(a+b*log(c*x^n))^2/x
--R
--R
--R                     n      2
--R        tanh(b log(c x ) + a)
--R   (1)  ---------------------
--R                   x
--R                                               Type: Expression(Integer)
--E 71

--S 72 of 460
r0314:= 1/b/n*(b*log(c*x^n)-tanh(a+b*log(c*x^n)))
--R
--R
--R                     n                  n
--R        - tanh(b log(c x ) + a) + b log(c x )
--R   (2)  ------------------------------------
--R                       b n
--R                                               Type: Expression(Integer)
--E 72

--S 73 of 460
a0314:= integrate(t0314,x)
--R
--R
--R   (3)
```

18

```
--R         - sinh(b n log(x) + b log(c) + a)
--R     +
--R        (b n log(x) + 1)cosh(b n log(x) + b log(c) + a)
--R  /
--R     b n cosh(b n log(x) + b log(c) + a)
--R                                         Type: Union(Expression(Integer),...)
--E 73

--S 74 of 460
m0314:= a0314-r0314
--R
--R
--R   (4)
--R                                                      n
--R        cosh(b n log(x) + b log(c) + a)tanh(b log(c x ) + a)
--R     +
--R         - sinh(b n log(x) + b log(c) + a)
--R     +
--R                                                  n
--R         - b cosh(b n log(x) + b log(c) + a)log(c x )
--R     +
--R        (b n log(x) + 1)cosh(b n log(x) + b log(c) + a)
--R  /
--R     b n cosh(b n log(x) + b log(c) + a)
--R                                                 Type: Expression(Integer)
--E 74

--S 75 of 460
d0314:= D(m0314,x)
--R
--R
--R   (5)
--R            n - 1                                2                 n      2
--R       - x x     cosh(b n log(x) + b log(c) + a) tanh(b log(c x ) + a)
--R     +
--R         n                               2
--R        x sinh(b n log(x) + b log(c) + a)
--R  /
--R         n                               2
--R     x x cosh(b n log(x) + b log(c) + a)
--R                                                 Type: Expression(Integer)
--E 75

)clear all

--S 76 of 460
t0315:= coth(a+b*log(c*x^n))^2/x
--R
--R
--R                      n       2
```

```
--R         coth(b log(c x ) + a)
--R   (1)  ---------------------
--R                  x
--R                                              Type: Expression(Integer)
--E 76


--S 77 of 460
r0315:= -1/b/n*(coth(a+b*log(c*x^n))-b*log(c*x^n))
--R
--R
--R                     n                    n
--R        - coth(b log(c x ) + a) + b log(c x )
--R   (2)  ------------------------------------
--R                     b n
--R                                              Type: Expression(Integer)
--E 77


--S 78 of 460
a0315:= integrate(t0315,x)
--R
--R
--R   (3)
--R        (b n log(x) + 1)sinh(b n log(x) + b log(c) + a)
--R     +
--R        - cosh(b n log(x) + b log(c) + a)
--R  /
--R     b n sinh(b n log(x) + b log(c) + a)
--R                                    Type: Union(Expression(Integer),...)
--E 78


--S 79 of 460
m0315:= a0315-r0315
--R
--R
--R   (4)
--R                                                      n
--R        sinh(b n log(x) + b log(c) + a)coth(b log(c x ) + a)
--R     +
--R                   n
--R        (- b log(c x ) + b n log(x) + 1)sinh(b n log(x) + b log(c) + a)
--R     +
--R        - cosh(b n log(x) + b log(c) + a)
--R  /
--R     b n sinh(b n log(x) + b log(c) + a)
--R                                              Type: Expression(Integer)
--E 79


--S 80 of 460
d0315:= D(m0315,x)
--R
```

```
--R
--R   (5)
--R            n - 1                                    2            n      2
--R        - x x     sinh(b n log(x) + b log(c) + a)  coth(b log(c x ) + a)
--R    +
--R        n                                     2
--R      x cosh(b n log(x) + b log(c) + a)
--R  /
--R        n                                   2
--R    x x sinh(b n log(x) + b log(c) + a)
--R                                                      Type: Expression(Integer)
--E 80


)clear all


--S 81 of 460
t0316:= sinh(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R          +--------------------+
--R          |               n
--R          \|sinh(b log(c x ) + a)
--R   (1)  -----------------------
--R                    x
--R                                                      Type: Expression(Integer)
--E 81


--S 82 of 460
r0316:= -2*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
        sinh(a+b*log(c*x^n))^(1/2)/b/n/(%i*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                  Expression(Complex(Fraction(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 82


--S 83 of 460
a0316:= integrate(t0316,x)
--R
```

```
--R
--R                 +--------------------+
--R          x  |                 n
--R         ++  \|sinh(b log(c %R ) + a)
--R   (2)   |   ---------------------- d%R
--R         ++               %R
--R                                      Type: Union(Expression(Integer),...)
--E 83


--S 84 of 460
--m0316:= a0316-r0316
--E 84


--S 85 of 460
--d0316:= D(m0316,x)
--E 85


)clear all


--S 86 of 460
t0317:= sinh(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                            +--------------------+
--R                   n        |                n
--R        sinh(b log(c x ) + a)\|sinh(b log(c x ) + a)
--R   (1)  --------------------------------------------
--R                            x
--R                                        Type: Expression(Integer)
--E 86


--S 87 of 460
r0317:= 2/3*%i*EllipticF(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
       (%i*sinh(a+b*log(c*x^n)))^(1/2)/b/n/sinh(a+b*log(c*x^n))^(1/2)+_
       2/3*cosh(a+b*log(c*x^n))*sinh(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                   Expression(Complex(Fraction(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 87

--S 88 of 460
a0317:= integrate(t0317,x)
--R
--R
--R                                +---------------------+
--R            x               n   |              n
--R         ++  sinh(b log(c %R ) + a)\|sinh(b log(c %R ) + a)
--R   (2)   |   ---------------------------------------------- d%R
--R         ++                      %R
--R                                      Type: Union(Expression(Integer),...)
--E 88

--S 89 of 460
--m0317:= a0317-r0317
--E 89

--S 90 of 460
--d0317:= D(m0317,x)
--E 90

)clear all

--S 91 of 460
t0318:= sinh(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                           +-------------------+
--R                  n     2 |              n
--R         sinh(b log(c x ) + a) \|sinh(b log(c x ) + a)
--R   (1)   -------------------------------------------
--R                            x
--R                                            Type: Expression(Integer)
--E 91

--S 92 of 460
r0318:= 6/5*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
        sinh(a+b*log(c*x^n))^(1/2)/b/n/(%i*sinh(a+b*log(c*x^n)))^(1/2)+_
        2/5*cosh(a+b*log(c*x^n))*sinh(a+b*log(c*x^n))^(3/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
```

```
--R                   Expression(Complex(Fraction(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 92


--S 93 of 460
a0318:= integrate(t0318,x)
--R
--R
--R                                       +--------------------+
--R           x                n        2 |              n
--R           ++  sinh(b log(c %R ) + a) \|sinh(b log(c %R ) + a)
--R   (2)    |   ---------------------------------------------- d%R
--R          ++                          %R
--R                                         Type: Union(Expression(Integer),...)
--E 93


--S 94 of 460
--m0318:= a0318-r0318
--E 94


--S 95 of 460
--d0318:= D(m0318,x)
--E 95


)clear all


--S 96 of 460
t0319:= 1/x/sinh(a+b*log(c*x^n))^(1/2)
--R
--R
--R                      1
--R   (1)  -----------------------
--R            +--------------------+
--R            |              n
--R        x\|sinh(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 96


--S 97 of 460
r0319:= -2*%i*EllipticF(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
        (%i*sinh(a+b*log(c*x^n)))^(1/2)/b/n/sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                    Expression(Complex(Fraction(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 97


--S 98 of 460
a0319:= integrate(t0319,x)
--R
--R
--R             x
--R          ++                1
--R   (2)    |    ------------------------- d%R
--R          ++       +--------------------+
--R                   |             n
--R               %R\|sinh(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 98


--S 99 of 460
--m0319:= a0319-r0319
--E 99


--S 100 of 460
--d0319:= D(m0319,x)
--E 100


)clear all

--S 101 of 460
t0320:= 1/x/sinh(a+b*log(c*x^n))^(3/2)
--R
--R
--R                                1
--R   (1)  -----------------------------------------------
--R                          +--------------------+
--R                   n      |             n
--R        x sinh(b log(c x ) + a)\|sinh(b log(c x ) + a)
--R                                          Type: Expression(Integer)
--E 101


--S 102 of 460
r0320:= -2*cosh(a+b*log(c*x^n))/b/n/sinh(a+b*log(c*x^n))^(1/2)-_
        2*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
        sinh(a+b*log(c*x^n))^(1/2)/b/n/(%i*sinh(a+b*log(c*x^n)))^(1/2)
```

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```
--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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                    Expression(Complex(Fraction(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 102

--S 103 of 460
a0320:= integrate(t0320,x)
--R
--R
--R            x
--R        ++                         1
--R   (2)  |   --------------------------------------------------- d%R
--R        ++                              +---------------------+
--R                          n       |             n
--R             %R sinh(b log(c %R ) + a)\|sinh(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 103

--S 104 of 460
--m0320:= a0320-r0320
--E 104

--S 105 of 460
--d0320:= D(m0320,x)
--E 105

)clear all

--S 106 of 460
t0321:= 1/x/sinh(a+b*log(c*x^n))^(5/2)
--R
--R
--R                               1
--R   (1)  -------------------------------------------------
--R                              +--------------------+
--R                      n     2 |             n
--R        x sinh(b log(c x ) + a) \|sinh(b log(c x ) + a)
--R                                            Type: Expression(Integer)
```

```
--E 106

--S 107 of 460
r0321:= -2/3*cosh(a+b*log(c*x^n))/b/n/sinh(a+b*log(c*x^n))^(3/2)+_
        2/3*%i*EllipticF(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
        (%i*sinh(a+b*log(c*x^n)))^(1/2)/b/n/sinh(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
--RDaly Bug
--R    Cannot find a definition or applicable library operation named
--R       EllipticF with argument type(s)
--R                    Expression(Complex(Fraction(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 107

--S 108 of 460
a0321:= integrate(t0321,x)
--R
--R
--R            x
--R         ++                                  1
--R   (2)   |   ----------------------------------------------------- d%R
--R         ++                                    +---------------------+
--R                           n      2 |                   n
--R             %R sinh(b log(c %R ) + a) \|sinh(b log(c %R ) + a)
--R                                           Type: Union(Expression(Integer),...)
--E 108

--S 109 of 460
--m0321:= a0321-r0321
--E 109

--S 110 of 460
--d0321:= D(m0321,x)
--E 110

)clear all

--S 111 of 460
t0322:= cosh(a+b*log(c*x^n))^(1/2)/x
--R
--R
```

```
--R         +--------------------+
--R         |                  n
--R       \|cosh(b log(c x ) + a)
--R   (1)  ----------------------
--R                 x
--R                                                Type: Expression(Integer)
--E 111


--S 112 of 460
r0322:= -2*%i*EllipticE(1/2*%i*(a+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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                   Expression(Complex(Fraction(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 112


--S 113 of 460
a0322:= integrate(t0322,x)
--R
--R
--R               +---------------------+
--R          x  |                  n
--R        ++  \|cosh(b log(c %R ) + a)
--R   (2)  |   ----------------------- d%R
--R        ++                %R
--R                                            Type: Union(Expression(Integer),...)
--E 113


--S 114 of 460
--m0322:= a0322-r0322
--E 114


--S 115 of 460
--d0322:= D(m0322,x)
--E 115


)clear all


--S 116 of 460
```

```
        t0323:= cosh(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                              +--------------------+
--R                  n          |              n
--R          cosh(b log(c x ) + a)\|cosh(b log(c x ) + a)
--R    (1)  -------------------------------------------
--R                              x
--R                                              Type: Expression(Integer)
--E 116


--S 117 of 460
r0323:= -2/3/b/n*(%i*EllipticF(1/2*%i*(a+b*log(c*x^n)),2)-_
        cosh(a+b*log(c*x^n))^(1/2)*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                 Expression(Complex(Fraction(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 117


--S 118 of 460
a0323:= integrate(t0323,x)
--R
--R
--R                                   +----------------------+
--R           x                n     |              n
--R          ++   cosh(b log(c %R ) + a)\|cosh(b log(c %R ) + a)
--R    (2)  |   ------------------------------------------- d%R
--R          ++                       %R
--R                                              Type: Union(Expression(Integer),...)
--E 118


--S 119 of 460
--m0323:= a0323-r0323
--E 119


--S 120 of 460
--d0323:= D(m0323,x)
--E 120
```

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```
)clear all

--S 121 of 460
t0324:= cosh(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                          +--------------------+
--R                   n      2 |                  n
--R         cosh(b log(c x ) + a) \|cosh(b log(c x ) + a)
--R   (1)  --------------------------------------------
--R                                  x
--R                                                    Type: Expression(Integer)
--E 121


--S 122 of 460
r0324:= 2/5/b/n*(-3*%i*EllipticE(1/2*%i*(a+b*log(c*x^n)),2)+_
          cosh(a+b*log(c*x^n))^(3/2)*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                   Expression(Complex(Fraction(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 122


--S 123 of 460
a0324:= integrate(t0324,x)
--R
--R
--R                              +--------------------+
--R          x              n      2 |                  n
--R           ++  cosh(b log(c %R ) + a) \|cosh(b log(c %R ) + a)
--R   (2)   |   ----------------------------------------------- d%R
--R           ++                         %R
--R                                                    Type: Union(Expression(Integer),...)
--E 123


--S 124 of 460
--m0324:= a0324-r0324
--E 124
```

```
--S 125 of 460
--d0324:= D(m0324,x)
--E 125

)clear all

--S 126 of 460
t0325:= 1/x/cosh(a+b*log(c*x^n))^(1/2)
--R
--R
--R                    1
--R   (1)  ------------------------
--R            +--------------------+
--R            |              n
--R         x\|cosh(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 126


--S 127 of 460
r0325:= -2*%i*EllipticF(1/2*%i*(a+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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                 Expression(Complex(Fraction(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 127


--S 128 of 460
a0325:= integrate(t0325,x)
--R
--R
--R            x
--R           ++                1
--R   (2)  |  -------------------------- d%R
--R           ++       +--------------------+
--R                    |              n
--R              %R\|cosh(b log(c %R ) + a)
--R                                              Type: Union(Expression(Integer),...)
--E 128
```

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```
--S 129 of 460
--m0325:= a0325-r0325
--E 129


--S 130 of 460
--d0325:= D(m0325,x)
--E 130


)clear all

--S 131 of 460
t0326:= 1/x/cosh(a+b*log(c*x^n))^(3/2)
--R
--R
--R                              1
--R   (1)  -----------------------------------------------
--R                          +--------------------+
--R                 n        |                n
--R         x cosh(b log(c x ) + a)\|cosh(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 131


--S 132 of 460
r0326:= 2*%i*EllipticE(1/2*%i*(a+b*log(c*x^n)),2)/b/n+_
        2*sinh(a+b*log(c*x^n))/b/n/cosh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R       EllipticE with argument type(s)
--R                   Expression(Complex(Fraction(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 132


--S 133 of 460
a0326:= integrate(t0326,x)
--R
--R
--R            x
--R          ++                         1
--R   (2)  |  --------------------------------------------------- d%R
```

```
--R          ++                              +--------------------+
--R                          n    |              n
--R          %R cosh(b log(c %R ) + a)\|cosh(b log(c %R ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 133


--S 134 of 460
--m0326:= a0326-r0326
--E 134


--S 135 of 460
--d0326:= D(m0326,x)
--E 135


)clear all

--S 136 of 460
t0327:= 1/x/cosh(a+b*log(c*x^n))^(5/2)
--R
--R
--R                              1
--R    (1)  -------------------------------------------------
--R                              +--------------------+
--R                    n     2 |              n
--R          x cosh(b log(c x ) + a) \|cosh(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 136


--S 137 of 460
r0327:= -2/3*%i*EllipticF(1/2*%i*(a+b*log(c*x^n)),2)/b/n+_
        2/3*sinh(a+b*log(c*x^n))/b/n/cosh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                  Expression(Complex(Fraction(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 137


--S 138 of 460
a0327:= integrate(t0327,x)
```

```
--R
--R
--R             x
--R          ++                            1
--R    (2)   |  ---------------------------------------------- d%R
--R          ++                                  +--------------------+
--R                             n     2 |                   n
--R                %R cosh(b log(c %R ) + a) \|cosh(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 138

--S 139 of 460
--m0327:= a0327-r0327
--E 139

--S 140 of 460
--d0327:= D(m0327,x)
--E 140

)clear all

--S 141 of 460
t0328:= sech(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R           +--------------------+
--R           |              n
--R          \|sech(b log(c x ) + a)
--R    (1)   ----------------------
--R                    x
--R                                                 Type: Expression(Integer)
--E 141

--S 142 of 460
r0328:= -2*%i*cosh(a+b*log(c*x^n))^(1/2)*_
        EllipticF(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--R    Cannot find a definition or applicable library operation named
--R       EllipticF with argument type(s)
--R                    Expression(Complex(Fraction(Integer)))
--R                           PositiveInteger
--R
--R       Perhaps you should use "@" to indicate the required return type,
```

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```
--R      or "$" to specify which version of the function you need.
--E 142


--S 143 of 460
a0328:= integrate(t0328,x)
--R
--R
--R               +--------------------+
--R         x  |                 n
--R         ++   \|sech(b log(c %R ) + a)
--R    (2)   |   ---------------------- d%R
--R         ++               %R
--R                                    Type: Union(Expression(Integer),...)
--E 143


--S 144 of 460
--m0328:= a0328-r0328
--E 144


--S 145 of 460
--d0328:= D(m0328,x)
--E 145


)clear all

--S 146 of 460
t0329:= sech(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                       +--------------------+
--R              n      |             n
--R      sech(b log(c x ) + a)\|sech(b log(c x ) + a)
--R   (1)  -------------------------------------------
--R                            x
--R                                    Type: Expression(Integer)
--E 146


--S 147 of 460
r0329:= 2*%i*cosh(a+b*log(c*x^n))^(1/2)*_
       EllipticE(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/b/n+_
       2*sech(a+b*log(c*x^n))^(1/2)*sinh(a+b*log(c*x^n))/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
```

```
--R      EllipticE with argument type(s)
--R                    Expression(Complex(Fraction(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 147


--S 148 of 460
a0329:= integrate(t0329,x)
--R
--R
--R                                +--------------------+
--R          x                 n   |               n
--R          ++  sech(b log(c %R ) + a)\|sech(b log(c %R ) + a)
--R   (2)   |   --------------------------------------------- d%R
--R          ++                      %R
--R                                         Type: Union(Expression(Integer),...)
--E 148


--S 149 of 460
--m0329:= a0329-r0329
--E 149


--S 150 of 460
--d0329:= D(m0329,x)
--E 150


)clear all


--S 151 of 460
t0330:= sech(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                            +--------------------+
--R                   n   2 |               n
--R        sech(b log(c x ) + a) \|sech(b log(c x ) + a)
--R   (1)  ---------------------------------------------
--R                            x
--R                                            Type: Expression(Integer)
--E 151


--S 152 of 460
r0330:= -2/3*%i*cosh(a+b*log(c*x^n))^(1/2)*_
        EllipticF(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/b/n+_
        2/3*sech(a+b*log(c*x^n))^(3/2)*sinh(a+b*log(c*x^n))/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                 Expression(Complex(Fraction(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 152

--S 153 of 460
a0330:= integrate(t0330,x)
--R
--R
--R                             +--------------------+
--R          x                n     2 |                  n
--R         ++  sech(b log(c %R ) + a) \|sech(b log(c %R ) + a)
--R   (2)   |   ------------------------------------------------ d%R
--R         ++                          %R
--R                                  Type: Union(Expression(Integer),...)
--E 153

--S 154 of 460
--m0330:= a0330-r0330
--E 154

--S 155 of 460
--d0330:= D(m0330,x)
--E 155

)clear all

--S 156 of 460
t0331:= 1/x/sech(a+b*log(c*x^n))^(1/2)
--R
--R
--R                     1
--R   (1)  -----------------------
--R            +--------------------+
--R            |                n
--R         x\|sech(b log(c x ) + a)
--R                                              Type: Expression(Integer)
--E 156

--S 157 of 460
r0331:= -2*%i*cosh(a+b*log(c*x^n))^(1/2)*_
        EllipticE(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                  Expression(Complex(Fraction(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 157

--S 158 of 460
a0331:= integrate(t0331,x)
--R
--R
--R            x
--R        ++                1
--R   (2)  |   -------------------------- d%R
--R        ++       +--------------------+
--R              |              n
--R            %R\|sech(b log(c %R ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 158

--S 159 of 460
--m0331:= a0331-r0331
--E 159

--S 160 of 460
--d0331:= D(m0331,x)
--E 160

)clear all

--S 161 of 460
t0332:= 1/x/sech(a+b*log(c*x^n))^(3/2)
--R
--R
--R                             1
--R   (1)  -----------------------------------------------
--R                             +--------------------+
--R                   n         |            n
--R        x sech(b log(c x ) + a)\|sech(b log(c x ) + a)
--R                                          Type: Expression(Integer)
```

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```
--E 161

--S 162 of 460
r0332:= -2/3*%i*cosh(a+b*log(c*x^n))^(1/2)*_
        EllipticF(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/b/n+_
        2/3*sinh(a+b*log(c*x^n))/b/n/sech(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
--RDaly Bug
--R    Cannot find a definition or applicable library operation named
--R       EllipticF with argument type(s)
--R                   Expression(Complex(Fraction(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 162

--S 163 of 460
a0332:= integrate(t0332,x)
--R
--R
--R            x
--R         ++                               1
--R   (2)   |   -------------------------------------------------- d%R
--R         ++                           +--------------------+
--R                           n          |             n
--R              %R sech(b log(c %R ) + a)\|sech(b log(c %R ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 163

--S 164 of 460
--m0332:= a0332-r0332
--E 164

--S 165 of 460
--d0332:= D(m0332,x)
--E 165

)clear all

--S 166 of 460
t0333:= 1/x/sech(a+b*log(c*x^n))^(5/2)
--R
--R
```

```
--R                              1
--R   (1)  ------------------------------------------------
--R                              +--------------------+
--R                   n       2 |               n
--R         x sech(b log(c x ) + a) \|sech(b log(c x ) + a)
--R                                            Type: Expression(Integer)
--E 166


--S 167 of 460
r0333:= -6/5*%i*cosh(a+b*log(c*x^n))^(1/2)*_
        EllipticE(1/2*%i*(a+b*log(c*x^n)),2)*sech(a+b*log(c*x^n))^(1/2)/b/n+_
        2/5*sinh(a+b*log(c*x^n))/b/n/sech(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                   Expression(Complex(Fraction(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 167


--S 168 of 460
a0333:= integrate(t0333,x)
--R
--R
--R           x
--R         ++                         1
--R   (2)   |  ------------------------------------------------- d%R
--R         ++                      +---------------------+
--R                      n       2 |                 n
--R            %R sech(b log(c %R ) + a) \|sech(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 168


--S 169 of 460
--m0333:= a0333-r0333
--E 169


--S 170 of 460
--d0333:= D(m0333,x)
--E 170
```

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```
)clear all

--S 171 of 460
t0334:= csch(a+b*log(c*x^n))^(1/2)/x
--R
--R
--R          +--------------------+
--R          |              n
--R         \|csch(b log(c x ) + a)
--R   (1)  -----------------------
--R                    x
--R                                               Type: Expression(Integer)
--E 171


--S 172 of 460
r0334:= -2*%i*csch(a+b*log(c*x^n))^(1/2)*_
         EllipticF(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)*_
         (%i*sinh(a+b*log(c*x^n)))^(1/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                   Expression(Complex(Fraction(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 172


--S 173 of 460
a0334:= integrate(t0334,x)
--R
--R
--R               +--------------------+
--R          x  |              n
--R         ++  \|csch(b log(c %R ) + a)
--R   (2)   |  ----------------------- d%R
--R         ++              %R
--R                                         Type: Union(Expression(Integer),...)
--E 173


--S 174 of 460
--m0334:= a0334-r0334
--E 174
```

```
--S 175 of 460
--d0334:= D(m0334,x)
--E 175

)clear all

--S 176 of 460
t0335:= csch(a+b*log(c*x^n))^(3/2)/x
--R
--R
--R                             +--------------------+
--R                   n         |               n
--R         csch(b log(c x ) + a)\|csch(b log(c x ) + a)
--R   (1)   -------------------------------------------
--R                             x
--R                                           Type: Expression(Integer)
--E 176


--S 177 of 460
r0335:= -2*cosh(a+b*log(c*x^n))*csch(a+b*log(c*x^n))^(1/2)/b/n-_
        2*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)/b/n/_
        csch(a+b*log(c*x^n))^(1/2)/(%i*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                 Expression(Complex(Fraction(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 177


--S 178 of 460
a0335:= integrate(t0335,x)
--R
--R
--R                                 +---------------------+
--R            x          n         |               n
--R           ++  csch(b log(c %R ) + a)\|csch(b log(c %R ) + a)
--R   (2)   |   ------------------------------------------------- d%R
--R           ++                            %R
--R                                         Type: Union(Expression(Integer),...)
```

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```
--E 178

--S 179 of 460
--m0335:= a0335-r0335
--E 179

--S 180 of 460
--d0335:= D(m0335,x)
--E 180

)clear all

--S 181 of 460
t0336:= csch(a+b*log(c*x^n))^(5/2)/x
--R
--R
--R                            +-------------------+
--R              n      2 |                  n
--R       csch(b log(c x ) + a) \|csch(b log(c x ) + a)
--R   (1)  ---------------------------------------------
--R                              x
--R                                                    Type: Expression(Integer)
--E 181

--S 182 of 460
r0336:= -2/3*cosh(a+b*log(c*x^n))*csch(a+b*log(c*x^n))^(3/2)/b/n+_
        2/3*%i*csch(a+b*log(c*x^n))^(1/2)*EllipticF(-1/4*%pi+_
        1/2*%i*(a+b*log(c*x^n)),2)*(%i*sinh(a+b*log(c*x^n)))^(1/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R       EllipticF with argument type(s)
--R                   Expression(Complex(Fraction(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 182

--S 183 of 460
a0336:= integrate(t0336,x)
--R
--R
--R                                          +-------------------+
```

```
--R             x                n     2 |                 n
--R         ++  csch(b log(c %R ) + a) \|csch(b log(c %R ) + a)
--R   (2)    |  --------------------------------------------- d%R
--R         ++                        %R
--R                                      Type: Union(Expression(Integer),...)
--E 183


--S 184 of 460
--m0336:= a0336-r0336
--E 184


--S 185 of 460
--d0336:= D(m0336,x)
--E 185


)clear all

--S 186 of 460
t0337:= 1/x/csch(a+b*log(c*x^n))^(1/2)
--R
--R
--R                 1
--R   (1)  -----------------------
--R            +--------------------+
--R            |               n
--R         x\|csch(b log(c x ) + a)
--R                                                      Type: Expression(Integer)
--E 186


--S 187 of 460
r0337:= -2*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)/b/n/_
       csch(a+b*log(c*x^n))^(1/2)/(%i*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                   Expression(Complex(Fraction(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 187


--S 188 of 460
```

```
a0337:= integrate(t0337,x)
--R
--R
--R            x
--R          ++                 1
--R   (2)    |   ------------------------- d%R
--R          ++     +--------------------+
--R                 |                n
--R              %R\|csch(b log(c %R ) + a)
--R                                         Type: Union(Expression(Integer),...)
--E 188

--S 189 of 460
--m0337:= a0337-r0337
--E 189

--S 190 of 460
--d0337:= D(m0337,x)
--E 190

)clear all

--S 191 of 460
t0338:= 1/x/csch(a+b*log(c*x^n))^(3/2)
--R
--R
--R                               1
--R   (1)   -------------------------------------------------
--R                             +--------------------+
--R                    n        |               n
--R         x csch(b log(c x ) + a)\|csch(b log(c x ) + a)
--R                                             Type: Expression(Integer)
--E 191

--S 192 of 460
r0338:= 2/3*cosh(a+b*log(c*x^n))/b/n/csch(a+b*log(c*x^n))^(1/2)+_
        2/3*%i*csch(a+b*log(c*x^n))^(1/2)*EllipticF(-1/4*%pi+_
        1/2*%i*(a+b*log(c*x^n)),2)*(%i*sinh(a+b*log(c*x^n)))^(1/2)/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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticF with argument type(s)
--R                   Expression(Complex(Fraction(Integer)))
--R                             PositiveInteger
```

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```
--R
--R      Perhaps you should use "@" to indicate the required return type,
--R      or "$" to specify which version of the function you need.
--E 192


--S 193 of 460
a0338:= integrate(t0338,x)
--R
--R
--R           x
--R         ++                                    1
--R   (2)   |   ------------------------------------------------- d%R
--R         ++                            +--------------------+
--R                              n         |              n
--R              %R csch(b log(c %R ) + a)\|csch(b log(c %R ) + a)
--R                                          Type: Union(Expression(Integer),...)
--E 193


--S 194 of 460
--m0338:= a0338-r0338
--E 194


--S 195 of 460
--d0338:= D(m0338,x)
--E 195


)clear all


--S 196 of 460
t0339:= 1/x/csch(a+b*log(c*x^n))^(5/2)
--R
--R
--R                                1
--R   (1)  -------------------------------------------------
--R                                  +--------------------+
--R                      n     2 |              n
--R         x csch(b log(c x ) + a) \|csch(b log(c x ) + a)
--R                                                Type: Expression(Integer)
--E 196


--S 197 of 460
r0339:= 2/5*cosh(a+b*log(c*x^n))/b/n/csch(a+b*log(c*x^n))^(3/2)+_
        6/5*%i*EllipticE(-1/4*%pi+1/2*%i*(a+b*log(c*x^n)),2)/b/n/_
        csch(a+b*log(c*x^n))^(1/2)/(%i*sinh(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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R      EllipticE with argument type(s)
--R                    Expression(Complex(Fraction(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 197

--S 198 of 460
a0339:= integrate(t0339,x)
--R
--R
--R            x
--R          ++                              1
--R   (2)    |   ----------------------------------------------- d%R
--R          ++                              +--------------------+
--R                          n     2 |                   n
--R              %R csch(b log(c %R ) + a) \|csch(b log(c %R ) + a)
--R                                        Type: Union(Expression(Integer),...)
--E 198

--S 199 of 460
--m0339:= a0339-r0339
--E 199

--S 200 of 460
--d0339:= D(m0339,x)
--E 200

)clear all

--S 201 of 460
t0340:= 1/2*log(a+b*x)
--R
--R
--R        log(b x + a)
--R   (1)  ------------
--R             2
--R                                                    Type: Expression(Integer)
--E 201

--S 202 of 460
r0340:= -1/2*x+1/2*(a+b*x)*log(a+b*x)/b
--R
--R
--R        (b x + a)log(b x + a) - b x
--R   (2)  ---------------------------
```

```
--R                              2b
--R                                                      Type: Expression(Integer)
--E 202


--S 203 of 460
a0340:= integrate(t0340,x)
--R
--R
--R         (b x + a)log(b x + a) - b x
--R   (3)  ---------------------------
--R                    2b
--R                                              Type: Union(Expression(Integer),...)
--E 203


--S 204 of 460
m0340:= a0340-r0340
--R
--R
--R   (4)  0
--R                                                      Type: Expression(Integer)
--E 204


--S 205 of 460
d0340:= D(m0340,x)
--R
--R
--R   (5)  0
--R                                                      Type: Expression(Integer)
--E 205


)clear all


--S 206 of 460
t0341:= log(x^(1/2)+(1+x)^(1/2))
--R
--R
--R              +-----+     +-+
--R   (1)  log(\|x + 1  + \|x )
--R                                                      Type: Expression(Integer)
--E 206


--S 207 of 460
r0341:= -1/2*(x/(1+x))^(1/2)*(1+x)+1/2*atanh((x/(1+x))^(1/2))+_
        x*log(x^(1/2)+(1+x)^(1/2))
--R
--R
--R                                          +-----+             +-----+
--R             +-----+     +-+              | x                 | x
--R        2x log(\|x + 1  + \|x ) + atanh( |----- ) + (- x - 1) |-----
--R                                         \|x + 1              \|x + 1
```

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```
--R   (2)  ----------------------------------------------------------------
--R                                  2
--R                                              Type: Expression(Integer)
--E 207


--S 208 of 460 random value, ok to fail
a0341:= integrate(t0341,x)
--R
--R
--R   (3)
--R              +-+ +-----+    2              +-----+    +-+
--R      ((4x + 2)\|x \|x + 1  + 4x  + 4x + 1)log(\|x + 1  + \|x )
--R    +
--R               +-+ +-----+    2
--R       (- 2x - 1)\|x \|x + 1  - 2x  - 2x
--R  /
--R      +-+ +-----+
--R    4\|x \|x + 1  + 4x + 2
--R                                      Type: Union(Expression(Integer),...)
--E 208


--S 209 of 460 random value, ok to fail
m0341:= a0341-r0341
--R
--R
--R                                        +-----+          +-----+
--R               +-----+    +-+           |  x              |  x
--R       - 2x log(\|x + 1  + \|x ) - atanh( |----- ) + (x + 1) |-----  + 2a0341
--R                                        \|x + 1          \|x + 1
--R   (4)  --------------------------------------------------------------------
--R                                  2
--R                                              Type: Expression(Integer)
--E 209


--S 210 of 460 random value, ok to fail
d0341:= D(m0341,x)
--R
--R
--R                                            +-----+
--R           +-+ +-----+      +-----+    +-+  |  x    +-+ +-----+
--R       - 2\|x \|x + 1 log(\|x + 1  + \|x ) +  |----- \|x \|x + 1  - x
--R                                            \|x + 1
--R   (5)  ----------------------------------------------------------------
--R                              +-+ +-----+
--R                            2\|x \|x + 1
--R                                              Type: Expression(Integer)
--E 210

)clear all
```

```
--S 211 of 460
t0342:= log(abs(a^2-x^2))
--R
--R
--R                 2    2
--R   (1)  log(abs(x  - a ))
--R                                              Type: Expression(Integer)
--E 211


--S 212 of 460
r0342:= -2*x+2*a*atanh(x/a)+1/2*x*log((a^2-x^2)^2)
--R
--R
--R              4     2 2    4                x
--R       x log(x  - 2a x  + a ) + 4a atanh(-) - 4x
--R                                          a
--R   (2)  ---------------------------------------
--R                             2
--R                                              Type: Expression(Integer)
--E 212


--S 213 of 460
a0342:= integrate(t0342,x)
--R
--R
--R                 2    2
--R   (3)  x log(abs(x  - a )) + a log(x + a) - a log(x - a) - 2x
--R                                    Type: Union(Expression(Integer),...)
--E 213


--S 214 of 460
m0342:= a0342-r0342
--R
--R
--R   (4)
--R                 2    2           4     2 2    4
--R       2x log(abs(x  - a )) - x log(x  - 2a x  + a ) + 2a log(x + a)
--R     +
--R                                x
--R       - 2a log(x - a) - 4a atanh(-)
--R                                a
--R   /
--R     2
--R                                              Type: Expression(Integer)
--E 214


--S 215 of 460
d0342:= D(m0342,x)
--R
--R
```

```
--R                   2    2          4      2 2    4
--R        2log(abs(x  - a )) - log(x  - 2a x  + a )
--R    (5)  ---------------------------------------
--R                            2
--R                                            Type: Expression(Integer)
--E 215


)clear all

--S 216 of 460
t0343:= log((-11+5*x)/(5+76*x))
--R
--R
--R            5x - 11
--R    (1)  log(-------)
--R            76x + 5
--R                                            Type: Expression(Integer)
--E 216


--S 217 of 460
r0343:= -11/5*log(11-5*x)+x*log((-11+5*x)/(5+76*x))-5/76*log(5+76*x)
--R
--R
--R                                5x - 11
--R        - 25log(76x + 5) + 380x log(-------) - 836log(- 5x + 11)
--R                                76x + 5
--R    (2)  -------------------------------------------------------
--R                                380
--R                                            Type: Expression(Integer)
--E 217


--S 218 of 460
a0343:= integrate(t0343,x)
--R
--R
--R                                              5x - 11
--R        - 25log(76x + 5) - 836log(5x - 11) + 380x log(-------)
--R                                              76x + 5
--R    (3)  -----------------------------------------------------
--R                                380
--R                                    Type: Union(Expression(Integer),...)
--E 218


--S 219 of 460
m0343:= a0343-r0343
--R
--R
--R        - 11log(5x - 11) + 11log(- 5x + 11)
--R    (4)  -----------------------------------
--R                         5
```

```
--R                                                    Type: Expression(Integer)
--E 219


--S 220 of 460
d0343:= D(m0343,x)
--R
--R
--R   (5)  0
--R                                                    Type: Expression(Integer)
--E 220


)clear all

--S 221 of 460
t0344:= log((1+x)/(-1+x))/x^2
--R
--R
--R            x + 1
--R        log(-----)
--R            x - 1
--R   (1)  ----------
--R             2
--R            x
--R                                                    Type: Expression(Integer)
--E 221


--S 222 of 460
r0344:= 2*log(x)-log(-(1+x)/(1-x))/x-log(1-x^2)
--R
--R
--R                     x + 1                2
--R        2x log(x) - log(-----) - x log(- x  + 1)
--R                     x - 1
--R   (2)  -------------------------------------
--R                          x
--R                                                    Type: Expression(Integer)
--E 222


--S 223 of 460
a0344:= integrate(t0344,x)
--R
--R
--R                2                        x + 1
--R        - x log(x  - 1) + 2x log(x) - log(-----)
--R                                          x - 1
--R   (3)  -------------------------------------
--R                          x
--R                                            Type: Union(Expression(Integer),...)
--E 223
```

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```
--S 224 of 460
m0344:= a0344-r0344
--R
--R
--R                2              2
--R   (4)  - log(x  - 1) + log(- x  + 1)
--R                                                   Type: Expression(Integer)
--E 224


--S 225 of 460
d0344:= D(m0344,x)
--R
--R
--R   (5)  0
--R                                                   Type: Expression(Integer)
--E 225


)clear all

--S 226 of 460
t0345:= x*log((1+x)/x^2)
--R
--R
--R             x + 1
--R   (1)  x log(-----)
--R              2
--R             x
--R                                                   Type: Expression(Integer)
--E 226


--S 227 of 460
r0345:= 1/2*x+1/4*x^2-1/2*log(1+x)+1/2*x^2*log((1+x)/x^2)
--R
--R
--R                          2    x + 1      2
--R        - 2log(x + 1) + 2x log(-----) + x  + 2x
--R                                 2
--R                                x
--R   (2)  ---------------------------------------
--R                          4
--R                                                   Type: Expression(Integer)
--E 227


--S 228 of 460
a0345:= integrate(t0345,x)
--R
--R
--R                          2    x + 1      2
--R        - 2log(x + 1) + 2x log(-----) + x  + 2x
--R                                 2
```

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```
--R                                     x
--R   (3)  -------------------------------------
--R                               4
--R                                             Type: Union(Expression(Integer),...)
--E 228


--S 229 of 460
m0345:= a0345-r0345
--R
--R
--R   (4)  0
--R                                             Type: Expression(Integer)
--E 229


--S 230 of 460
d0345:= D(m0345,x)
--R
--R
--R   (5)  0
--R                                             Type: Expression(Integer)
--E 230


)clear all

--S 231 of 460
t0346:= (a+b*x)^n*log(a+b*x)
--R
--R
--R                            n
--R   (1)  log(b x + a)(b x + a)
--R                                             Type: Expression(Integer)
--E 231


--S 232 of 460
r0346:= 1/b/(1+n)^2*(a+b*x)^(1+n)*(-1+log(a+b*x)+n*log(a+b*x))
--R
--R
--R                                      n + 1
--R        ((n + 1)log(b x + a) - 1)(b x + a)
--R   (2)  -------------------------------------
--R                         2
--R                    b n  + 2b n + b
--R                                             Type: Expression(Integer)
--E 232


--S 233 of 460
a0346:= integrate(t0346,x)
--R
--R
--R                                                n log(b x + a)
```

```
--R         (((b n + b)x + a n + a)log(b x + a) - b x - a)%e
--R   (3)  ---------------------------------------------------------
--R                                 2
--R                              b n  + 2b n + b
--R                                      Type: Union(Expression(Integer),...)
--E 233


--S 234 of 460
m0346:= a0346-r0346
--R
--R
--R   (4)
--R                                                     n log(b x + a)
--R        (((b n + b)x + a n + a)log(b x + a) - b x - a)%e
--R     +
--R                                           n + 1
--R        ((- n - 1)log(b x + a) + 1)(b x + a)
--R  /
--R           2
--R      b n  + 2b n + b
--R                                                Type: Expression(Integer)
--E 234


--S 235 of 460
d0346:= D(m0346,x)
--R
--R
--R   (5)
--R                                     n log(b x + a)            n + 1
--R        ((b n + b)x + a n + a)log(b x + a)%e              - (b x + a)
--R     +
--R                                                               n
--R        (((- b n - b)x - a n - a)log(b x + a) + b x + a)(b x + a)
--R  /
--R      (b n + b)x + a n + a
--R                                                Type: Expression(Integer)
--E 235


)clear all

--S 236 of 460
t0347:= log((a+b*x)/(c+d*x))/x
--R
--R
--R              b x + a
--R          log(-------)
--R              d x + c
--R   (1)  ------------
--R               x
--R                                                Type: Expression(Integer)
```

```
--E 236

--S 237 of 460
r0347:= -log((b*c-a*d)/b/(c+d*x))*log((a+b*x)/(c+d*x))+_
        log(-(b*c-a*d)*x/a/(c+d*x))*log((a+b*x)/(c+d*x))-_
        polylog(2,d*(x+a/b)/(c+d*x))+polylog(2,c*(1+b*x/a)/(c+d*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
--RDaly Bug
--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 237

--S 238 of 460
a0347:= integrate(t0347,x)
--R
--R
--R                   %R b + a
--R           x log(--------)
--R         ++       %R d + c
--R    (2)  |   ------------- d%R
--R         ++        %R
--R                                              Type: Union(Expression(Integer),...)
--E 238

--S 239 of 460
--m0347:= a0347-r0347
--E 239

--S 240 of 460
--d0347:= D(m0347,x)
--E 240

)clear all

--S 241 of 460
t0348:= log((a+b*x)/(c+d*x))^2/x
--R
--R
--R            b x + a 2
```

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```
--R         log(-------)
--R            d x + c
--R   (1)   -------------
--R              x
--R                                                        Type: Expression(Integer)
--E 241


--S 242 of 460
r0348:= -log((b*c-a*d)/b/(c+d*x))*log((a+b*x)/(c+d*x))^2+_
        log(-(b*c-a*d)*x/a/(c+d*x))*log((a+b*x)/(c+d*x))^2-_
        2*log((a+b*x)/(c+d*x))*polylog(2,d*(x+a/b)/(c+d*x))+_
        2*log((a+b*x)/(c+d*x))*polylog(2,c*(1+b*x/a)/(c+d*x))-_
        2*polylog(3,c*(a+b*x)/a/(c+d*x))+2*polylog(3,d*(a+b*x)/b/(c+d*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
--RDaly Bug
--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 242


--S 243 of 460
a0348:= integrate(t0348,x)
--R
--R
--R                    %R b + a 2
--R           x log(--------)
--R       ++       %R d + c
--R   (2)  |   -------------- d%R
--R       ++         %R
--R                                          Type: Union(Expression(Integer),...)
--E 243


--S 244 of 460
--m0348:= a0348-r0348
--E 244


--S 245 of 460
--d0348:= D(m0348,x)
--E 245
```

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```
)clear all

--S 246 of 460
t0349:= log(a*log(b*x^n)^p)
--R
--R
--R                   n p
--R   (1)  log(a log(b x ) )
--R                                              Type: Expression(Integer)
--E 246

--S 247 of 460
r0349:= -p*x*Ei(1/n*log(b*x^n))/((b*x^n)^(1/n))+x*log(a*log(b*x^n)^p)
--R
--R
--R               1
--R               -                                n
--R           n n             n p            log(b x )
--R        x (b x ) log(a log(b x ) ) - p x Ei(---------)
--R                                                n
--R   (2)  ---------------------------------------------
--R                            1
--R                            -
--R                           n n
--R                        (b x )
--R                                              Type: Expression(Integer)
--E 247

--S 248 of 460
a0349:= integrate(t0349,x)
--R
--R
--R            x
--R          ++              n p
--R   (3)   |   log(a log(b %R ) )d%R
--R          ++
--R                                      Type: Union(Expression(Integer),...)
--E 248

--S 249 of 460
--m0349:= a0349-r0349
--E 249

--S 250 of 460
--d0349:= D(m0349,x)
--E 250

)clear all

--S 251 of 460
```

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```
t0350:= x^m*log(a*log(b*x)^p)
--R
--R
--R          m               p
--R   (1)  x log(a log(b x) )
--R                                              Type: Expression(Integer)
--E 251


--S 252 of 460
r0350:= -1/b/(1+m)*(p*x^m*(b*x)^(-m)*Ei((1+m)*log(b*x))-_
        x^(1+m)*log(a*log(b*x)^p)*b)
--R
--R
--R          m + 1              p         m     - m
--R        b x      log(a log(b x) ) - p x (b x)    Ei((m + 1)log(b x))
--R   (2)  -------------------------------------------------------
--R                              b m + b
--R                                              Type: Expression(Integer)
--E 252


--S 253 of 460
a0350:= integrate(t0350,x)
--R
--R
--R             x
--R          ++     m               p
--R   (3)   |   %R log(a log(%R b) )d%R
--R          ++
--R                                              Type: Union(Expression(Integer),...)
--E 253


--S 254 of 460
--m0350:= a0350-r0350
--E 254


--S 255 of 460
--d0350:= D(m0350,x)
--E 255


)clear all


--S 256 of 460
t0351:= x^m*log(a*log(b*x^n)^p)
--R
--R
--R          m               n p
--R   (1)  x log(a log(b x ) )
--R                                              Type: Expression(Integer)
--E 256
```

```
--S 257 of 460
r0351:= 1/(1+m)*x^(1+m)*(-p*Ei((1+m)/n*log(b*x^n))*(b*x^n)^(-(1+m)/n)+_
        log(a*log(b*x^n)^p))
--R
--R
--R                                                - m - 1
--R                                                -------                    n
--R        m + 1              n p        m + 1   n    n      (m + 1)log(b x )
--R        x     log(a log(b x ) ) - p x    (b x )      Ei(----------------)
--R                                                                n
--R   (2)  -------------------------------------------------------------
--R                                       m + 1
--R                                                   Type: Expression(Integer)
--E 257


--S 258 of 460
a0351:= integrate(t0351,x)
--R
--R
--R            x
--R          ++    m              n p
--R   (3)   |   %R log(a log(b %R ) )d%R
--R          ++
--R                                        Type: Union(Expression(Integer),...)
--E 258


--S 259 of 460
--m0351:= a0351-r0351
--E 259


--S 260 of 460
--d0351:= D(m0351,x)
--E 260


)clear all

--S 261 of 460
t0352:= log(x)/(a+b*log(x))^(1/2)
--R
--R
--R              log(x)
--R   (1)  --------------
--R          +-----------+
--R         \|b log(x) + a
--R                                                   Type: Expression(Integer)
--E 261


--S 262 of 460
r0352:= -1/2*(2*a+b)*%pi^(1/2)*erfi((a+b*log(x))^(1/2)/b^(1/2))/_
        (exp(1)^(a/b))/b^(3/2)+x*(a+b*log(x))^(1/2)/b
```

```
--R
--R   There are no library operations named erfi
--R      Use HyperDoc Browse or issue
--R                                )what op erfi
--R      to learn if there is any operation containing " erfi " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named erfi
--R      with argument type(s)
--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 262

--S 263 of 460
a0352:= integrate(t0352,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 263

--S 264 of 460
--m0352:= a0352-r0352
--E 264

--S 265 of 460
--d0352:= D(m0352,x)
--E 265

)clear all

--S 266 of 460
t0353:= log(x)/(a-b*log(x))^(1/2)
--R
--R
--R              log(x)
--R   (1)  -----------------
--R           +------------+
--R           \|- b log(x) + a
--R                                                  Type: Expression(Integer)
--E 266

--S 267 of 460
```

```
r0353:= -1/2*(2*a-b)*exp(1)^(a/b)*%pi^(1/2)*erf((a-b*log(x))^(1/2)/_
        b^(1/2))/b^(3/2)-x*(a-b*log(x))^(1/2)/b
--R
--R
--R                a
--R                -                +-------------+
--R              b +---+     \|- b log(x) + a         +-+ +-------------+
--R         (b - 2a)%e \|%pi erf(----------------) - 2x\|b \|- b log(x) + a
--R                                    +-+
--R                                    \|b
--R    (2)  -----------------------------------------------------------------
--R                                         +-+
--R                                       2b\|b
--R                                                        Type: Expression(Integer)
--E 267


--S 268 of 460
a0353:= integrate(t0353,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 268


--S 269 of 460
--m0353:= a0353-r0353
--E 269


--S 270 of 460
--d0353:= D(m0353,x)
--E 270


)clear all


--S 271 of 460
t0354:= (A+B*log(x))/(a+b*log(x))^(1/2)
--R
--R
--R          B log(x) + A
--R    (1)  ---------------
--R           +------------+
--R          \|b log(x) + a
--R                                                        Type: Expression(Integer)
--E 271


--S 272 of 460
```

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```
r0354:= 1/2*(2*A*b-(2*a+b)*B)*%pi^(1/2)*erfi((a+b*log(x))^(1/2)/b^(1/2))/_
        (exp(1)^(a/b))/b^(3/2)+B*x*(a+b*log(x))^(1/2)/b
--R
--R   There are no library operations named erfi
--R      Use HyperDoc Browse or issue
--R                           )what op erfi
--R      to learn if there is any operation containing " erfi " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named erfi
--R      with argument type(s)
--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 272

--S 273 of 460
a0354:= integrate(t0354,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 273

--S 274 of 460
--m0354:= a0354-r0354
--E 274

--S 275 of 460
--d0354:= D(m0354,x)
--E 275

)clear all

--S 276 of 460
t0355:= (A+B*log(x))/(a-b*log(x))^(1/2)
--R
--R
--R            B log(x) + A
--R   (1)  ----------------
--R          +-------------+
--R          \|- b log(x) + a
--R                                                    Type: Expression(Integer)
--E 276
```

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```
--S 277 of 460
r0355:= -1/2*(2*A*b+(2*a-b)*B)*exp(1)^(a/b)*%pi^(1/2)*_
        erf((a-b*log(x))^(1/2)/b^(1/2))/b^(3/2)-B*x*(a-b*log(x))^(1/2)/b
--R
--R
--R   (2)
--R                        a
--R                        -              +-------------+
--R                        b +---+     \|- b log(x) + a         +-+ +-------------+
--R   ((B - 2A)b - 2B a)%e \|%pi erf(----------------) - 2B x\|b \|- b log(x) + a
--R                                       +-+
--R                                       \|b
--R   --------------------------------------------------------------------------
--R                                       +-+
--R                                      2b\|b
--R                                                  Type: Expression(Integer)
--E 277


--S 278 of 460
a0355:= integrate(t0355,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 278


--S 279 of 460
--m0355:= a0355-r0355
--E 279


--S 280 of 460
--d0355:= D(m0355,x)
--E 280


)clear all

--S 281 of 460
t0356:= log(x)*sin(a+b*x)
--R
--R
--R   (1)  log(x)sin(b x + a)
--R                                                  Type: Expression(Integer)
--E 281


--S 282 of 460
```

```
r0356:= (cos(a)*Ci(b*x)-log(x)*cos(a+b*x)-sin(a)*Si(b*x))/b
--R
--R
--R         - Si(b x)sin(a) - cos(b x + a)log(x) + Ci(b x)cos(a)
--R   (2)  --------------------------------------------------
--R                                  b
--R                                                Type: Expression(Integer)
--E 282

--S 283 of 460
a0356:= integrate(t0356,x)
--R
--R
--R            x
--R          ++
--R   (3)  |    log(%R)sin(%R b + a)d%R
--R          ++
--R                                          Type: Union(Expression(Integer),...)
--E 283

--S 284 of 460
--m0356:= a0356-r0356
--E 284

--S 285 of 460
--d0356:= D(m0356,x)
--E 285

)clear all

--S 286 of 460
t0357:= log(x)*sin(a+b*x)^2
--R
--R
--R                         2
--R   (1)  log(x)sin(b x + a)
--R                                                Type: Expression(Integer)
--E 286

--S 287 of 460
r0357:= -1/4*(2*b*x-Ci(2*b*x)*sin(2*a)-2*log(x)*b*x+2*log(x)*cos(a+b*x)*_
        sin(a+b*x)-cos(2*a)*Si(2*b*x))/b
--R
--R
--R   (2)
--R         - 2cos(b x + a)log(x)sin(b x + a) + Ci(2b x)sin(2a) + 2b x log(x)
--R       +
--R         Si(2b x)cos(2a) - 2b x
--R   /
--R       4b
```

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```
--R                                              Type: Expression(Integer)
--E 287


--S 288 of 460
a0357:= integrate(t0357,x)
--R
--R
--R            x
--R         ++                          2
--R   (3)  |   log(%R)sin(%R b + a) d%R
--R         ++
--R                                         Type: Union(Expression(Integer),...)
--E 288


--S 289 of 460
--m0357:= a0357-r0357
--E 289


--S 290 of 460
--d0357:= D(m0357,x)
--E 290


)clear all

--S 291 of 460
t0358:= log(x)*sin(a+b*x)^3
--R
--R
--R                      3
--R   (1)  log(x)sin(b x + a)
--R                                         Type: Expression(Integer)
--E 291


--S 292 of 460
r0358:= 1/12*(9*cos(a)*Ci(b*x)-cos(3*a)*Ci(3*b*x)-12*log(x)*cos(a+b*x)+_
        4*log(x)*cos(a+b*x)^3-9*sin(a)*Si(b*x)+sin(3*a)*Si(3*b*x))/b
--R
--R
--R   (2)
--R        Si(3b x)sin(3a) - 9Si(b x)sin(a)
--R      +
--R                     3
--R      (4cos(b x + a)  - 12cos(b x + a))log(x) - Ci(3b x)cos(3a) + 9Ci(b x)cos(a)
--R   /
--R      12b
--R                                         Type: Expression(Integer)
--E 292


--S 293 of 460
a0358:= integrate(t0358,x)
```

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```
--R
--R
--R              x
--R          ++                              3
--R   (3)  |   log(%R)sin(%R b + a) d%R
--R        ++
--R                                        Type: Union(Expression(Integer),...)
--E 293

--S 294 of 460
--m0358:= a0358-r0358
--E 294

--S 295 of 460
--d0358:= D(m0358,x)
--E 295

)clear all

--S 296 of 460
t0359:= log(x)*cos(a+b*x)
--R
--R
--R   (1)  cos(b x + a)log(x)
--R                                        Type: Expression(Integer)
--E 296

--S 297 of 460
r0359:= -(Ci(b*x)*sin(a)-log(x)*sin(a+b*x)+cos(a)*Si(b*x))/b
--R
--R
--R        log(x)sin(b x + a) - Ci(b x)sin(a) - Si(b x)cos(a)
--R   (2)  --------------------------------------------------
--R                              b
--R                                        Type: Expression(Integer)
--E 297

--S 298 of 460
a0359:= integrate(t0359,x)
--R
--R
--R              x
--R          ++
--R   (3)  |   cos(%R b + a)log(%R)d%R
--R        ++
--R                                        Type: Union(Expression(Integer),...)
--E 298

--S 299 of 460
--m0359:= a0359-r0359
```

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```
--E 299

--S 300 of 460
--d0359:= D(m0359,x)
--E 300

)clear all

--S 301 of 460
t0360:= log(x)*cos(a+b*x)^2
--R
--R
--R                       2
--R   (1)  cos(b x + a) log(x)
--R                                                Type: Expression(Integer)
--E 301

--S 302 of 460
r0360:= 1/4*(-2*b*x-Ci(2*b*x)*sin(2*a)+2*log(x)*b*x+2*log(x)*cos(a+b*x)*_
        sin(a+b*x)-cos(2*a)*Si(2*b*x))/b
--R
--R
--R   (2)
--R       2cos(b x + a)log(x)sin(b x + a) - Ci(2b x)sin(2a) + 2b x log(x)
--R     +
--R        - Si(2b x)cos(2a) - 2b x
--R  /
--R     4b
--R                                                Type: Expression(Integer)
--E 302

--S 303 of 460
a0360:= integrate(t0360,x)
--R
--R
--R            x
--R          ++                 2
--R   (3)  |   cos(%R b + a) log(%R)d%R
--R          ++
--R                                        Type: Union(Expression(Integer),...)
--E 303

--S 304 of 460
--m0360:= a0360-r0360
--E 304

--S 305 of 460
--d0360:= D(m0360,x)
--E 305
```

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```
)clear all

--S 306 of 460
t0361:= log(x)*cos(a+b*x)^3
--R
--R
--R                      3
--R   (1)  cos(b x + a) log(x)
--R                                                Type: Expression(Integer)
--E 306

--S 307 of 460
r0361:= -1/12*(9*Ci(b*x)*sin(a)+Ci(3*b*x)*sin(3*a)-8*log(x)*sin(a+b*x)-_
        4*log(x)*sin(a+b*x)*cos(a+b*x)^2+9*cos(a)*Si(b*x)+cos(3*a)*Si(3*b*x))/b
--R
--R
--R   (2)
--R                   2
--R       (4cos(b x + a)  + 8)log(x)sin(b x + a) - Ci(3b x)sin(3a) - 9Ci(b x)sin(a)
--R     +
--R        - Si(3b x)cos(3a) - 9Si(b x)cos(a)
--R  /
--R     12b
--R                                                Type: Expression(Integer)
--E 307

--S 308 of 460
a0361:= integrate(t0361,x)
--R
--R
--R           x
--R         ++                3
--R   (3)   |   cos(%R b + a) log(%R)d%R
--R         ++
--R                                                Type: Union(Expression(Integer),...)
--E 308

--S 309 of 460
--m0361:= a0361-r0361
--E 309

--S 310 of 460
--d0361:= D(m0361,x)
--E 310

)clear all

--S 311 of 460
t0362:= log(x)*sinh(a+b*x)
--R
```

```
--R
--R   (1)  log(x)sinh(b x + a)
--R                                                  Type: Expression(Integer)
--E 311


--S 312 of 460
r0362:= (-cosh(a)*Chi(b*x)+log(x)*cosh(a+b*x)-sinh(a)*Shi(b*x))/b
--R
--R   There are no library operations named Chi
--R      Use HyperDoc Browse or issue
--R                            )what op Chi
--R      to learn if there is any operation containing " Chi " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named Chi
--R      with argument type(s)
--R                            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 312


--S 313 of 460
a0362:= integrate(t0362,x)
--R
--R
--R          x
--R        ++
--R   (2)  |   log(%R)sinh(%R b + a)d%R
--R        ++
--R                                          Type: Union(Expression(Integer),...)
--E 313


--S 314 of 460
--m0362:= a0362-r0362
--E 314


--S 315 of 460
--d0362:= D(m0362,x)
--E 315


)clear all


--S 316 of 460
t0363:= log(x)*sinh(a+b*x)^3
--R
--R
--R                              3
--R   (1)  log(x)sinh(b x + a)
```

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```
--R                                                  Type: Expression(Integer)
--E 316


--S 317 of 460
r0363:= 1/12*(9*cosh(a)*Chi(b*x)-cosh(3*a)*Chi(3*b*x)-12*log(x)*cosh(a+b*x)+_
        4*log(x)*cosh(a+b*x)^3+9*sinh(a)*Shi(b*x)-sinh(3*a)*Shi(3*b*x))/b
--R
--R    There are no library operations named Chi
--R       Use HyperDoc Browse or issue
--R                                 )what op Chi
--R       to learn if there is any operation containing " Chi " in its
--R       name.
--R
--RDaly Bug
--R    Cannot find a definition or applicable library operation named Chi
--R       with argument type(s)
--R                               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 317


--S 318 of 460
a0363:= integrate(t0363,x)
--R
--R
--R             x
--R          ++                         3
--R   (2)   |   log(%R)sinh(%R b + a) d%R
--R        ++
--R                                              Type: Union(Expression(Integer),...)
--E 318


--S 319 of 460
--m0363:= a0363-r0363
--E 319


--S 320 of 460
--d0363:= D(m0363,x)
--E 320


)clear all

--S 321 of 460
t0364:= log(x)*cosh(a+b*x)
--R
--R
--R   (1)  cosh(b x + a)log(x)
--R                                                  Type: Expression(Integer)
--E 321
```

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```
--S 322 of 460
r0364:= (-Chi(b*x)*sinh(a)+log(x)*sinh(a+b*x)-cosh(a)*Shi(b*x))/b
--R
--R   There are no library operations named Chi
--R      Use HyperDoc Browse or issue
--R                               )what op Chi
--R      to learn if there is any operation containing " Chi " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named Chi
--R      with argument type(s)
--R                               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 322

--S 323 of 460
a0364:= integrate(t0364,x)
--R
--R
--R             x
--R         ++
--R   (2)   |   cosh(%R b + a)log(%R)d%R
--R        ++
--R                                        Type: Union(Expression(Integer),...)
--E 323

--S 324 of 460
--m0364:= a0364-r0364
--E 324

--S 325 of 460
--d0364:= D(m0364,x)
--E 325

)clear all

--S 326 of 460
t0365:= log(x)*cosh(a+b*x)^3
--R
--R
--R                        3
--R   (1)  cosh(b x + a) log(x)
--R                                             Type: Expression(Integer)
--E 326

--S 327 of 460
```

```
r0365:= 1/12/b*(-9*Chi(b*x)*sinh(a)-Chi(3*b*x)*sinh(3*a)+8*log(x)*_
        sinh(a+b*x)+4*log(x)*sinh(a+b*x)*cosh(a+b*x)^2-_
        9*cosh(a)*Shi(b*x)-cosh(3*a)*Shi(3*b*x))
--R
--R   There are no library operations named Chi
--R      Use HyperDoc Browse or issue
--R                                )what op Chi
--R      to learn if there is any operation containing " Chi " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named Chi
--R      with argument type(s)
--R                           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 327

--S 328 of 460
a0365:= integrate(t0365,x)
--R
--R
--R          x
--R        ++                3
--R   (2)  |   cosh(%R b + a) log(%R)d%R
--R        ++
--R                                       Type: Union(Expression(Integer),...)
--E 328

--S 329 of 460
--m0365:= a0365-r0365
--E 329

--S 330 of 460
--d0365:= D(m0365,x)
--E 330

)clear all

--S 331 of 460
t0366:= x*(4+x^2)^(1/2)*log(x)
--R
--R
--R                +------+
--R                | 2
--R   (1)  x log(x)\|x  + 4
--R                                       Type: Expression(Integer)
--E 331
```

```
--S 332 of 460
r0366:= -4/3*(4+x^2)^(1/2)-1/9*(4+x^2)^(3/2)+8/3*atanh(1/2*(4+x^2)^(1/2))+_
        1/3*(4+x^2)^(3/2)*log(x)
--R
--R
--R                  +------+
--R                  | 2                                      +------+
--R                  \|x  + 4         2                2       | 2
--R         24atanh(---------) + ((3x  + 12)log(x) - x  - 16)\|x  + 4
--R                     2
--R   (2)  -----------------------------------------------------------
--R                                   9
--R                                                Type: Expression(Integer)
--E 332

--S 333 of 460
a0366:= integrate(t0366,x)
--R
--R
--R   (3)
--R                     +------+                    +------+
--R           2         | 2           3             | 2
--R       ((24x  + 24)\|x  + 4  - 24x  - 72x)log(\|x  + 4  - x + 2)
--R     +
--R                     +------+                    +------+
--R             2       | 2           3             | 2
--R       ((- 24x  - 24)\|x  + 4  + 24x  + 72x)log(\|x  + 4  - x - 2)
--R     +
--R                                              +------+
--R            5       3              5     3     | 2
--R       ((- 3x  - 21x  - 36x)log(x) + x  + 19x  + 48x)\|x  + 4
--R     +
--R          6      4      2             6      4      2
--R       (3x  + 27x  + 72x  + 48)log(x) - x  - 21x  - 84x  - 64
--R  /
--R               +------+
--R        2      | 2           3
--R     (9x  + 9)\|x  + 4  - 9x  - 27x
--R                                     Type: Union(Expression(Integer),...)
--E 333

--S 334 of 460
m0366:= a0366-r0366
--R
--R
--R                                                           +------+
--R             +------+                 +------+             | 2
--R             | 2                      | 2                  \|x  + 4
--R        8log(\|x  + 4  - x + 2) - 8log(\|x  + 4  - x - 2) - 8atanh(---------)
--R                                                                      2
```

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```
--R    (4)  --------------------------------------------------------------------
--R                                          3
--R                                                    Type: Expression(Integer)
--E 334


--S 335 of 460
d0366:= D(m0366,x)
--R
--R
--R    (5)  0
--R                                                    Type: Expression(Integer)
--E 335


)clear all

--S 336 of 460
t0367:= x*log(x)/(-1+x^2)^(1/2)
--R
--R
--R          x log(x)
--R    (1)  ---------
--R          +------+
--R          | 2
--R          \|x  - 1
--R                                                    Type: Expression(Integer)
--E 336


--S 337 of 460
r0367:= -(-1+x^2)^(1/2)+atan((-1+x^2)^(1/2))+(-1+x^2)^(1/2)*log(x)
--R
--R
--R               +------+                 +------+
--R               | 2                      | 2
--R    (2)  atan(\|x  - 1 ) + (log(x) - 1)\|x  - 1
--R                                                    Type: Expression(Integer)
--E 337


--S 338 of 460
a0367:= integrate(t0367,x)
--R
--R
--R    (3)
--R          +------+           +------+                        +------+
--R          | 2                | 2                             | 2
--R        (2\|x  - 1  - 2x)atan(\|x  - 1  - x) + (- x log(x) + x)\|x  - 1
--R      +
--R           2                 2
--R          (x  - 1)log(x) - x  + 1
--R    /
--R         +------+
```

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```
--R       | 2
--R     \|x  - 1  - x
--R                                        Type: Union(Expression(Integer),...)
--E 338


--S 339 of 460
m0367:= a0367-r0367
--R
--R
--R                  +------+           +------+
--R                  | 2                | 2
--R   (4)  - atan(\|x  - 1 ) + 2atan(\|x  - 1  - x)
--R                                        Type: Expression(Integer)
--E 339


--S 340 of 460
d0367:= D(m0367,x)
--R
--R
--R   (5)  0
--R                                        Type: Expression(Integer)
--E 340


)clear all

--S 341 of 460
t0368:= log(cos(x))*tan(x)
--R
--R
--R   (1)  tan(x)log(cos(x))
--R                                        Type: Expression(Integer)
--E 341


--S 342 of 460
r0368:= -1/2*log(cos(x))^2
--R
--R
--R                 2
--R         log(cos(x))
--R   (2)  - ------------
--R              2
--R                                        Type: Expression(Integer)
--E 342


--S 343 of 460
a0368:= integrate(t0368,x)
--R
--R
--R                 2
--R         log(cos(x))
```

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```
--R   (3)  - ------------
--R                2
--R                                              Type: Union(Expression(Integer),...)
--E 343


--S 344 of 460
m0368:= a0368-r0368
--R
--R
--R   (4)  0
--R                                              Type: Expression(Integer)
--E 344


--S 345 of 460
d0368:= D(m0368,x)
--R
--R
--R   (5)  0
--R                                              Type: Expression(Integer)
--E 345


)clear all

--S 346 of 460
t0369:= cos(x)*log(cos(x))
--R
--R
--R   (1)  cos(x)log(cos(x))
--R                                              Type: Expression(Integer)
--E 346


--S 347 of 460
r0369:= atanh(sin(x))-sin(x)+log(cos(x))*sin(x)
--R
--R
--R   (2)  sin(x)log(cos(x)) + atanh(sin(x)) - sin(x)
--R                                              Type: Expression(Integer)
--E 347


--S 348 of 460
a0369:= integrate(t0369,x)
--R
--R
--R        log(sin(x) + 1) - log(sin(x) - 1) + 2sin(x)log(cos(x)) - 2sin(x)
--R   (3)  ----------------------------------------------------------------
--R                                        2
--R                                              Type: Union(Expression(Integer),...)
--E 348


--S 349 of 460
```

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```
m0369:= a0369-r0369
--R
--R
--R         log(sin(x) + 1) - log(sin(x) - 1) - 2atanh(sin(x))
--R    (4)  ------------------------------------------------
--R                                  2
--R                                                    Type: Expression(Integer)
--E 349

--S 350 of 460
d0369:= D(m0369,x)
--R
--R
--R    (5)  0
--R                                                    Type: Expression(Integer)
--E 350

)clear all

--S 351 of 460
t0370:= log(sin(x))*sin(x)^2
--R
--R
--R              2
--R    (1)  sin(x) log(sin(x))
--R                                                    Type: Expression(Integer)
--E 351

--S 352 of 460
r0370:= 1/4*x+1/4*%i*x^2-1/2*x*log(1-exp(1)^(2*%i*x))+_
        1/4*%i*polylog(2,exp(1)^(2*%i*x))+1/4*cos(x)*sin(x)+_
        1/2*log(sin(x))*(x-cos(x)*sin(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
--RDaly Bug
--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 352

--S 353 of 460
```

```
a0370:= integrate(t0370,x)
--R
--R
--R            x
--R          ++            2
--R   (2)   |    sin(%R) log(sin(%R))d%R
--R          ++
--R                                          Type: Union(Expression(Integer),...)
--E 353

--S 354 of 460
--m0370:= a0370-r0370
--E 354

--S 355 of 460
--d0370:= D(m0370,x)
--E 355

)clear all

--S 356 of 460
t0371:= log(sin(x))*sin(x)^3
--R
--R
--R              3
--R   (1)   sin(x) log(sin(x))
--R                                          Type: Expression(Integer)
--E 356

--S 357 of 460
r0371:= -2/3*atanh(cos(x))+2/3*cos(x)-1/9*cos(x)^3-_
        1/3*cos(x)*(3-cos(x)^2)*log(sin(x))
--R
--R
--R              3                                             3
--R        (3cos(x)  - 9cos(x))log(sin(x)) - 6atanh(cos(x)) - cos(x)  + 6cos(x)
--R   (2)  -------------------------------------------------------------------
--R                                        9
--R                                          Type: Expression(Integer)
--E 357

--S 358 of 460
a0371:= integrate(t0371,x)
--R
--R
--R   (3)
--R              3
--R        (3cos(x)  - 9cos(x))log(sin(x)) - 3log(cos(x) + 1) + 3log(cos(x) - 1)
--R      +
--R              3
```

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```
--R         - cos(x)  + 6cos(x)
--R  /
--R      9
--R                                       Type: Union(Expression(Integer),...)
--E 358

--S 359 of 460
--m0371:= a0371-r0371
--E 359

--S 360 of 460
--d0371:= D(m0371,x)
--E 360

)clear all

--S 361 of 460
t0372:= log(sin(x^(1/2)))
--R
--R
--R                  +-+
--R   (1)  log(sin(\|x ))
--R                                              Type: Expression(Integer)
--E 361

--S 362 of 460
r0372:= 1/3*%i*x^(3/2)-x*log(1-exp(2*%i*x^(1/2)))+x*log(sin(x^(1/2)))+_
        %i*x^(1/2)*polylog(2,exp(2*%i*x^(1/2)))-_
        1/2*polylog(3,exp(2*%i*x^(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
--RDaly Bug
--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 362

--S 363 of 460
a0372:= integrate(t0372,x)
--R
--R
```

```
--R             x
--R          ++            +--+
--R   (2)   |   log(sin(\|%R ))d%R
--R         ++
--R                                         Type: Union(Expression(Integer),...)
--E 363


--S 364 of 460
--m0372:= a0372-r0372
--E 364


--S 365 of 460
--d0372:= D(m0372,x)
--E 365


)clear all

--S 366 of 460
t0373:= log(sin(x))*csc(x)^2
--R
--R
--R              2
--R   (1)  csc(x) log(sin(x))
--R                                           Type: Expression(Integer)
--E 366


--S 367 of 460
r0373:= -x-cot(x)-cot(x)*log(sin(x))
--R
--R
--R   (2)  - cot(x)log(sin(x)) - cot(x) - x
--R                                           Type: Expression(Integer)
--E 367


--S 368 of 460
a0373:= integrate(t0373,x)
--R
--R
--R                                                         2
--R         cos(x)sin(x)log(sin(x)) + cos(x)sin(x) - x cos(x)  + x
--R   (3)  -----------------------------------------------------
--R                               2
--R                          cos(x)  - 1
--R                                         Type: Union(Expression(Integer),...)
--E 368


--S 369 of 460
m0373:= a0373-r0373
--R
--R
```

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```
--R   (4)
--R                          2
--R      (cos(x)sin(x) + (cos(x)  - 1)cot(x))log(sin(x)) + cos(x)sin(x)
--R    +
--R             2
--R      (cos(x)  - 1)cot(x)
--R  /
--R          2
--R    cos(x)  - 1
--R                                             Type: Expression(Integer)
--E 369

--S 370 of 460
d0373:= D(m0373,x)
--R
--R
--R   (5)
--R                2             3
--R          (cos(x)  + 1)sin(x)
--R        +
--R                 4          2         2          2
--R          ((- cos(x)  + 2cos(x)  - 1)cot(x)  + cos(x)  - 1)sin(x)
--R      *
--R        log(sin(x))
--R    +
--R             2          3
--R        (cos(x)  + 1)sin(x)
--R      +
--R                 4          2         2          4
--R        ((- cos(x)  + 2cos(x)  - 1)cot(x)  + cos(x)  - 1)sin(x)
--R      +
--R             5          3
--R        (cos(x)  - 2cos(x)  + cos(x))cot(x)
--R  /
--R          4          2
--R    (cos(x)  - 2cos(x)  + 1)sin(x)
--R                                             Type: Expression(Integer)
--E 370

)clear all

--S 371 of 460
t0374:= x*log(x)/(a+b*x+c*x^2)
--R
--R
--R          x log(x)
--R   (1)  --------------
--R            2
--R        c x  + b x + a
--R                                             Type: Expression(Integer)
```

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```
--E 371

--S 372 of 460
r0374:= 1/2*(1-b/(b^2-4*a*c)^(1/2))*log(x)*_
        log((b-(b^2-4*a*c)^(1/2)+2*c*x)/(b-(b^2-4*a*c)^(1/2)))/c+_
        1/2*(1+b/(b^2-4*a*c)^(1/2))*log(x)*log((b+(b^2-_
        4*a*c)^(1/2)+2*c*x)/(b+(b^2-4*a*c)^(1/2)))/c+_
        1/2*(1-b/(b^2-4*a*c)^(1/2))*_
        polylog(2,1-(b-(b^2-4*a*c)^(1/2)+2*c*x)/(b-(b^2-4*a*c)^(1/2)))/c+_
        1/2*(1+b/(b^2-4*a*c)^(1/2))*_
        polylog(2,1-(b+(b^2-4*a*c)^(1/2)+2*c*x)/(b+(b^2-4*a*c)^(1/2)))/c
--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
--RDaly Bug
--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 372

--S 373 of 460
a0374:= integrate(t0374,x)
--R
--R
--R            x
--R          ++     %R log(%R)
--R   (2)   |   --------------- d%R
--R          ++     2
--R             %R c + %R b + a
--R                                        Type: Union(Expression(Integer),...)
--E 373

--S 374 of 460
--m0374:= a0374-r0374
--E 374

--S 375 of 460
--d0374:= D(m0374,x)
--E 375

)clear all
```

```
--S 376 of 460
t0375:= x^2*log(x)/(a+b*x+c*x^2)
--R
--R
--R             2
--R           x log(x)
--R   (1)  --------------
--R             2
--R        c x  + b x + a
--R                                              Type: Expression(Integer)
--E 376


--S 377 of 460
r0375:= -x/c+x*log(x)/c+1/4*(b-(b^2-4*a*c)^(1/2))^2*log(x)*_
        log((b-(b^2-4*a*c)^(1/2)+2*c*x)/(b-(b^2-4*a*c)^(1/2)))/c^2/_
        (b^2-4*a*c)^(1/2)-1/4*(b+(b^2-4*a*c)^(1/2))^2*log(x)*_
        log((b+(b^2-4*a*c)^(1/2)+2*c*x)/(b+(b^2-4*a*c)^(1/2)))/c^2/_
        (b^2-4*a*c)^(1/2)+1/4*(b-(b^2-4*a*c)^(1/2))^2*_
        polylog(2,1-(b-(b^2-4*a*c)^(1/2)+2*c*x)/(b-(b^2-4*a*c)^(1/2)))/_
        c^2/(b^2-4*a*c)^(1/2)-1/4*(b+(b^2-4*a*c)^(1/2))^2*_
        polylog(2,1-(b+(b^2-4*a*c)^(1/2)+2*c*x)/(b+(b^2-4*a*c)^(1/2)))/_
        c^2/(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
--RDaly Bug
--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 377


--S 378 of 460
a0375:= integrate(t0375,x)
--R
--R
--R           x        2
--R          ++      %R log(%R)
--R   (2)    |    --------------- d%R
--R          ++        2
--R               %R c + %R b + a
--R                                         Type: Union(Expression(Integer),...)
--E 378
```

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```
--S 379 of 460
--m0375:= a0375-r0375
--E 379


--S 380 of 460
--d0375:= D(m0375,x)
--E 380


)clear all

--S 381 of 460
t0376:= log(x)/x^2/(a+b*x+c*x^2)
--R
--R
--R                log(x)
--R   (1)  -----------------
--R            4     3     2
--R         c x  + b x  + a x
--R                                                    Type: Expression(Integer)
--E 381


--S 382 of 460
r0376:= -2*c/(b^2-4*a*c)^(1/2)/(b-(b^2-4*a*c)^(1/2))/x+_
         2*c/(b^2-4*a*c)^(1/2)/(b+(b^2-4*a*c)^(1/2))/x-2*c*log(x)/_
         (b^2-4*a*c)^(1/2)/(b-(b^2-4*a*c)^(1/2))/x+_
         2*c*log(x)/(b^2-4*a*c)^(1/2)/(b+(b^2-4*a*c)^(1/2))/x-_
         2*c^2*log(x)^2/(b^2-4*a*c)^(1/2)/(b-(b^2-4*a*c)^(1/2))^2+_
         2*c^2*log(x)^2/(b^2-4*a*c)^(1/2)/(b+(b^2-4*a*c)^(1/2))^2+_
         4*c^2*log(x)*log((b-(b^2-4*a*c)^(1/2)+2*c*x)/_
         (b-(b^2-4*a*c)^(1/2)))/(b^2-4*a*c)^(1/2)/(b-(b^2-4*a*c)^(1/2))^2-_
         4*c^2*log(x)*log((b+(b^2-4*a*c)^(1/2)+2*c*x)/_
         (b+(b^2-4*a*c)^(1/2)))/(b^2-4*a*c)^(1/2)/(b+(b^2-4*a*c)^(1/2))^2+_
         4*c^2*polylog(2,1-(b-(b^2-4*a*c)^(1/2)+2*c*x)/_
         (b-(b^2-4*a*c)^(1/2)))/(b^2-4*a*c)^(1/2)/(b-(b^2-4*a*c)^(1/2))^2-_
         4*c^2*polylog(2,1-(b+(b^2-4*a*c)^(1/2)+2*c*x)/_
         (b+(b^2-4*a*c)^(1/2)))/(b^2-4*a*c)^(1/2)/(b+(b^2-4*a*c)^(1/2))^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
--RDaly Bug
--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 382


--S 383 of 460
a0376:= integrate(t0376,x)
--R
--R
--R            x
--R          ++        log(%R)
--R   (2)   |   ----------------- d%R
--R         ++      4      3      2
--R              %R c + %R b + %R a
--R                                         Type: Union(Expression(Integer),...)
--E 383


--S 384 of 460
--m0376:= a0376-r0376
--E 384


--S 385 of 460
--d0376:= D(m0376,x)
--E 385


)clear all

--S 386 of 460
t0377:= (2-log(x))*(3+log(x))^2/x
--R
--R
--R              3          2
--R        - log(x)  - 4log(x)  + 3log(x) + 18
--R   (1)  ----------------------------------
--R                        x
--R                                         Type: Expression(Integer)
--E 386


--S 387 of 460
r0377:= -1/12*(3+log(x))^3*(-11+3*log(x))
--R
--R
--R              4          3          2
--R        - 3log(x)  - 16log(x)  + 18log(x)  + 216log(x) + 297
--R   (2)  -----------------------------------------------------
--R                              12
--R                                         Type: Expression(Integer)
--E 387


--S 388 of 460
a0377:= integrate(t0377,x)
```

```
--R
--R
--R                    4            3            2
--R         - 3log(x)  - 16log(x)  + 18log(x)  + 216log(x)
--R   (3)  ---------------------------------------------
--R                            12
--R                                          Type: Union(Expression(Integer),...)
--E 388

--S 389 of 460
m0377:= a0377-r0377
--R
--R
--R           99
--R   (4)  - --
--R           4
--R                                          Type: Expression(Integer)
--E 389

--S 390 of 460
d0377:= D(m0377,x)
--R
--R
--R   (5)  0
--R                                          Type: Expression(Integer)
--E 390

)clear all

--S 391 of 460
t0378:= (1+log(x))^(1/2)/x/log(x)
--R
--R
--R         +----------+
--R        \|log(x) + 1
--R   (1)  -------------
--R           x log(x)
--R                                          Type: Expression(Integer)
--E 391

--S 392 of 460
r0378:= -2*atanh((1+log(x))^(1/2))+2*(1+log(x))^(1/2)
--R
--R
--R                  +----------+        +----------+
--R   (2)  - 2atanh(\|log(x) + 1 ) + 2\|log(x) + 1
--R                                          Type: Expression(Integer)
--E 392

--S 393 of 460
```

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```
a0378:= integrate(t0378,x)
--R
--R
--R                +----------+              +----------+          +----------+
--R   (3)  - log(\|log(x) + 1  + 1) + log(\|log(x) + 1  - 1) + 2\|log(x) + 1
--R                                       Type: Union(Expression(Integer),...)
--E 393

--S 394 of 460
m0378:= a0378-r0378
--R
--R
--R   (4)
--R           +----------+              +----------+                 +----------+
--R   - log(\|log(x) + 1  + 1) + log(\|log(x) + 1  - 1) + 2atanh(\|log(x) + 1 )
--R                                                Type: Expression(Integer)
--E 394

--S 395 of 460
d0378:= D(m0378,x)
--R
--R
--R   (5)  0
--R                                                Type: Expression(Integer)
--E 395

)clear all

--S 396 of 460
t0379:= (log(a*x^n)^2)^p/x
--R
--R
--R              n 2p
--R        log(a x )
--R   (1)  -----------
--R             x
--R                                                Type: Expression(Integer)
--E 396

--S 397 of 460
r0379:= log(a*x^n)*(log(a*x^n)^2)^p/n/(1+2*p)
--R
--R
--R             n          n 2p
--R        log(a x )log(a x )
--R   (2)  --------------------
--R              2n p + n
--R                                                Type: Expression(Integer)
--E 397
```

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```
--S 398 of 460
a0379:= integrate(t0379,x)
--R
--R
--R                              2p log(n log(x) + log(a))
--R        (n log(x) + log(a))%e
--R   (3)  ---------------------------------------------
--R                             2n p + n
--R                                          Type: Union(Expression(Integer),...)
--E 398

--S 399 of 460
m0379:= a0379-r0379
--R
--R
--R   (4)
--R            n       n 2p                        2p log(n log(x) + log(a))
--R   - log(a x )log(a x )   + (n log(x) + log(a))%e
--R   ----------------------------------------------------------------------
--R                             2n p + n
--R                                                    Type: Expression(Integer)
--E 399

--S 400 of 460
d0379:= D(m0379,x)
--R
--R
--R   (5)
--R             n - 1       n 2p          n - 1      n         n 2p - 1
--R        - x x     log(a x )  - 2p x x     log(a x )log(a x )
--R    +
--R                 n  2p log(n log(x) + log(a))
--R        (2p + 1)x %e
--R  /
--R                 n
--R     (2p + 1)x x
--R                                                    Type: Expression(Integer)
--E 400

)clear all

--S 401 of 460
t0380:= (log(a*x^n)^m)^p/x
--R
--R
--R               n m p
--R        log(a x )
--R   (1)  ------------
--R               x
--R                                                    Type: Expression(Integer)
```

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```
--E 401

--S 402 of 460
r0380:= log(a*x^n)*(log(a*x^n)^m)^p/n/(1+m*p)
--R
--R
--R              n          n m p
--R         log(a x )log(a x )
--R   (2)  --------------------
--R              m n p + n
--R                                              Type: Expression(Integer)
--E 402

--S 403 of 460
a0380:= integrate(t0380,x)
--R
--R
--R                          m p log(n log(x) + log(a))
--R        (n log(x) + log(a))%e
--R   (3)  ---------------------------------------------
--R                          m n p + n
--R                                           Type: Union(Expression(Integer),...)
--E 403

--S 404 of 460
m0380:= a0380-r0380
--R
--R
--R   (4)
--R            n          n m p                      m p log(n log(x) + log(a))
--R     - log(a x )log(a x )     + (n log(x) + log(a))%e
--R   ----------------------------------------------------------------------
--R                              m n p + n
--R                                              Type: Expression(Integer)
--E 404

--S 405 of 460
d0380:= D(m0380,x)
--R
--R
--R   (5)
--R           n - 1       n m p           n - 1      n          n m p - 1
--R       - x x     log(a x )   - m p x x     log(a x )log(a x )
--R     +
--R                   n  m p log(n log(x) + log(a))
--R        (m p + 1)x %e
--R   /
--R                   n
--R      (m p + 1)x x
--R                                              Type: Expression(Integer)
```

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```
--E 405

)clear all

--S 406 of 460
t0381:= (log(a*x^n)^2)^(1/2)/x
--R
--R
--R          +----------+
--R          |        n 2
--R         \|log(a x )
--R   (1)   -------------
--R              x
--R                                              Type: Expression(Integer)
--E 406


--S 407 of 460
r0381:= 1/2*log(a*x^n)^2*csgn(log(a*x^n))/n
--R
--R   There are no library operations named csgn
--R      Use HyperDoc Browse or issue
--R                                )what op csgn
--R      to learn if there is any operation containing " csgn " in its
--R      name.
--R
--RDaly Bug
--R   Cannot find a definition or applicable library operation named csgn
--R      with argument type(s)
--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 407

--S 408 of 460
a0381:= integrate(t0381,x)
--R
--R
--R                  2
--R        n log(x)   + 2log(a)log(x)
--R   (2)   ------------------------
--R                   2
--R                                              Type: Union(Expression(Integer),...)
--E 408

--S 409 of 460
m0381:= a0381-r0381
--R
--R
--R                 2
```

```
--R          n log(x)  + 2log(a)log(x) - 2r0381
--R   (3)   ----------------------------------
--R                            2
--R                                                 Type: Expression(Integer)
--E 409


--S 410 of 460
d0381:= D(m0381,x)
--R
--R
--R        n log(x) + log(a)
--R   (4)  -----------------
--R               x
--R                                                 Type: Expression(Integer)
--E 410


)clear all

--S 411 of 460
t0382:= (b*log(a*x^n)^m)^p/x
--R
--R
--R               n m p
--R        (b log(a x ) )
--R   (1)  ---------------
--R               x
--R                                                 Type: Expression(Integer)
--E 411


--S 412 of 460
r0382:= log(a*x^n)*(b*log(a*x^n)^m)^p/n/(1+m*p)
--R
--R
--R              n          n m p
--R        log(a x )(b log(a x ) )
--R   (2)  -----------------------
--R                m n p + n
--R                                                 Type: Expression(Integer)
--E 412


--S 413 of 460
a0382:= integrate(t0382,x)
--R
--R
--R                           m p log(n log(x) + log(a)) + p log(b)
--R        (n log(x) + log(a))%e
--R   (3)  -----------------------------------------------------------
--R                                 m n p + n
--R                                            Type: Union(Expression(Integer),...)
--E 413
```

```
--S 414 of 460
m0382:= a0382-r0382
--R
--R
--R   (4)
--R              n           n m p
--R      - log(a x )(b log(a x ) )
--R    +
--R                        m p log(n log(x) + log(a)) + p log(b)
--R      (n log(x) + log(a))%e
--R  /
--R    m n p + n
--R                                             Type: Expression(Integer)
--E 414

--S 415 of 460
d0382:= D(m0382,x)
--R
--R
--R   (5)
--R           n - 1         n m p
--R      - x x     (b log(a x ) )
--R    +
--R                n - 1        n         n m - 1          n m p - 1
--R      - b m p x x     log(a x )log(a x )     (b log(a x ) )
--R    +
--R                n  m p log(n log(x) + log(a)) + p log(b)
--R      (m p + 1)x %e
--R  /
--R              n
--R    (m p + 1)x x
--R                                             Type: Expression(Integer)
--E 415

)clear all

--S 416 of 460
t0383:= 1/(-log(a*x^2))^(1/2)
--R
--R
--R                1
--R   (1)  --------------
--R          +-----------+
--R          |        2
--R          \|- log(a x )
--R                                             Type: Expression(Integer)
--E 416

--S 417 of 460
```

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```
r0383:= -1/2*2^(1/2)*%pi^(1/2)*x*erf(1/2*(-log(a*x^2))^(1/2)*2^(1/2))/_
        (a*x^2)^(1/2)
--R
--R
--R                                  +----------+
--R                          +-+ |            2
--R             +-+ +---+    \|2 \|- log(a x )
--R          x\|2 \|%pi erf(------------------)
--R                                 2
--R    (2)  - --------------------------------
--R                          +----+
--R                          |   2
--R                        2\|a x
--R                                                  Type: Expression(Integer)
--E 417


--S 418 of 460
a0383:= integrate(t0383,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 418


--S 419 of 460
--m0383:= a0383-r0383
--E 419


--S 420 of 460
--d0383:= D(m0383,x)
--E 420


)clear all

--S 421 of 460
t0384:= 1/(-log(a/x^2))^(1/2)
--R
--R
--R              1
--R    (1)  ------------
--R          +---------+
--R          |       a
--R          |- log(--)
--R          |       2
--R          \|      x
--R                                                  Type: Expression(Integer)
```

```
--E 421

--S 422 of 460
r0384:= 1/2*2^(1/2)*%pi^(1/2)*(a/x^2)^(1/2)*x*_
          erfi(1/2*(-log(a/x^2))^(1/2)*2^(1/2))
--R
--R    There are no library operations named erfi
--R        Use HyperDoc Browse or issue
--R                                )what op erfi
--R        to learn if there is any operation containing " erfi " in its
--R        name.
--R
--RDaly Bug
--R    Cannot find a definition or applicable library operation named erfi
--R        with argument type(s)
--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 422

--S 423 of 460
a0384:= integrate(t0384,x)
--R
--R
--RDaly Bug
--R    >> Error detected within library code:
--R    integrate: implementation incomplete (constant residues)
--R
--R    Continuing to read the file...
--R
--E 423

--S 424 of 460
--m0384:= a0384-r0384
--E 424

--S 425 of 460
--d0384:= D(m0384,x)
--E 425

)clear all

--S 426 of 460
t0385:= 1/(-log(a*x^n))^(1/2)
--R
--R
--R                     1
--R    (1)  --------------
--R            +----------+
```

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```
--R              |            n
--R           \|- log(a x )
--R                                                              Type: Expression(Integer)
--E 426


--S 427 of 460
r0385:= -%pi^(1/2)*x*erf((-log(a*x^n))^(1/2)/n^(1/2))/n^(1/2)/((a*x^n)^(1/n))
--R
--R
--R                           +-----------+
--R                           |          n
--R              +---+      \|- log(a x )
--R            x\|%pi erf(-------------)
--R                            +-+
--R                            \|n
--R    (2)  - ------------------------
--R                          1
--R                          -
--R                 +-+    n n
--R               \|n (a x )
--R                                                              Type: Expression(Integer)
--E 427


--S 428 of 460
a0385:= integrate(t0385,x)
--R
--R
--RDaly Bug
--R   >> Error detected within library code:
--R   integrate: implementation incomplete (constant residues)
--R
--R   Continuing to read the file...
--R
--E 428


--S 429 of 460
--m0385:= a0385-r0385
--E 429


--S 430 of 460
--d0385:= D(m0385,x)
--E 430


)clear all


--S 431 of 460
t0386:= log(x^n)/(a+b*x)
--R
--R
--R              n
```

```
--R         log(x )
--R   (1)   -------
--R         b x + a
--R                                                    Type: Expression(Integer)
--E 431


--S 432 of 460
r0386:= 1/b*(log(x^n)*log((a+b*x)/a)+n*polylog(2,-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
--RDaly Bug
--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 432


--S 433 of 460
a0386:= integrate(t0386,x)
--R
--R
--R            x         n
--R           ++  log(%R )
--R   (2)   |   -------- d%R
--R        ++   %R b + a
--R                                             Type: Union(Expression(Integer),...)
--E 433


--S 434 of 460
--m0386:= a0386-r0386
--E 434


--S 435 of 460
--d0386:= D(m0386,x)
--E 435


)clear all


--S 436 of 460
t0387:= sin(x*log(x))+log(x)*sin(x*log(x))
--R
--R
```

```
--R   (1)  (log(x) + 1)sin(x log(x))
--R                                                Type: Expression(Integer)
--E 436

--S 437 of 460
r0387:= -cos(x*log(x))
--R
--R
--R   (2)  - cos(x log(x))
--R                                                Type: Expression(Integer)
--E 437

--S 438 of 460
a0387:= integrate(t0387,x)
--R
--R
--R   (3)  - cos(x log(x))
--R                                       Type: Union(Expression(Integer),...)
--E 438

--S 439 of 460
m0387:= a0387-r0387
--R
--R
--R   (4)  0
--R                                                Type: Expression(Integer)
--E 439

--S 440 of 460
d0387:= D(m0387,x)
--R
--R
--R   (5)  0
--R                                                Type: Expression(Integer)
--E 440

)clear all

--S 441 of 460
t0388:= log((1-x^2)/(1+x^2))/(1+x)^2
--R
--R
--R                 2
--R           - x  + 1
--R        log(--------)
--R                2
--R             x  + 1
--R   (1)  -------------
--R            2
--R          x  + 2x + 1
```

```
--R                                                     Type: Expression(Integer)
--E 441

--S 442 of 460
r0388:= -1/(1+x)-atan(x)+1/2*log(1-x)+1/2*log(1+x)-_
        log((1-x^2)/(1+x^2))/(1+x)-1/2*log(1+x^2)
--R
--R
--R   (2)
--R                                                            2
--R                        2                          - x  + 1
--R      (- x - 1)log(x   + 1) + (x + 1)log(x + 1) - 2log(--------)
--R                                                            2
--R                                                          x  + 1
--R    +
--R        (x + 1)log(- x + 1) + (- 2x - 2)atan(x) - 2
--R  /
--R     2x + 2
--R                                                     Type: Expression(Integer)
--E 442

--S 443 of 460
a0388:= integrate(t0388,x)
--R
--R
--R   (3)
--R                                                            2
--R                        2                  2        - x  + 1
--R      (- x - 1)log(x   + 1) + (x + 1)log(x   - 1) - 2log(--------)
--R                                                            2
--R                                                          x  + 1
--R    +
--R        (- 2x - 2)atan(x) - 2
--R  /
--R     2x + 2
--R                                        Type: Union(Expression(Integer),...)
--E 443

--S 444 of 460
m0388:= a0388-r0388
--R
--R
--R              2
--R        log(x  - 1) - log(x + 1) - log(- x + 1)
--R   (4)  ---------------------------------------
--R                           2
--R                                                     Type: Expression(Integer)
--E 444

--S 445 of 460
```

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```
d0388:= D(m0388,x)
--R
--R
--R   (5)  0
--R                                            Type: Expression(Integer)
--E 445

)clear all

--S 446 of 460
t0389:= log((-1+x)/(1+x))
--R
--R
--R           x - 1
--R   (1)  log(-----)
--R           x + 1
--R                                            Type: Expression(Integer)
--E 446

--S 447 of 460
r0389:= x*log((-1+x)/(1+x))-log(-(-1+x)*(1+x))
--R
--R
--R             x - 1            2
--R   (2)  x log(-----) - log(- x  + 1)
--R             x + 1
--R                                            Type: Expression(Integer)
--E 447

--S 448 of 460
a0389:= integrate(t0389,x)
--R
--R
--R                  2           x - 1
--R   (3)  - log(x  - 1) + x log(-----)
--R                              x + 1
--R                                       Type: Union(Expression(Integer),...)
--E 448

--S 449 of 460
m0389:= a0389-r0389
--R
--R
--R                2                2
--R   (4)  - log(x  - 1) + log(- x  + 1)
--R                                            Type: Expression(Integer)
--E 449

--S 450 of 460
d0389:= D(m0389,x)
```

```
--R
--R
--R   (5)  0
--R                                                    Type: Expression(Integer)
--E 450

)clear all

--S 451 of 460
t0390:= log(x)/(-1+x)
--R
--R
--R         log(x)
--R   (1)  ------
--R          x - 1
--R                                                    Type: Expression(Integer)
--E 451

--S 452 of 460
r0390:= -polylog(2,1-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
--RDaly Bug
--R   Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                 PositiveInteger
--R                                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 452

--S 453 of 460
a0390:= integrate(t0390,x)
--R
--R
--R   (2)  - dilog(x)
--R                                            Type: Union(Expression(Integer),...)
--E 453

--S 454 of 460
--m0390:= a0390-r0390
--E 454

--S 455 of 460
```

```
--d0390:= D(m0390,x)
--E 455


)clear all


--S 456 of 460
t0391:= x*log(1-a-b*x)/(a+b*x)
--R
--R
--R          x log(- b x - a + 1)
--R    (1)  --------------------
--R                b x + a
--R                                                Type: Expression(Integer)
--E 456


--S 457 of 460
r0391:= -x/b-(1-a-b*x)*log(1-a-b*x)/b^2+a*polylog(2,a+b*x)/b^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
--RDaly Bug
--R    Cannot find a definition or applicable library operation named
--R       polylog with argument type(s)
--R                                 PositiveInteger
--R                               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 457


--S 458 of 460
a0391:= integrate(t0391,x)
--R
--R
--R            x
--R           ++  %R log(- %R b - a + 1)
--R    (2)  |   --------------------- d%R
--R           ++         %R b + a
--R                                                Type: Union(Expression(Integer),...)
--E 458


--S 459 of 460
--m0391:= a0391-r0391
--E 459


--S 460 of 460
```

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```
--d0391:= D(m0391,x)
--E 460

)spool
)lisp (bye)
```

————-

References

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