

#(k,n)-soliton with $k < n$ represented by a $k \times n$ matrix

restart :

k := 3 :

n := 6 :

A := Matrix([[1, 1, 0, 0, 0, 0], [0, 0, 1, 1, 0, 0], [0, 0, 0, 0, 1, 1]]) :

K := Array(1 ..n) :

for i to n do

K[i] := $\kappa(i)$

end do:

N := 20 :

sizeBasis := 10 :

f := Array(1 ..sizeBasis) :

#define the functions in the frame depending on the matrix A

i := 1 :

for j to k do

for i to n do

$$f[j] := f[j] + \frac{A[j][i]}{1 - K[i] \cdot z}$$

end do:

$$f[j] := \text{expand}(\text{factor}(f[j] \cdot z^{-(k-1)} \cdot z^{\text{sizeBasis}-1}))$$

end do:

#define the remaining elements in the basis

for j to sizeBasis - k do

$$f[j+k] := z^{-(j+k-1)} \cdot z^{\text{sizeBasis}-1}$$

end do:

#define the array with the series expansions of the functions $f_1, \dots, f_{\text{sizeBasis}}$

Cmatrix := Array(1 ..sizeBasis) :

for i to sizeBasis do

Cmatrix[i] := mtaylor(f[i], z, N + i)

end do:

#compute the matrix corresponding to the frame $\{f_1, \dots, f_{\text{sizeBasis}}\}$

$\xi := (i, j) \rightarrow \text{coeff}(Cmatrix[\text{sizeBasis} - j + 1], z, i - 1)$:

A := Matrix(N, sizeBasis, ξ);

$$= A := \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \kappa(5) + \kappa(6) & \kappa(3) + \kappa(4) & \kappa(1) + \kappa(2) \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \kappa(5)^2 + \kappa(6)^2 & \kappa(3)^2 + \kappa(4)^2 & \kappa(1)^2 + \kappa(2)^2 \\ \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots & \vdots \end{bmatrix}$$

20 × 10 Matrix

```
partLength := 6 :
p = Array(1 ..partLength) :
for i to partLength do
p[i] := 0
end do:
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n1 := 0 : n2 := 0 : n3 := 0 :
for i to partLength do
for n1 from 0 to i do
for n2 from 0 to i do
for n3 from 0 to i do
if n1 + 2·n2 + 3·n3 = i then
p[i] := p[i] +  $\frac{(X^{n1} \cdot Y^{n2} \cdot T^{n3})}{n1! \cdot n2! \cdot n3!}$  :
end if:
end do:
end do:
end do:
end do:
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```
#make one only large vector with all the partitions containing at most three parts
with (combinat, partition) : with (ListTools) :
partitions := FlattenOnce([seq(partition(j), j = 1 ..partLength)]) :
h := numelems(partitions) :
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#make the corresponding vector of Maya diagrams
Maya = Array(1 ..h) :
for i to h do
m := numelems(partitions[i]) :
Maya[i] := Array(1 ..m) :
for j to m do
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    Maya[i][j] := partitions[i][m - j + 1] - j + sizeBasis + 1
  end do:
end do:
τ := 0 :
#compute the coordinates, the schur polynomial for the non zero coordinates and the tau function
Coordinates = Array(1 ..h) :
with (LinearAlgebra) : with (ArrayTools) : with (linalg) :
for i to h do
  m := numelems (Maya[i]) :
  increasingMaya := convert (FlipDimension (Maya[i], 2), list) :
  if Maya[i][1] < N then
    #this condition is needed for Maya diagrams corresponding to rows we did not compute
    Coordinates[i] := Determinant (SubMatrix (A, increasingMaya, [sizeBasis - m + 1
    ..sizeBasis])) :
  else
    Coordinates[i] := 0 :
  end if;
if Coordinates[i] ≠ 0 then
  l := Array(1 ..m) :
  v := Vector(1 ..m) :
  for k to m do
    l[k] := partitions[i][k] + (k - 1) :
    v[k] := p[l[k]] :
  end do:
  Wr := wronskian(v, X) :
  schur := det(Wr) :
  τ := τ + Coordinates[i] · schur :
end if:
end do:

τ;

=

$$\left(\frac{1}{2} T^2 + \frac{1}{6} Y^3 + XYT + \frac{1}{4} X^2 Y^2 + \frac{1}{6} X^3 T + \frac{1}{24} X^4 Y + \frac{1}{720} X^6\right) (\kappa(1)^8 + \kappa(2)^8)$$


$$+ \left(\frac{1}{4} X^2 Y^2 + \frac{1}{3} X^3 T + \frac{1}{8} X^4 Y + \frac{1}{144} X^6 - \frac{1}{2} T^2 - \frac{1}{6} Y^3\right) (-\kappa(3)^7 \kappa(1)^2$$


$$- \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7$$


$$+ \kappa(4)^2 \kappa(2)^7) + \left(\frac{1}{2} Y^3 + \frac{1}{4} X^2 Y^2 + \frac{1}{8} X^4 Y + \frac{1}{80} X^6\right) (-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3$$


$$+ \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6)$$


$$+ \left(\frac{1}{6} X^3 T + \frac{1}{12} X^4 Y + \frac{1}{72} X^6 - XYT - \frac{1}{3} Y^3 - \frac{1}{2} X^2 Y^2 + \frac{1}{2} T^2\right) (\kappa(5)^2 \kappa(4)^6 \kappa(1)$$


$$+ \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2$$


$$- \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2$$


$$- \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1)$$


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$$\begin{aligned}
& -\kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{4} X^2 Y^2 + XY T \right. \\
& + \frac{1}{24} X^4 Y + T^2 - \frac{1}{6} X^3 T + \frac{1}{144} X^6 - \frac{1}{2} Y^3 \left. \right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 \\
& + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) \\
& + \left(-\frac{1}{3} X^3 T + \frac{1}{45} X^6 - T^2 \right) (-\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 \\
& + \kappa(5)^5 \kappa(3) \kappa(2)^3 - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 \\
& + \kappa(5)^5 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 \\
& - \kappa(5)^3 \kappa(3) \kappa(2)^5 + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 \\
& - \kappa(5)^3 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 \\
& + \kappa(5) \kappa(3)^3 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 \\
& + \kappa(5) \kappa(4)^3 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 \\
& + \kappa(6)^5 \kappa(3) \kappa(2)^3 - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 \\
& + \kappa(6)^5 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 \\
& - \kappa(6)^3 \kappa(3) \kappa(2)^5 + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 \\
& - \kappa(6)^3 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 \\
& + \kappa(6) \kappa(3)^3 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 \\
& + \kappa(6) \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{2} Y^3 - \frac{1}{24} X^4 Y - XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{144} X^6 - \frac{1}{6} X^3 T \right. \\
& + T^2 \left. \right) (-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(Y T + \frac{1}{2} X Y^2 + \frac{1}{2} X^2 T + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) (\kappa(1) \\
& + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 \\
& + \kappa(2)^6) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y + \frac{1}{30} X^5 - Y T \right) (-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) \\
& + \left(\frac{1}{2} X Y^2 + \frac{1}{6} X^3 Y + Y T - \frac{1}{2} X^2 T + \frac{1}{24} X^5 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 \\
& + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) \\
& + \left(\frac{1}{20} X^5 - X Y^2 \right) (-\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^5 \kappa(4)^2 \kappa(1)) + \left(\frac{1}{2} X Y^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y - Y T \right) (\\
& - \kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)) \\
& + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) \\
& + \left(\frac{1}{2} X^2 Y + \frac{1}{8} X^4 - \frac{1}{2} Y^2 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(Y^2 + \frac{1}{12} X^4 - XT \right) (\\
& -\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{8} X^4 - \frac{1}{2} Y^2 - \frac{1}{2} X^2 Y \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^2 - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(1) - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(1) - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(1) + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(1) + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^2 - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^2 - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^2 \kappa(1) - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(1) - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(1) + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^2 \kappa(4)^4 \kappa(1) + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^2 - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + \left(XY + T + \frac{1}{6} X^3 \right) (\kappa(1) \\
& + \kappa(2)) (\kappa(1)^4 - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + \left(\frac{X^3}{3} - T \right) (\\
& -\kappa(3)^4 \kappa(1)^2 - \kappa(3)^4 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^4 + \kappa(3)^2 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^2 - \kappa(4)^4 \kappa(2)^2 \\
& + \kappa(4)^2 \kappa(1)^4 + \kappa(4)^2 \kappa(2)^4) + \left(\frac{1}{6} X^3 - XY + T \right) (-\kappa(5)^3 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^3 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 - \kappa(5) \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 - \kappa(5) \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 - \kappa(6)^3 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^3 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 - \kappa(6) \kappa(3)^3 \kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(3)^3\kappa(2)^2 + \kappa(6)\kappa(3)^2\kappa(1)^3 + \kappa(6)\kappa(3)^2\kappa(2)^3 - \kappa(6)\kappa(4)^3\kappa(1)^2 \\
& -\kappa(6)\kappa(4)^3\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^3 + \kappa(6)\kappa(4)^2\kappa(2)^3) + \left(Y + \frac{X^2}{2}\right) (\kappa(1)^4 \\
& + \kappa(2)^4) + \left(\frac{X^2}{2} - Y\right) (-\kappa(3)^3\kappa(1)^2 - \kappa(3)^3\kappa(2)^2 + \kappa(3)^2\kappa(1)^3 + \kappa(3)^2\kappa(2)^3 \\
& - \kappa(4)^3\kappa(1)^2 - \kappa(4)^3\kappa(2)^2 + \kappa(4)^2\kappa(1)^3 + \kappa(4)^2\kappa(2)^3) + X(\kappa(1) + \kappa(2)) (\kappa(1)^2 \\
& - \kappa(1)\kappa(2) + \kappa(2)^2)
\end{aligned}$$

$$t := (X, Y, T) \rightarrow \tau :$$

#Hirota bilinear form (c,d=0)

$$\tau_x := \text{diff}(t(X, Y, T), X) :$$

$$\tau_{xx} := \text{diff}(\tau_x, X) :$$

$$\tau_{xxx} := \text{diff}(\tau_{xx}, X) :$$

$$\tau_{xxxx} := \text{diff}(\tau_{xxx}, X) :$$

$$\tau_t := \text{diff}(t(X, Y, T), T) :$$

$$\tau_{xt} := \text{diff}(\tau_x, T) :$$

$$\tau_y := \text{diff}(t(X, Y, T), Y) :$$

$$\tau_{yy} := \text{diff}(\tau_y, Y) :$$

$$\begin{aligned}
\text{Hirota} := & (\tau_{xxxx} \cdot \tau - 4 \cdot \tau_{xxx} \cdot \tau_x + 3 \tau_{xx}^2) + 4 \cdot (\tau_x \cdot \tau_t - \tau \cdot \tau_{xt}) + 3 \cdot (\tau \cdot \tau_{yy} - \tau_y^2) = \\
& 4 \left(-\kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 \right. \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 \\
& - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 \\
& \left. - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 + \kappa(6) \kappa(3)^2 \kappa(2)^3 \right)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^3\kappa(1)^2 - \kappa(6)\kappa(4)^3\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^3 + \kappa(6)\kappa(4)^2\kappa(2)^3 \\
& + \kappa(3)^4\kappa(1)^2 + \kappa(3)^4\kappa(2)^2 - \kappa(3)^2\kappa(1)^4 - \kappa(3)^2\kappa(2)^4 + \kappa(4)^4\kappa(1)^2 + \kappa(4)^4\kappa(2)^2 \\
& - \kappa(4)^2\kappa(1)^4 - \kappa(4)^2\kappa(2)^4 + \left(\frac{1}{3}X^3 - T\right) \left(-\kappa(3)^7\kappa(1)^2 - \kappa(3)^7\kappa(2)^2 + \kappa(3)^2\kappa(1)^7 \right. \\
& + \kappa(3)^2\kappa(2)^7 - \kappa(4)^7\kappa(1)^2 - \kappa(4)^7\kappa(2)^2 + \kappa(4)^2\kappa(1)^7 + \kappa(4)^2\kappa(2)^7) + \left(\frac{1}{6}X^3 \right. \\
& \left. - XY + T\right) \left(\kappa(5)^2\kappa(4)^6\kappa(1) + \kappa(5)^2\kappa(4)^6\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^6 \right. \\
& - \kappa(5)^2\kappa(4)\kappa(2)^6 - \kappa(5)\kappa(3)^6\kappa(1)^2 - \kappa(5)\kappa(3)^6\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^6 \\
& + \kappa(5)\kappa(3)^2\kappa(2)^6 - \kappa(5)\kappa(4)^6\kappa(1)^2 - \kappa(5)\kappa(4)^6\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^6 \\
& + \kappa(5)\kappa(4)^2\kappa(2)^6 - \kappa(6)^6\kappa(3)^2\kappa(1) - \kappa(6)^6\kappa(3)^2\kappa(2) + \kappa(6)^6\kappa(3)\kappa(1)^2 \\
& + \kappa(6)^6\kappa(3)\kappa(2)^2 - \kappa(6)^6\kappa(4)^2\kappa(1) - \kappa(6)^6\kappa(4)^2\kappa(2) + \kappa(6)^6\kappa(4)\kappa(1)^2 \\
& + \kappa(6)^6\kappa(4)\kappa(2)^2 + \kappa(6)^2\kappa(3)^6\kappa(1) + \kappa(6)^2\kappa(3)^6\kappa(2) - \kappa(6)^2\kappa(3)\kappa(1)^6 \\
& - \kappa(6)^2\kappa(3)\kappa(2)^6 + \kappa(6)^2\kappa(4)^6\kappa(1) + \kappa(6)^2\kappa(4)^6\kappa(2) - \kappa(6)^2\kappa(4)\kappa(1)^6 \\
& - \kappa(6)^2\kappa(4)\kappa(2)^6 - \kappa(6)\kappa(3)^6\kappa(1)^2 - \kappa(6)\kappa(3)^6\kappa(2)^2 + \kappa(6)\kappa(3)^2\kappa(1)^6 \\
& + \kappa(6)\kappa(3)^2\kappa(2)^6 - \kappa(6)\kappa(4)^6\kappa(1)^2 - \kappa(6)\kappa(4)^6\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^6 \\
& + \kappa(6)\kappa(4)^2\kappa(2)^6 - \kappa(5)^6\kappa(3)^2\kappa(1) - \kappa(5)^6\kappa(3)^2\kappa(2) + \kappa(5)^6\kappa(3)\kappa(1)^2 \\
& + \kappa(5)^6\kappa(3)\kappa(2)^2 - \kappa(5)^6\kappa(4)^2\kappa(1) - \kappa(5)^6\kappa(4)^2\kappa(2) + \kappa(5)^6\kappa(4)\kappa(1)^2 \\
& + \kappa(5)^6\kappa(4)\kappa(2)^2 + \kappa(5)^2\kappa(3)^6\kappa(1) + \kappa(5)^2\kappa(3)^6\kappa(2) - \kappa(5)^2\kappa(3)\kappa(1)^6 \\
& - \kappa(5)^2\kappa(3)\kappa(2)^6) + \left(XY + 2T - \frac{1}{6}X^3\right) \left(-\kappa(3)^5\kappa(1)^4 - \kappa(3)^5\kappa(2)^4 + \kappa(3)^4\kappa(1)^5 \right. \\
& + \kappa(3)^4\kappa(2)^5 - \kappa(4)^5\kappa(1)^4 - \kappa(4)^5\kappa(2)^4 + \kappa(4)^4\kappa(1)^5 + \kappa(4)^4\kappa(2)^5) + \left(-\frac{1}{2}X^2 \right. \\
& \left. - Y\right) \left(-\kappa(6)^4\kappa(4)^3\kappa(2) + \kappa(6)^4\kappa(4)\kappa(1)^3 + \kappa(6)^4\kappa(4)\kappa(2)^3 + \kappa(6)^3\kappa(3)^4\kappa(1) \right. \\
& + \kappa(6)^3\kappa(3)^4\kappa(2) - \kappa(6)^3\kappa(3)\kappa(1)^4 - \kappa(6)^3\kappa(3)\kappa(2)^4 + \kappa(6)^3\kappa(4)^4\kappa(1) \\
& + \kappa(6)^3\kappa(4)^4\kappa(2) - \kappa(6)^3\kappa(4)\kappa(1)^4 - \kappa(6)^3\kappa(4)\kappa(2)^4 - \kappa(6)\kappa(3)^4\kappa(1)^3 \\
& - \kappa(6)\kappa(3)^4\kappa(2)^3 + \kappa(6)\kappa(3)^3\kappa(1)^4 + \kappa(6)\kappa(3)^3\kappa(2)^4 - \kappa(6)\kappa(4)^4\kappa(1)^3
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^4\kappa(2)^3 + \kappa(6)\kappa(4)^3\kappa(1)^4 + \kappa(6)\kappa(4)^3\kappa(2)^4 - \kappa(5)^4\kappa(3)^3\kappa(1) \\
& - \kappa(5)^4\kappa(3)^3\kappa(2) + \kappa(5)^4\kappa(3)\kappa(1)^3 + \kappa(5)^4\kappa(3)\kappa(2)^3 - \kappa(5)^4\kappa(4)^3\kappa(1) \\
& - \kappa(5)^4\kappa(4)^3\kappa(2) + \kappa(5)^4\kappa(4)\kappa(1)^3 + \kappa(5)^4\kappa(4)\kappa(2)^3 + \kappa(5)^3\kappa(3)^4\kappa(1) \\
& + \kappa(5)^3\kappa(3)^4\kappa(2) - \kappa(5)^3\kappa(3)\kappa(1)^4 - \kappa(5)^3\kappa(3)\kappa(2)^4 + \kappa(5)^3\kappa(4)^4\kappa(1) \\
& + \kappa(5)^3\kappa(4)^4\kappa(2) - \kappa(5)^3\kappa(4)\kappa(1)^4 - \kappa(5)^3\kappa(4)\kappa(2)^4 - \kappa(5)\kappa(3)^4\kappa(1)^3 \\
& - \kappa(5)\kappa(3)^4\kappa(2)^3 + \kappa(5)\kappa(3)^3\kappa(1)^4 + \kappa(5)\kappa(3)^3\kappa(2)^4 - \kappa(5)\kappa(4)^4\kappa(1)^3 \\
& - \kappa(5)\kappa(4)^4\kappa(2)^3 + \kappa(5)\kappa(4)^3\kappa(1)^4 + \kappa(5)\kappa(4)^3\kappa(2)^4 - \kappa(6)^4\kappa(3)^3\kappa(1) \\
& - \kappa(6)^4\kappa(3)^3\kappa(2) + \kappa(6)^4\kappa(3)\kappa(1)^3 + \kappa(6)^4\kappa(3)\kappa(2)^3 - \kappa(6)^4\kappa(4)^3\kappa(1) \Big) + \left(Y \right. \\
& \left. - \frac{1}{2} X^2 \right) \left(-\kappa(3)^5\kappa(1)^3 - \kappa(3)^5\kappa(2)^3 + \kappa(3)^3\kappa(1)^5 + \kappa(3)^3\kappa(2)^5 - \kappa(4)^5\kappa(1)^3 \right. \\
& \left. - \kappa(4)^5\kappa(2)^3 + \kappa(4)^3\kappa(1)^5 + \kappa(4)^3\kappa(2)^5 \right) + \left(\frac{1}{2} X^2 - Y \right) \left(-\kappa(3)^6\kappa(1)^2 \right. \\
& \left. - \kappa(3)^6\kappa(2)^2 + \kappa(3)^2\kappa(1)^6 + \kappa(3)^2\kappa(2)^6 - \kappa(4)^6\kappa(1)^2 - \kappa(4)^6\kappa(2)^2 + \kappa(4)^2\kappa(1)^6 \right. \\
& \left. + \kappa(4)^2\kappa(2)^6 \right) + \left(-XY - \frac{1}{6} X^3 + 2T \right) \left(-\kappa(6)^4\kappa(3)^3\kappa(2)^2 + \kappa(6)^4\kappa(3)^2\kappa(1)^3 \right. \\
& \left. + \kappa(6)^4\kappa(3)^2\kappa(2)^3 - \kappa(6)^4\kappa(4)^3\kappa(1)^2 - \kappa(6)^4\kappa(4)^3\kappa(2)^2 + \kappa(6)^4\kappa(4)^2\kappa(1)^3 \right. \\
& \left. + \kappa(6)^4\kappa(4)^2\kappa(2)^3 + \kappa(6)^3\kappa(3)^4\kappa(1)^2 + \kappa(6)^3\kappa(3)^4\kappa(2)^2 - \kappa(6)^3\kappa(3)^2\kappa(1)^4 \right. \\
& \left. - \kappa(6)^3\kappa(3)^2\kappa(2)^4 + \kappa(6)^3\kappa(4)^4\kappa(1)^2 + \kappa(6)^3\kappa(4)^4\kappa(2)^2 - \kappa(6)^3\kappa(4)^2\kappa(1)^4 \right. \\
& \left. - \kappa(6)^3\kappa(4)^2\kappa(2)^4 - \kappa(6)^2\kappa(3)^4\kappa(1)^3 - \kappa(6)^2\kappa(3)^4\kappa(2)^3 + \kappa(6)^2\kappa(3)^3\kappa(1)^4 \right. \\
& \left. + \kappa(6)^2\kappa(3)^3\kappa(2)^4 - \kappa(6)^2\kappa(4)^4\kappa(1)^3 - \kappa(6)^2\kappa(4)^4\kappa(2)^3 + \kappa(6)^2\kappa(4)^3\kappa(1)^4 \right. \\
& \left. + \kappa(6)^2\kappa(4)^3\kappa(2)^4 - \kappa(5)^4\kappa(3)^3\kappa(1)^2 - \kappa(5)^4\kappa(3)^3\kappa(2)^2 + \kappa(5)^4\kappa(3)^2\kappa(1)^3 \right. \\
& \left. + \kappa(5)^4\kappa(3)^2\kappa(2)^3 - \kappa(5)^4\kappa(4)^3\kappa(1)^2 - \kappa(5)^4\kappa(4)^3\kappa(2)^2 + \kappa(5)^4\kappa(4)^2\kappa(1)^3 \right. \\
& \left. + \kappa(5)^4\kappa(4)^2\kappa(2)^3 + \kappa(5)^3\kappa(3)^4\kappa(1)^2 + \kappa(5)^3\kappa(3)^4\kappa(2)^2 - \kappa(5)^3\kappa(3)^2\kappa(1)^4 \right. \\
& \left. - \kappa(5)^3\kappa(3)^2\kappa(2)^4 + \kappa(5)^3\kappa(4)^4\kappa(1)^2 + \kappa(5)^3\kappa(4)^4\kappa(2)^2 - \kappa(5)^3\kappa(4)^2\kappa(1)^4 \right. \\
& \left. - \kappa(5)^3\kappa(4)^2\kappa(2)^4 - \kappa(5)^2\kappa(3)^4\kappa(1)^3 - \kappa(5)^2\kappa(3)^4\kappa(2)^3 + \kappa(5)^2\kappa(3)^3\kappa(1)^4 \right.
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(-\frac{1}{3} X^3 - 2T \right) \left(-\kappa(5)^5 \kappa(3)^3 \kappa(1) \right. \\
& - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 - \kappa(5)^5 \kappa(4)^3 \kappa(1) \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^5 \kappa(1) \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 + \kappa(5)^3 \kappa(4)^5 \kappa(1) \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^3 \\
& - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^3 \\
& - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^3 \kappa(1) \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 - \kappa(6)^5 \kappa(4)^3 \kappa(1) \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^5 \kappa(1) \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 + \kappa(6)^3 \kappa(4)^5 \kappa(1) \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^3 \\
& - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^3 \\
& - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5) + \left(XY + T \right. \\
& \left. + \frac{1}{6} X^3 \right) \left(\kappa(1)^8 + \kappa(2)^8 \right) - X \left(-\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 \right. \\
& \left. + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4 \right) + \left(\kappa(1) \right. \\
& \left. + \kappa(2) \right) \left(\kappa(1)^4 - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4 \right) + \left(Y \right. \\
& \left. + \frac{1}{2} X^2 \right) \left(\kappa(1) + \kappa(2) \right) \left(\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 \right. \\
& \left. + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6 \right) + X \left(\kappa(1)^2 + \kappa(2)^2 \right) \left(\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 \right. \\
& \left. + \kappa(2)^4 \right) \left(\left(YT + \frac{1}{2} XY^2 + \frac{1}{2} X^2 T + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) \left(\kappa(1)^8 + \kappa(2)^8 \right) \right. \\
& \left. + \left(\frac{1}{2} XY^2 + X^2 T + \frac{1}{2} X^3 Y + \frac{1}{24} X^5 \right) \left(-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 \right. \right. \\
& \left. \left. + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7 \right) + \left(\frac{1}{2} XY^2 \right.
\end{aligned}$$

$$\begin{aligned}
& + \frac{1}{2} X^3 Y + \frac{3}{40} X^5 \Big) \left(-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 \right. \\
& - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6 \Big) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y \right. \\
& + \frac{1}{12} X^5 - Y T - X Y^2 \Big) \left(\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 \right. \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^6 \Big) + \left(\frac{1}{2} X Y^2 + \frac{1}{6} X^3 Y + Y T - \frac{1}{2} X^2 T + \frac{1}{24} X^5 \right) \left(-\kappa(3)^5 \kappa(1)^4 \right. \\
& - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 \\
& + \kappa(4)^4 \kappa(2)^5 \Big) + \left(-X^2 T + \frac{2}{15} X^5 \right) \left(-\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) \right. \\
& + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) \\
& + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) \\
& - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) \\
& - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 \\
& + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) \\
& + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) \\
& + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) \\
& - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) \\
& - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 \\
& + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 \\
& + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{2} XY^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y \right. \\
& \left. - YT \right) \left(-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 \right. \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^6 \\
& - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6) + \left(XT \right. \\
& \left. + X^2 Y + \frac{1}{6} X^4 \right) \left(-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 \right)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) + \left(\frac{1}{2} Y^2 + \frac{1}{2} X^2 Y - XT \right. \\
& \left. + \frac{5}{24} X^4 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 \\
& - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{4} X^4 - Y^2 \right) (-\kappa(5)^5 \kappa(4)^2 \kappa(2) \\
& + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) \\
& - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) \\
& - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 \\
& + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 \\
& + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) \\
& + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) \\
& + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) \\
& - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) \\
& - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 \\
& + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 \\
& + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) \\
& + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1)) + \left(\frac{1}{2} Y^2 + \frac{5}{24} X^4 - XT \right. \\
& \left. - \frac{1}{2} X^2 Y \right) (-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1)) + \left(XY + T + \frac{1}{6} X^3 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 \\
& + \kappa(2)^4) + \left(XY + \frac{1}{2} X^3 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(\frac{1}{3} X^3 - T \right) (\\
& -\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{2} X^3 - XY \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 - \kappa(6)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 - \kappa(5)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 + \kappa(5)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^4
\end{aligned}$$

$$\begin{aligned}
& -\kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + X^2 (-\kappa(3)^4 \kappa(1)^2 - \kappa(3)^4 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^4 + \kappa(3)^2 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^2 - \kappa(4)^4 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^4 + \kappa(4)^2 \kappa(2)^4) \\
& + \left(\frac{1}{2} X^2 - Y \right) (-\kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(3) \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^3 - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^3 - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^3 - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(3) \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^3 - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^3 - \kappa(6) \kappa(4)^3 \kappa(1)^2 - \kappa(6) \kappa(4)^3 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^3 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^3) + X(\kappa(1)^4 + \kappa(2)^4) + X(-\kappa(3)^3 \kappa(1)^2 - \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^3 + \kappa(3)^2 \kappa(2)^3 - \kappa(4)^3 \kappa(1)^2 - \kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3) \\
& + (\kappa(1) + \kappa(2)) (\kappa(1)^2 - \kappa(1) \kappa(2) + \kappa(2)^2)) - 4 \left(\left(Y T + \frac{1}{2} X Y^2 + \frac{1}{2} X^2 T \right. \right. \\
& \left. \left. + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) (\kappa(1)^8 + \kappa(2)^8) + \left(\frac{1}{2} X Y^2 + X^2 T + \frac{1}{2} X^3 Y + \frac{1}{24} X^5 \right) \left(\right. \right. \\
& \left. \left. -\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 \right. \right. \\
& \left. \left. + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) + \left(\frac{1}{2} X Y^2 + \frac{1}{2} X^3 Y + \frac{3}{40} X^5 \right) (-\kappa(3)^6 \kappa(1)^3 \right. \right. \\
& \left. \left. - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 \right. \right. \\
& \left. \left. + \kappa(4)^3 \kappa(2)^6) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y + \frac{1}{12} X^5 - Y T - X Y^2 \right) (\kappa(5)^2 \kappa(4)^6 \kappa(1) \right. \right. \\
& \left. \left. + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 \right. \right. \\
& \left. \left. - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 \right. \right. \\
& \left. \left. - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) \right. \right. \\
& \left. \left. - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) \right. \right. \\
& \left. \left. - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) \right) \right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{2} XY^2 + \frac{1}{6} X^3 Y + YT \right. \\
& \left. - \frac{1}{2} X^2 T + \frac{1}{24} X^5 \right) \left(-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 \right. \\
& \left. - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5 \right) + \left(-X^2 T + \frac{2}{15} X^5 \right) \left(\right. \\
& -\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5) \\
& + \left(\frac{1}{2} XY^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y - YT \right) \left(-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 \right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(\frac{1}{2} Y^2 + XT \right. \\
& \left. + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 \\
& + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6) + \left(XT + X^2 Y + \frac{1}{6} X^4 \right) (-\kappa(3)^6 \kappa(1)^2 \\
& - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(4)^2 \kappa(2)^6) + \left(\frac{1}{2} Y^2 + \frac{1}{2} X^2 Y - XT + \frac{5}{24} X^4 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 \\
& + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) \\
& + \left(\frac{1}{4} X^4 - Y^2 \right) (-\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^5 \kappa(4)^2 \kappa(1) + \left(\frac{1}{2} Y^2 + \frac{5}{24} X^4 - XT - \frac{1}{2} X^2 Y \right) \left(-\kappa(6)^4 \kappa(4)^3 \kappa(2) \right. \\
& + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1) \left. \right) + \left(XY + T \right. \\
& + \left. \frac{1}{6} X^3 \right) \left(\kappa(1)^2 + \kappa(2)^2 \right) \left(\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4 \right) + \left(XY + \frac{1}{2} X^3 \right) \left(\right. \\
& - \kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 \left. \right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(\frac{1}{3} X^3 - T \right) (-\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) \\
& + \left(\frac{1}{2} X^3 - XY \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^2 - \kappa(5) \kappa(4)^4 \kappa(2)^2 \\
& + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^2 \kappa(1) - \kappa(6)^4 \kappa(3)^2 \kappa(2) \\
& + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 - \kappa(6)^4 \kappa(4)^2 \kappa(1) - \kappa(6)^4 \kappa(4)^2 \kappa(2) \\
& + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^4 \kappa(1) + \kappa(6)^2 \kappa(3)^4 \kappa(2) \\
& - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) + \kappa(6)^2 \kappa(4)^4 \kappa(2) \\
& - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 - \kappa(6) \kappa(3)^4 \kappa(2)^2 \\
& + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2 - \kappa(6) \kappa(4)^4 \kappa(2)^2 \\
& + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^2 \kappa(1) - \kappa(5)^4 \kappa(3)^2 \kappa(2) \\
& + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 - \kappa(5)^4 \kappa(4)^2 \kappa(1) - \kappa(5)^4 \kappa(4)^2 \kappa(2) \\
& + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^4 \kappa(1) + \kappa(5)^2 \kappa(3)^4 \kappa(2) \\
& - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 + \kappa(5)^2 \kappa(4)^4 \kappa(1) + \kappa(5)^2 \kappa(4)^4 \kappa(2) \\
& - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^2 - \kappa(5) \kappa(3)^4 \kappa(2)^2 \\
& + \kappa(5) \kappa(3)^2 \kappa(1)^4) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^4 - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 \\
& - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + X^2 (-\kappa(3)^4 \kappa(1)^2 - \kappa(3)^4 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^4 + \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(4)^4 \kappa(1)^2 - \kappa(4)^4 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^4 + \kappa(4)^2 \kappa(2)^4) + \left(\frac{1}{2} X^2 - Y \right) (\\
& -\kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 \\
& - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 \\
& - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 + \kappa(6) \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(6) \kappa(4)^3 \kappa(1)^2 - \kappa(6) \kappa(4)^3 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^3 + \kappa(6) \kappa(4)^2 \kappa(2)^3 \\
& + X(\kappa(1)^4 + \kappa(2)^4) + X(-\kappa(3)^3 \kappa(1)^2 - \kappa(3)^3 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^3 + \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(4)^3 \kappa(1)^2 - \kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3) + (\kappa(1) + \kappa(2)) (\kappa(1)^2 \\
& - \kappa(1) \kappa(2) + \kappa(2)^2) \left(-\kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 \right. \\
& + \kappa(5)^3 \kappa(3) \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^3 - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^3 - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^3 - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(3) \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^3 - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^3 - \kappa(6) \kappa(4)^3 \kappa(1)^2 - \kappa(6) \kappa(4)^3 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^3 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^3 - 2 \kappa(3)^4 \kappa(1)^2 - 2 \kappa(3)^4 \kappa(2)^2 + 2 \kappa(3)^2 \kappa(1)^4 + 2 \kappa(3)^2 \kappa(2)^4 \\
& - 2 \kappa(4)^4 \kappa(1)^2 - 2 \kappa(4)^4 \kappa(2)^2 + 2 \kappa(4)^2 \kappa(1)^4 + 2 \kappa(4)^2 \kappa(2)^4 + \left(XY + T \right. \\
& + \left. \frac{1}{6} X^3 \right) (\kappa(1)^8 + \kappa(2)^8) + \left(Y + \frac{5}{2} X^2 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 \\
& + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + (2X^2 \\
& + 2Y) (-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 \\
& - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) + \left(\frac{5}{6} X^3 - T - XY \right) (-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(-2T + \frac{8}{3} X^3 \right) \left(\right. \\
& - \kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^5\kappa(1)^3 - \kappa(6)\kappa(4)^5\kappa(2)^3 + \kappa(6)\kappa(4)^3\kappa(1)^5 + \kappa(6)\kappa(4)^3\kappa(2)^5) + \left(2T \right. \\
& \left. + 3XY + \frac{5}{6}X^3\right) \left(-\kappa(3)^7\kappa(1)^2 - \kappa(3)^7\kappa(2)^2 + \kappa(3)^2\kappa(1)^7 + \kappa(3)^2\kappa(2)^7\right. \\
& \left. - \kappa(4)^7\kappa(1)^2 - \kappa(4)^7\kappa(2)^2 + \kappa(4)^2\kappa(1)^7 + \kappa(4)^2\kappa(2)^7\right) + \left(3XY + \frac{3}{2}X^3\right) \left(\right. \\
& \left. -\kappa(3)^6\kappa(1)^3 - \kappa(3)^6\kappa(2)^3 + \kappa(3)^3\kappa(1)^6 + \kappa(3)^3\kappa(2)^6 - \kappa(4)^6\kappa(1)^3 - \kappa(4)^6\kappa(2)^3 \right. \\
& \left. + \kappa(4)^3\kappa(1)^6 + \kappa(4)^3\kappa(2)^6\right) + \left(T + 2XY + \frac{5}{3}X^3\right) \left(\kappa(5)^2\kappa(4)^6\kappa(1) \right. \\
& \left. + \kappa(5)^2\kappa(4)^6\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^6 - \kappa(5)^2\kappa(4)\kappa(2)^6 - \kappa(5)\kappa(3)^6\kappa(1)^2 \right. \\
& \left. - \kappa(5)\kappa(3)^6\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^6 + \kappa(5)\kappa(3)^2\kappa(2)^6 - \kappa(5)\kappa(4)^6\kappa(1)^2 \right. \\
& \left. - \kappa(5)\kappa(4)^6\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^6 + \kappa(5)\kappa(4)^2\kappa(2)^6 - \kappa(6)^6\kappa(3)^2\kappa(1) \right. \\
& \left. - \kappa(6)^6\kappa(3)^2\kappa(2) + \kappa(6)^6\kappa(3)\kappa(1)^2 + \kappa(6)^6\kappa(3)\kappa(2)^2 - \kappa(6)^6\kappa(4)^2\kappa(1) \right. \\
& \left. - \kappa(6)^6\kappa(4)^2\kappa(2) + \kappa(6)^6\kappa(4)\kappa(1)^2 + \kappa(6)^6\kappa(4)\kappa(2)^2 + \kappa(6)^2\kappa(3)^6\kappa(1) \right. \\
& \left. + \kappa(6)^2\kappa(3)^6\kappa(2) - \kappa(6)^2\kappa(3)\kappa(1)^6 - \kappa(6)^2\kappa(3)\kappa(2)^6 + \kappa(6)^2\kappa(4)^6\kappa(1) \right. \\
& \left. + \kappa(6)^2\kappa(4)^6\kappa(2) - \kappa(6)^2\kappa(4)\kappa(1)^6 - \kappa(6)^2\kappa(4)\kappa(2)^6 - \kappa(6)\kappa(3)^6\kappa(1)^2 \right. \\
& \left. - \kappa(6)\kappa(3)^6\kappa(2)^2 + \kappa(6)\kappa(3)^2\kappa(1)^6 + \kappa(6)\kappa(3)^2\kappa(2)^6 - \kappa(6)\kappa(4)^6\kappa(1)^2 \right. \\
& \left. - \kappa(6)\kappa(4)^6\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^6 + \kappa(6)\kappa(4)^2\kappa(2)^6 - \kappa(5)^6\kappa(3)^2\kappa(1) \right. \\
& \left. - \kappa(5)^6\kappa(3)^2\kappa(2) + \kappa(5)^6\kappa(3)\kappa(1)^2 + \kappa(5)^6\kappa(3)\kappa(2)^2 - \kappa(5)^6\kappa(4)^2\kappa(1) \right. \\
& \left. - \kappa(5)^6\kappa(4)^2\kappa(2) + \kappa(5)^6\kappa(4)\kappa(1)^2 + \kappa(5)^6\kappa(4)\kappa(2)^2 + \kappa(5)^2\kappa(3)^6\kappa(1) \right. \\
& \left. + \kappa(5)^2\kappa(3)^6\kappa(2) - \kappa(5)^2\kappa(3)\kappa(1)^6 - \kappa(5)^2\kappa(3)\kappa(2)^6\right) + \left(XY - T + \frac{5}{6}X^3\right) \left(\right. \\
& \left. -\kappa(3)^5\kappa(1)^4 - \kappa(3)^5\kappa(2)^4 + \kappa(3)^4\kappa(1)^5 + \kappa(3)^4\kappa(2)^5 - \kappa(4)^5\kappa(1)^4 - \kappa(4)^5\kappa(2)^4 \right. \\
& \left. + \kappa(4)^4\kappa(1)^5 + \kappa(4)^4\kappa(2)^5\right) + 3X\left(\kappa(5)\kappa(3)^2\kappa(2)^4 - \kappa(5)\kappa(4)^4\kappa(1)^2 \right. \\
& \left. - \kappa(5)\kappa(4)^4\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^4 + \kappa(5)\kappa(4)^2\kappa(2)^4 - \kappa(6)^4\kappa(3)^2\kappa(1) \right. \\
& \left. - \kappa(6)^4\kappa(3)^2\kappa(2) + \kappa(6)^4\kappa(3)\kappa(1)^2 + \kappa(6)^4\kappa(3)\kappa(2)^2 - \kappa(6)^4\kappa(4)^2\kappa(1) \right. \\
& \left. - \kappa(6)^4\kappa(4)^2\kappa(2) + \kappa(6)^4\kappa(4)\kappa(1)^2 + \kappa(6)^4\kappa(4)\kappa(2)^2 + \kappa(6)^2\kappa(3)^4\kappa(1) \right. \\
& \left. + \kappa(6)^2\kappa(3)^4\kappa(2) - \kappa(6)^2\kappa(3)\kappa(1)^4 - \kappa(6)^2\kappa(3)\kappa(2)^4\right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 - \kappa(5)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 + \kappa(5)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + 2X(-\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) \\
& + 3X(-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(\frac{5}{2} X^2 - Y\right) (-\kappa(6)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)) + 3X^2 (-\kappa(5)^5 \kappa(4)^2 \kappa(2) \\
& + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) \\
& - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) \\
& - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 \\
& + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 \\
& + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) \\
& + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) \\
& + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) \\
& - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) \\
& - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 \\
& + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 \\
& + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) \\
& + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1)) + (\kappa(1) + \kappa(2)) (\kappa(1)^4 \\
& - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1) \\
& + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 \\
& + \kappa(2)^6) + X (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4)) - 4 \left(\left(Y \right. \right. \\
& + \left. \frac{1}{2} X^2 \right) (\kappa(1)^8 + \kappa(2)^8) + X^2 (-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 \\
& + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) + \left(\frac{1}{2} X^2 \right. \\
& - \left. Y \right) (\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 \\
& - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 \\
& - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 \\
& + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 \\
& - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 \\
& - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(Y \right. \\
& \left. - \frac{1}{2} X^2 \right) \left(-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 \right. \\
& \left. - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5 \right) - X^2 \left(-\kappa(5)^5 \kappa(3)^3 \kappa(1) \right. \\
& \left. - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 - \kappa(5)^5 \kappa(4)^3 \kappa(1) \right. \\
& \left. - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^5 \kappa(1) \right. \\
& \left. + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 + \kappa(5)^3 \kappa(4)^5 \kappa(1) \right. \\
& \left. + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^3 \right. \\
& \left. - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^3 \right. \\
& \left. - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^3 \kappa(1) \right. \\
& \left. - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 - \kappa(6)^5 \kappa(4)^3 \kappa(1) \right. \\
& \left. - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^5 \kappa(1) \right. \\
& \left. + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 + \kappa(6)^3 \kappa(4)^5 \kappa(1) \right. \\
& \left. + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^3 \right. \\
& \left. - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^3 \right. \\
& \left. - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5 \right) + \left(-\frac{1}{2} X^2 - Y \right) \left(\right. \\
& \left. -\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 \right)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) \\
& + X(\kappa(1) + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 \\
& - \kappa(1) \kappa(2)^5 + \kappa(2)^6) + X(-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) - X(-\kappa(3)^5 \kappa(1)^3 \\
& - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 \\
& + \kappa(4)^3 \kappa(2)^5) - X(-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1)) + (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) + \kappa(3)^4 \kappa(1)^3 \\
& + \kappa(3)^4 \kappa(2)^3 - \kappa(3)^3 \kappa(1)^4 - \kappa(3)^3 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^3 + \kappa(4)^4 \kappa(2)^3 - \kappa(4)^3 \kappa(1)^4 \\
& - \kappa(4)^3 \kappa(2)^4) \left(\left(\frac{1}{2} T^2 + \frac{1}{6} Y^3 + XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{6} X^3 T + \frac{1}{24} X^4 Y \right. \right. \\
& \left. \left. + \frac{1}{720} X^6 \right) (\kappa(1)^8 + \kappa(2)^8) + \left(\frac{1}{4} X^2 Y^2 + \frac{1}{3} X^3 T + \frac{1}{8} X^4 Y + \frac{1}{144} X^6 - \frac{1}{2} T^2 \right. \right. \\
& \left. \left. - \frac{1}{6} Y^3 \right) (-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 \right. \\
& \left. - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) + \left(\frac{1}{2} Y^3 + \frac{1}{4} X^2 Y^2 + \frac{1}{8} X^4 Y \right. \right.
\end{aligned}$$

$$\begin{aligned}
& + \frac{1}{80} X^6) \left(-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 \right. \\
& - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6) + \left(\frac{1}{6} X^3 T + \frac{1}{12} X^4 Y + \frac{1}{72} X^6 - XY T \right. \\
& - \frac{1}{3} Y^3 - \frac{1}{2} X^2 Y^2 + \frac{1}{2} T^2) \left(\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 \right. \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{4} X^2 Y^2 + XY T + \frac{1}{24} X^4 Y + T^2 - \frac{1}{6} X^3 T + \frac{1}{144} X^6 \right. \\
& - \frac{1}{2} Y^3) \left(-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 \right. \\
& - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) + \left(-\frac{1}{3} X^3 T + \frac{1}{45} X^6 - T^2 \right) \left(\right. \\
& -\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& \left. - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \right)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)\kappa(4)^5\kappa(1)^3 - \kappa(5)\kappa(4)^5\kappa(2)^3 + \kappa(5)\kappa(4)^3\kappa(1)^5 + \kappa(5)\kappa(4)^3\kappa(2)^5 \\
& - \kappa(6)^5\kappa(3)^3\kappa(1) - \kappa(6)^5\kappa(3)^3\kappa(2) + \kappa(6)^5\kappa(3)\kappa(1)^3 + \kappa(6)^5\kappa(3)\kappa(2)^3 \\
& - \kappa(6)^5\kappa(4)^3\kappa(1) - \kappa(6)^5\kappa(4)^3\kappa(2) + \kappa(6)^5\kappa(4)\kappa(1)^3 + \kappa(6)^5\kappa(4)\kappa(2)^3 \\
& + \kappa(6)^3\kappa(3)^5\kappa(1) + \kappa(6)^3\kappa(3)^5\kappa(2) - \kappa(6)^3\kappa(3)\kappa(1)^5 - \kappa(6)^3\kappa(3)\kappa(2)^5 \\
& + \kappa(6)^3\kappa(4)^5\kappa(1) + \kappa(6)^3\kappa(4)^5\kappa(2) - \kappa(6)^3\kappa(4)\kappa(1)^5 - \kappa(6)^3\kappa(4)\kappa(2)^5 \\
& - \kappa(6)\kappa(3)^5\kappa(1)^3 - \kappa(6)\kappa(3)^5\kappa(2)^3 + \kappa(6)\kappa(3)^3\kappa(1)^5 + \kappa(6)\kappa(3)^3\kappa(2)^5 \\
& - \kappa(6)\kappa(4)^5\kappa(1)^3 - \kappa(6)\kappa(4)^5\kappa(2)^3 + \kappa(6)\kappa(4)^3\kappa(1)^5 + \kappa(6)\kappa(4)^3\kappa(2)^5) \\
& + \left(\frac{1}{2} Y^3 - \frac{1}{24} X^4 Y - XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{144} X^6 - \frac{1}{6} X^3 T + T^2 \right) (\\
& -\kappa(6)^4\kappa(3)^3\kappa(2)^2 + \kappa(6)^4\kappa(3)^2\kappa(1)^3 + \kappa(6)^4\kappa(3)^2\kappa(2)^3 - \kappa(6)^4\kappa(4)^3\kappa(1)^2 \\
& - \kappa(6)^4\kappa(4)^3\kappa(2)^2 + \kappa(6)^4\kappa(4)^2\kappa(1)^3 + \kappa(6)^4\kappa(4)^2\kappa(2)^3 + \kappa(6)^3\kappa(3)^4\kappa(1)^2 \\
& + \kappa(6)^3\kappa(3)^4\kappa(2)^2 - \kappa(6)^3\kappa(3)^2\kappa(1)^4 - \kappa(6)^3\kappa(3)^2\kappa(2)^4 + \kappa(6)^3\kappa(4)^4\kappa(1)^2 \\
& + \kappa(6)^3\kappa(4)^4\kappa(2)^2 - \kappa(6)^3\kappa(4)^2\kappa(1)^4 - \kappa(6)^3\kappa(4)^2\kappa(2)^4 - \kappa(6)^2\kappa(3)^4\kappa(1)^3 \\
& - \kappa(6)^2\kappa(3)^4\kappa(2)^3 + \kappa(6)^2\kappa(3)^3\kappa(1)^4 + \kappa(6)^2\kappa(3)^3\kappa(2)^4 - \kappa(6)^2\kappa(4)^4\kappa(1)^3 \\
& - \kappa(6)^2\kappa(4)^4\kappa(2)^3 + \kappa(6)^2\kappa(4)^3\kappa(1)^4 + \kappa(6)^2\kappa(4)^3\kappa(2)^4 - \kappa(5)^4\kappa(3)^3\kappa(1)^2 \\
& - \kappa(5)^4\kappa(3)^3\kappa(2)^2 + \kappa(5)^4\kappa(3)^2\kappa(1)^3 + \kappa(5)^4\kappa(3)^2\kappa(2)^3 - \kappa(5)^4\kappa(4)^3\kappa(1)^2 \\
& - \kappa(5)^4\kappa(4)^3\kappa(2)^2 + \kappa(5)^4\kappa(4)^2\kappa(1)^3 + \kappa(5)^4\kappa(4)^2\kappa(2)^3 + \kappa(5)^3\kappa(3)^4\kappa(1)^2 \\
& + \kappa(5)^3\kappa(3)^4\kappa(2)^2 - \kappa(5)^3\kappa(3)^2\kappa(1)^4 - \kappa(5)^3\kappa(3)^2\kappa(2)^4 + \kappa(5)^3\kappa(4)^4\kappa(1)^2 \\
& + \kappa(5)^3\kappa(4)^4\kappa(2)^2 - \kappa(5)^3\kappa(4)^2\kappa(1)^4 - \kappa(5)^3\kappa(4)^2\kappa(2)^4 - \kappa(5)^2\kappa(3)^4\kappa(1)^3 \\
& - \kappa(5)^2\kappa(3)^4\kappa(2)^3 + \kappa(5)^2\kappa(3)^3\kappa(1)^4 + \kappa(5)^2\kappa(3)^3\kappa(2)^4 - \kappa(5)^2\kappa(4)^4\kappa(1)^3 \\
& - \kappa(5)^2\kappa(4)^4\kappa(2)^3 + \kappa(5)^2\kappa(4)^3\kappa(1)^4 + \kappa(5)^2\kappa(4)^3\kappa(2)^4 - \kappa(6)^4\kappa(3)^3\kappa(1)^2) \\
& + \left(YT + \frac{1}{2} XY^2 + \frac{1}{2} X^2 T + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5\kappa(2) \\
& + \kappa(1)^4\kappa(2)^2 - \kappa(1)^3\kappa(2)^3 + \kappa(1)^2\kappa(2)^4 - \kappa(1)\kappa(2)^5 + \kappa(2)^6) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y \right)
\end{aligned}$$

$$\begin{aligned}
& + \frac{1}{30} X^5 - YT) \left(-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 \right. \\
& - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) + \left(\frac{1}{2} XY^2 + \frac{1}{6} X^3 Y + YT \right. \\
& - \frac{1}{2} X^2 T + \frac{1}{24} X^5) \left(-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 \right. \\
& - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{20} X^5 - XY^2 \right) (\\
& -\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1)) \\
& + \left(\frac{1}{2} XY^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y - YT \right) \left(-\kappa(6)^4 \kappa(4)^3 \kappa(2) \right. \\
& + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1) + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y \right. \\
& \left. + \frac{1}{24} X^4 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) + \left(\frac{1}{2} X^2 Y + \frac{1}{8} X^4 \right. \\
& \left. - \frac{1}{2} Y^2 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(Y^2 + \frac{1}{12} X^4 - XT \right) (-\kappa(3)^4 \kappa(1)^3 \\
& - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{8} X^4 - \frac{1}{2} Y^2 - \frac{1}{2} X^2 Y \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 - \kappa(6)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 - \kappa(5)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 + \kappa(5)^2 \kappa(4)^4 \kappa(1)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + \left(XY + T + \frac{1}{6} X^3 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^4 \\
& - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + \left(\frac{1}{3} X^3 - T \right) (-\kappa(3)^4 \kappa(1)^2 \\
& - \kappa(3)^4 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^4 + \kappa(3)^2 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^2 - \kappa(4)^4 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^4 \\
& + \kappa(4)^2 \kappa(2)^4) + \left(\frac{1}{6} X^3 - XY + T \right) (-\kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) \\
& + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) \\
& + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) \\
& - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) \\
& - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) \\
& + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) \\
& + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) \\
& - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) \\
& - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(6) \kappa(3)^2 \kappa(1)^3 + \kappa(6) \kappa(3)^2 \kappa(2)^3 - \kappa(6) \kappa(4)^3 \kappa(1)^2 - \kappa(6) \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(6) \kappa(4)^2 \kappa(1)^3 + \kappa(6) \kappa(4)^2 \kappa(2)^3) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1)^4 + \kappa(2)^4) + \left(\frac{1}{2} X^2 \right. \\
& \left. - Y \right) (-\kappa(3)^3 \kappa(1)^2 - \kappa(3)^3 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^3 + \kappa(3)^2 \kappa(2)^3 - \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3) + X (\kappa(1) + \kappa(2)) (\kappa(1)^2 - \kappa(1) \kappa(2) \\
& + \kappa(2)^2) \Big) + 3 \left(-\kappa(3)^3 \kappa(1)^2 - \kappa(3)^3 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^3 + \kappa(3)^2 \kappa(2)^3 \right. \\
& \left. - \kappa(4)^3 \kappa(1)^2 - \kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3 + \left(\frac{3}{2} X^2 \right. \right. \\
& \left. \left. - Y \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^2 - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 \right.
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5) \kappa(4)^2 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^2 \kappa(1) - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^4 \kappa(3) \kappa(2)^2 - \kappa(6)^4 \kappa(4)^2 \kappa(1) - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^4 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^4 \kappa(1) + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2 - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^2 \kappa(1) - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^4 \kappa(3) \kappa(2)^2 - \kappa(5)^4 \kappa(4)^2 \kappa(1) - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^4 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^4 \kappa(1) + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^4 + \kappa(5)^2 \kappa(4)^4 \kappa(1) + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^2 - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + X^2 (\\
& - \kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) + \left(Y + \frac{3}{2} X^2 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) \\
& + \left(\frac{5}{6} X^3 - T - XY \right) (-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1) + X^3 \left(-\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 \right. \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^5 \kappa(4)^2 \kappa(1) + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1)^8 + \kappa(2)^8) + \left(XY - T \right. \\
& + \left. \frac{5}{6} X^3 \right) \left(-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 \right. \\
& - \left. \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5 \right) + \left(T + 2XY + \frac{2}{3} X^3 \right) \left(-\kappa(3)^6 \kappa(1)^2 \right. \\
& - \left. \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 \right. \\
& + \left. \kappa(4)^2 \kappa(2)^6 \right) + \left(\frac{1}{2} Y^2 + \frac{5}{24} X^4 - XT - \frac{1}{2} X^2 Y \right) \left(-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 \right. \\
& + \left. \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 \right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(-2XT + \frac{2}{3} X^4 \right) (\\
& - \kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^5\kappa(1)^3 - \kappa(6)\kappa(4)^5\kappa(2)^3 + \kappa(6)\kappa(4)^3\kappa(1)^5 + \kappa(6)\kappa(4)^3\kappa(2)^5) + X(\\
& -\kappa(5)^3\kappa(3)^2\kappa(1) - \kappa(5)^3\kappa(3)^2\kappa(2) + \kappa(5)^3\kappa(3)\kappa(1)^2 + \kappa(5)^3\kappa(3)\kappa(2)^2 \\
& - \kappa(5)^3\kappa(4)^2\kappa(1) - \kappa(5)^3\kappa(4)^2\kappa(2) + \kappa(5)^3\kappa(4)\kappa(1)^2 + \kappa(5)^3\kappa(4)\kappa(2)^2 \\
& + \kappa(5)^2\kappa(3)^3\kappa(1) + \kappa(5)^2\kappa(3)^3\kappa(2) - \kappa(5)^2\kappa(3)\kappa(1)^3 - \kappa(5)^2\kappa(3)\kappa(2)^3 \\
& + \kappa(5)^2\kappa(4)^3\kappa(1) + \kappa(5)^2\kappa(4)^3\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^3 - \kappa(5)^2\kappa(4)\kappa(2)^3 \\
& - \kappa(5)\kappa(3)^3\kappa(1)^2 - \kappa(5)\kappa(3)^3\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^3 + \kappa(5)\kappa(3)^2\kappa(2)^3 \\
& - \kappa(5)\kappa(4)^3\kappa(1)^2 - \kappa(5)\kappa(4)^3\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^3 + \kappa(5)\kappa(4)^2\kappa(2)^3 \\
& - \kappa(6)^3\kappa(3)^2\kappa(1) - \kappa(6)^3\kappa(3)^2\kappa(2) + \kappa(6)^3\kappa(3)\kappa(1)^2 + \kappa(6)^3\kappa(3)\kappa(2)^2 \\
& - \kappa(6)^3\kappa(4)^2\kappa(1) - \kappa(6)^3\kappa(4)^2\kappa(2) + \kappa(6)^3\kappa(4)\kappa(1)^2 + \kappa(6)^3\kappa(4)\kappa(2)^2 \\
& + \kappa(6)^2\kappa(3)^3\kappa(1) + \kappa(6)^2\kappa(3)^3\kappa(2) - \kappa(6)^2\kappa(3)\kappa(1)^3 - \kappa(6)^2\kappa(3)\kappa(2)^3 \\
& + \kappa(6)^2\kappa(4)^3\kappa(1) + \kappa(6)^2\kappa(4)^3\kappa(2) - \kappa(6)^2\kappa(4)\kappa(1)^3 - \kappa(6)^2\kappa(4)\kappa(2)^3 \\
& - \kappa(6)\kappa(3)^3\kappa(1)^2 - \kappa(6)\kappa(3)^3\kappa(2)^2 + \kappa(6)\kappa(3)^2\kappa(1)^3 + \kappa(6)\kappa(3)^2\kappa(2)^3 \\
& - \kappa(6)\kappa(4)^3\kappa(1)^2 - \kappa(6)\kappa(4)^3\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^3 + \kappa(6)\kappa(4)^2\kappa(2)^3) + 2X(\\
& -\kappa(3)^4\kappa(1)^2 - \kappa(3)^4\kappa(2)^2 + \kappa(3)^2\kappa(1)^4 + \kappa(3)^2\kappa(2)^4 - \kappa(4)^4\kappa(1)^2 - \kappa(4)^4\kappa(2)^2 \\
& + \kappa(4)^2\kappa(1)^4 + \kappa(4)^2\kappa(2)^4) + \left(\frac{1}{2}Y^2 + 2XT + \frac{3}{2}X^2Y + \frac{5}{24}X^4\right) (-\kappa(3)^7\kappa(1)^2 \\
& - \kappa(3)^7\kappa(2)^2 + \kappa(3)^2\kappa(1)^7 + \kappa(3)^2\kappa(2)^7 - \kappa(4)^7\kappa(1)^2 - \kappa(4)^7\kappa(2)^2 + \kappa(4)^2\kappa(1)^7 \\
& + \kappa(4)^2\kappa(2)^7) + \left(\frac{1}{2}Y^2 + \frac{3}{2}X^2Y + \frac{3}{8}X^4\right) (-\kappa(3)^6\kappa(1)^3 - \kappa(3)^6\kappa(2)^3 \\
& + \kappa(3)^3\kappa(1)^6 + \kappa(3)^3\kappa(2)^6 - \kappa(4)^6\kappa(1)^3 - \kappa(4)^6\kappa(2)^3 + \kappa(4)^3\kappa(1)^6 + \kappa(4)^3\kappa(2)^6) \\
& + \left(XT + X^2Y + \frac{5}{12}X^4 - Y^2\right) (\kappa(5)^2\kappa(4)^6\kappa(1) + \kappa(5)^2\kappa(4)^6\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^6 \\
& - \kappa(5)^2\kappa(4)\kappa(2)^6 - \kappa(5)\kappa(3)^6\kappa(1)^2 - \kappa(5)\kappa(3)^6\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^6 \\
& + \kappa(5)\kappa(3)^2\kappa(2)^6 - \kappa(5)\kappa(4)^6\kappa(1)^2 - \kappa(5)\kappa(4)^6\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^6 \\
& + \kappa(5)\kappa(4)^2\kappa(2)^6 - \kappa(6)^6\kappa(3)^2\kappa(1) - \kappa(6)^6\kappa(3)^2\kappa(2) + \kappa(6)^6\kappa(3)\kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{2} Y^2 + \frac{1}{2} X^2 Y - XT + \frac{5}{24} X^4 \right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 \\
& + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) \\
& + \kappa(2)^4 + \kappa(1)^4 + \left(XY + T + \frac{1}{6} X^3 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) \\
& + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6) + \left(Y \right. \\
& \left. + \frac{1}{2} X^2 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) + X (\kappa(1) + \kappa(2)) (\kappa(1)^4 \\
& - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) \Big)^2 - 3 \left(\kappa(3)^3 \kappa(1)^2 \right. \\
& \left. + \kappa(3)^3 \kappa(2)^2 - \kappa(3)^2 \kappa(1)^3 - \kappa(3)^2 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^2 + \kappa(4)^3 \kappa(2)^2 - \kappa(4)^2 \kappa(1)^3 \right. \\
& \left. - \kappa(4)^2 \kappa(2)^3 + \left(\frac{3}{2} Y^2 + \frac{1}{2} X^2 Y + \frac{1}{8} X^4 \right) (-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 \right. \\
& \left. + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6) + \left(\frac{1}{12} X^4 \right. \right. \\
& \left. \left. - XT - Y^2 - X^2 Y \right) (\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 \right. \\
& \left. - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 \right. \\
& \left. + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 \right. \\
& \left. + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 \right. \\
& \left. + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 \right)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{2} X^2 Y + XT + \frac{1}{24} X^4 - \frac{3}{2} Y^2 \right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 \\
& + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) \\
& + \left(\frac{1}{2} X^2 Y + \frac{1}{8} X^4 - \frac{1}{2} Y^2 \right) (-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 \\
& - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) + \left(XY + T + \frac{1}{6} X^3 \right) (\\
& -\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{3} X^3 - T \right) (-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) \\
& + \left(\frac{3}{2} Y^2 - \frac{1}{24} X^4 - XT + \frac{1}{2} X^2 Y \right) (-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 \\
& + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 \\
& + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(-\frac{1}{2} X^2 - Y\right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^2 - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(1) - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(1) - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(1) + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(1) + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^2 - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^2 - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^2 \kappa(1) - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(1) - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(1) + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^2 \kappa(4)^4 \kappa(1) + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^2 - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + 2Y (-\kappa(3)^4 \kappa(1)^3 \\
& - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{2} X^2 - Y\right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 \\
& + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(XY \right. \\
& \left. - \frac{1}{6} X^3 - T\right) (-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1) + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1)^8 + \kappa(2)^8) - X (\\
& - \kappa(5)^3 \kappa(3)^2 \kappa(1) - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1) - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(1) + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1) + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 \\
& - \kappa(5) \kappa(3)^3 \kappa(1)^2 - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5) \kappa(4)^3 \kappa(1)^2 - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1) - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1) - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1) + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1) + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 \\
& - \kappa(6) \kappa(3)^3 \kappa(1)^2 - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 + \kappa(6) \kappa(3)^2 \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^3\kappa(1)^2 - \kappa(6)\kappa(4)^3\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^3 + \kappa(6)\kappa(4)^2\kappa(2)^3) + \kappa(2)^4 \\
& + \kappa(1)^4 - 2XY(-\kappa(5)^5\kappa(4)^2\kappa(2) + \kappa(5)^5\kappa(4)\kappa(1)^2 + \kappa(5)^5\kappa(4)\kappa(2)^2 \\
& + \kappa(5)^2\kappa(3)^5\kappa(1) + \kappa(5)^2\kappa(3)^5\kappa(2) - \kappa(5)^2\kappa(3)\kappa(1)^5 - \kappa(5)^2\kappa(3)\kappa(2)^5 \\
& + \kappa(5)^2\kappa(4)^5\kappa(1) + \kappa(5)^2\kappa(4)^5\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^5 - \kappa(5)^2\kappa(4)\kappa(2)^5 \\
& - \kappa(5)\kappa(3)^5\kappa(1)^2 - \kappa(5)\kappa(3)^5\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^5 + \kappa(5)\kappa(3)^2\kappa(2)^5 \\
& - \kappa(5)\kappa(4)^5\kappa(1)^2 - \kappa(5)\kappa(4)^5\kappa(2)^2 + \kappa(5)\kappa(4)^2\kappa(1)^5 + \kappa(5)\kappa(4)^2\kappa(2)^5 \\
& - \kappa(6)^5\kappa(3)^2\kappa(1) - \kappa(6)^5\kappa(3)^2\kappa(2) + \kappa(6)^5\kappa(3)\kappa(1)^2 + \kappa(6)^5\kappa(3)\kappa(2)^2 \\
& - \kappa(6)^5\kappa(4)^2\kappa(1) - \kappa(6)^5\kappa(4)^2\kappa(2) + \kappa(6)^5\kappa(4)\kappa(1)^2 + \kappa(6)^5\kappa(4)\kappa(2)^2 \\
& + \kappa(6)^2\kappa(3)^5\kappa(1) + \kappa(6)^2\kappa(3)^5\kappa(2) - \kappa(6)^2\kappa(3)\kappa(1)^5 - \kappa(6)^2\kappa(3)\kappa(2)^5 \\
& + \kappa(6)^2\kappa(4)^5\kappa(1) + \kappa(6)^2\kappa(4)^5\kappa(2) - \kappa(6)^2\kappa(4)\kappa(1)^5 - \kappa(6)^2\kappa(4)\kappa(2)^5 \\
& - \kappa(6)\kappa(3)^5\kappa(1)^2 - \kappa(6)\kappa(3)^5\kappa(2)^2 + \kappa(6)\kappa(3)^2\kappa(1)^5 + \kappa(6)\kappa(3)^2\kappa(2)^5 \\
& - \kappa(6)\kappa(4)^5\kappa(1)^2 - \kappa(6)\kappa(4)^5\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^5 + \kappa(6)\kappa(4)^2\kappa(2)^5 \\
& - \kappa(5)^5\kappa(3)^2\kappa(1) - \kappa(5)^5\kappa(3)^2\kappa(2) + \kappa(5)^5\kappa(3)\kappa(1)^2 + \kappa(5)^5\kappa(3)\kappa(2)^2 \\
& - \kappa(5)^5\kappa(4)^2\kappa(1)) + \left(XY + T + \frac{1}{6}X^3\right)(\kappa(1) + \kappa(2))(\kappa(1)^6 - \kappa(1)^5\kappa(2) \\
& + \kappa(1)^4\kappa(2)^2 - \kappa(1)^3\kappa(2)^3 + \kappa(1)^2\kappa(2)^4 - \kappa(1)\kappa(2)^5 + \kappa(2)^6) + \left(Y \right. \\
& \left. + \frac{1}{2}X^2\right)(\kappa(1)^2 + \kappa(2)^2)(\kappa(1)^4 - \kappa(1)^2\kappa(2)^2 + \kappa(2)^4) + X(\kappa(1) + \kappa(2))(\kappa(1)^4 \\
& - \kappa(1)^3\kappa(2) + \kappa(1)^2\kappa(2)^2 - \kappa(1)\kappa(2)^3 + \kappa(2)^4))^2 + 3\left(-2\kappa(3)^4\kappa(1)^3 \right. \\
& - 2\kappa(3)^4\kappa(2)^3 + 2\kappa(3)^3\kappa(1)^4 + 2\kappa(3)^3\kappa(2)^4 - 2\kappa(4)^4\kappa(1)^3 - 2\kappa(4)^4\kappa(2)^3 \\
& + 2\kappa(4)^3\kappa(1)^4 + 2\kappa(4)^3\kappa(2)^4 + \kappa(3)^5\kappa(1)^2 + \kappa(3)^5\kappa(2)^2 - \kappa(3)^2\kappa(1)^5 \\
& - \kappa(3)^2\kappa(2)^5 + \kappa(4)^5\kappa(1)^2 + \kappa(4)^5\kappa(2)^2 - \kappa(4)^2\kappa(1)^5 - \kappa(4)^2\kappa(2)^5 \\
& - \kappa(5)\kappa(3)^2\kappa(2)^4 + \kappa(5)\kappa(4)^4\kappa(1)^2 + \kappa(5)\kappa(4)^4\kappa(2)^2 - \kappa(5)\kappa(4)^2\kappa(1)^4 \\
& \left. - \kappa(5)\kappa(4)^2\kappa(2)^4 + \kappa(6)^4\kappa(3)^2\kappa(1) + \kappa(6)^4\kappa(3)^2\kappa(2) - \kappa(6)^4\kappa(3)\kappa(1)^2 \right)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^4 \kappa(3) \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1) + \kappa(6)^4 \kappa(4)^2 \kappa(2) - \kappa(6)^4 \kappa(4) \kappa(1)^2 \\
& -\kappa(6)^4 \kappa(4) \kappa(2)^2 - \kappa(6)^2 \kappa(3)^4 \kappa(1) - \kappa(6)^2 \kappa(3)^4 \kappa(2) + \kappa(6)^2 \kappa(3) \kappa(1)^4 \\
& + \kappa(6)^2 \kappa(3) \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1) - \kappa(6)^2 \kappa(4)^4 \kappa(2) + \kappa(6)^2 \kappa(4) \kappa(1)^4 \\
& + \kappa(6)^2 \kappa(4) \kappa(2)^4 + \kappa(6) \kappa(3)^4 \kappa(1)^2 + \kappa(6) \kappa(3)^4 \kappa(2)^2 - \kappa(6) \kappa(3)^2 \kappa(1)^4 \\
& - \kappa(6) \kappa(3)^2 \kappa(2)^4 + \kappa(6) \kappa(4)^4 \kappa(1)^2 + \kappa(6) \kappa(4)^4 \kappa(2)^2 - \kappa(6) \kappa(4)^2 \kappa(1)^4 \\
& - \kappa(6) \kappa(4)^2 \kappa(2)^4 + \kappa(5)^4 \kappa(3)^2 \kappa(1) + \kappa(5)^4 \kappa(3)^2 \kappa(2) - \kappa(5)^4 \kappa(3) \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(3) \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1) + \kappa(5)^4 \kappa(4)^2 \kappa(2) - \kappa(5)^4 \kappa(4) \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(4) \kappa(2)^2 - \kappa(5)^2 \kappa(3)^4 \kappa(1) - \kappa(5)^2 \kappa(3)^4 \kappa(2) + \kappa(5)^2 \kappa(3) \kappa(1)^4 \\
& + \kappa(5)^2 \kappa(3) \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1) - \kappa(5)^2 \kappa(4)^4 \kappa(2) + \kappa(5)^2 \kappa(4) \kappa(1)^4 \\
& + \kappa(5)^2 \kappa(4) \kappa(2)^4 + \kappa(5) \kappa(3)^4 \kappa(1)^2 + \kappa(5) \kappa(3)^4 \kappa(2)^2 - \kappa(5) \kappa(3)^2 \kappa(1)^4 + \left(\frac{1}{2} X^2 \right. \\
& \left. - Y \right) \left(-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 \right. \\
& \left. - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7 \right) + \left(3Y + \frac{1}{2} X^2 \right) \left(-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 \right. \\
& + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 \\
& + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(3Y + \frac{1}{2}X^2\right) (\\
& - \kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6) + (-X^2 - 2Y) (\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) \\
& - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 \\
& + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 \\
& + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) \\
& + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) \\
& + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) \\
& - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) \\
& - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 \\
& + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 \\
& + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) \\
& + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) \\
& + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) \\
& - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{2}X^2 - 3Y\right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 \\
& + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) \\
& + X(-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1) \Big) - 2X \Big(\\
& -\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1) \Big) + \left(Y \right. \\
& \left. + \frac{1}{2} X^2 \right) \left(\kappa(1)^8 + \kappa(2)^8 \right) + X \left(-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 \right. \\
& \left. + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5 \right) + \left(\kappa(1)^2 \right. \\
& \left. + \kappa(2)^2 \right) \left(\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4 \right) + X \left(\kappa(1) + \kappa(2) \right) \left(\kappa(1)^6 - \kappa(1)^5 \kappa(2) \right. \\
& \left. + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6 \right) \left(\left(\frac{1}{2} T^2 + \frac{1}{6} Y^3 \right) \right)
\end{aligned}$$

$$\begin{aligned}
& +XYT + \frac{1}{4} X^2 Y^2 + \frac{1}{6} X^3 T + \frac{1}{24} X^4 Y + \frac{1}{720} X^6 \Big) (\kappa(1)^8 + \kappa(2)^8) + \left(\frac{1}{4} X^2 Y^2 \right. \\
& + \frac{1}{3} X^3 T + \frac{1}{8} X^4 Y + \frac{1}{144} X^6 - \frac{1}{2} T^2 - \frac{1}{6} Y^3 \Big) (-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) \\
& + \left(\frac{1}{2} Y^3 + \frac{1}{4} X^2 Y^2 + \frac{1}{8} X^4 Y + \frac{1}{80} X^6 \right) (-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 \\
& + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6) + \left(\frac{1}{6} X^3 T \right. \\
& + \frac{1}{12} X^4 Y + \frac{1}{72} X^6 - XYT - \frac{1}{3} Y^3 - \frac{1}{2} X^2 Y^2 + \frac{1}{2} T^2 \Big) (\kappa(5)^2 \kappa(4)^6 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{4} X^2 Y^2 + XYT \right. \\
& + \frac{1}{24} X^4 Y + T^2 - \frac{1}{6} X^3 T + \frac{1}{144} X^6 - \frac{1}{2} Y^3 \Big) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 \\
& + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) \\
& + \left(-\frac{1}{3} X^3 T + \frac{1}{45} X^6 - T^2 \right) (-\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 \\
& + \kappa(5)^5 \kappa(3) \kappa(2)^3 - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^5 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 \\
& - \kappa(5)^3 \kappa(3) \kappa(2)^5 + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 \\
& - \kappa(5)^3 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 \\
& + \kappa(5) \kappa(3)^3 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 \\
& + \kappa(5) \kappa(4)^3 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 \\
& + \kappa(6)^5 \kappa(3) \kappa(2)^3 - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 \\
& + \kappa(6)^5 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 \\
& - \kappa(6)^3 \kappa(3) \kappa(2)^5 + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 \\
& - \kappa(6)^3 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 \\
& + \kappa(6) \kappa(3)^3 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 \\
& + \kappa(6) \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{2} Y^3 - \frac{1}{24} X^4 Y - XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{144} X^6 - \frac{1}{6} X^3 T \right. \\
& \left. + T^2 \right) \left(-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 \right. \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)^2 \kappa(4)^4 \kappa(1)^3 - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) + \left(Y T + \frac{1}{2} X Y^2 + \frac{1}{2} X^2 T + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) (\kappa(1) \\
& + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 \\
& + \kappa(2)^6) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y + \frac{1}{30} X^5 - Y T \right) (-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 \\
& + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) \\
& + \left(\frac{1}{2} X Y^2 + \frac{1}{6} X^3 Y + Y T - \frac{1}{2} X^2 T + \frac{1}{24} X^5 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 \\
& + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) \\
& + \left(\frac{1}{20} X^5 - X Y^2 \right) (-\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^5 \kappa(4)^2 \kappa(1)) + \left(\frac{1}{2} X Y^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y - Y T \right) (\\
& -\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)
\end{aligned}$$

$$\begin{aligned}
& + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) \\
& - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1) \\
& + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y + \frac{1}{24} X^4 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) \\
& + \left(\frac{1}{2} X^2 Y + \frac{1}{8} X^4 - \frac{1}{2} Y^2 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 \\
& - \kappa(4)^5 \kappa(1)^2 - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(Y^2 + \frac{1}{12} X^4 - XT \right) (\\
& -\kappa(3)^4 \kappa(1)^3 - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^4 + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{8} X^4 - \frac{1}{2} Y^2 - \frac{1}{2} X^2 Y \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(5) \kappa(4)^4 \kappa(1)^2 - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(1) - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(1) - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(1) + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(1) + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(6) \kappa(3)^4 \kappa(1)^2 - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 \\
& - \kappa(6) \kappa(4)^4 \kappa(1)^2 - \kappa(6) \kappa(4)^4 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^4 + \kappa(6) \kappa(4)^2 \kappa(2)^4
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)^4 \kappa(3)^2 \kappa(1) - \kappa(5)^4 \kappa(3)^2 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^2 + \kappa(5)^4 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^4 \kappa(4)^2 \kappa(1) - \kappa(5)^4 \kappa(4)^2 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^2 + \kappa(5)^4 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^4 \kappa(1) + \kappa(5)^2 \kappa(3)^4 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^4 - \kappa(5)^2 \kappa(3) \kappa(2)^4 \\
& + \kappa(5)^2 \kappa(4)^4 \kappa(1) + \kappa(5)^2 \kappa(4)^4 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^4 - \kappa(5)^2 \kappa(4) \kappa(2)^4 \\
& - \kappa(5) \kappa(3)^4 \kappa(1)^2 - \kappa(5) \kappa(3)^4 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^4) + \left(XY + T + \frac{1}{6} X^3 \right) (\kappa(1) \\
& + \kappa(2)) (\kappa(1)^4 - \kappa(1)^3 \kappa(2) + \kappa(1)^2 \kappa(2)^2 - \kappa(1) \kappa(2)^3 + \kappa(2)^4) + \left(\frac{1}{3} X^3 - T \right) (\\
& -\kappa(3)^4 \kappa(1)^2 - \kappa(3)^4 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^4 + \kappa(3)^2 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^2 - \kappa(4)^4 \kappa(2)^2 \\
& + \kappa(4)^2 \kappa(1)^4 + \kappa(4)^2 \kappa(2)^4) + \left(\frac{1}{6} X^3 - XY + T \right) (-\kappa(5)^3 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^3 \kappa(3)^2 \kappa(2) + \kappa(5)^3 \kappa(3) \kappa(1)^2 + \kappa(5)^3 \kappa(3) \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1) \\
& - \kappa(5)^3 \kappa(4)^2 \kappa(2) + \kappa(5)^3 \kappa(4) \kappa(1)^2 + \kappa(5)^3 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^3 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^3 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^3 - \kappa(5)^2 \kappa(3) \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^3 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^3 - \kappa(5)^2 \kappa(4) \kappa(2)^3 - \kappa(5) \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^3 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^3 + \kappa(5) \kappa(3)^2 \kappa(2)^3 - \kappa(5) \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^3 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^3 + \kappa(5) \kappa(4)^2 \kappa(2)^3 - \kappa(6)^3 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^3 \kappa(3)^2 \kappa(2) + \kappa(6)^3 \kappa(3) \kappa(1)^2 + \kappa(6)^3 \kappa(3) \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^3 \kappa(4)^2 \kappa(2) + \kappa(6)^3 \kappa(4) \kappa(1)^2 + \kappa(6)^3 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^3 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^3 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^3 - \kappa(6)^2 \kappa(3) \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^3 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^3 - \kappa(6)^2 \kappa(4) \kappa(2)^3 - \kappa(6) \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^3 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^3 + \kappa(6) \kappa(3)^2 \kappa(2)^3 - \kappa(6) \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^3 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^3 + \kappa(6) \kappa(4)^2 \kappa(2)^3) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1)^4 \\
& + \kappa(2)^4) + \left(\frac{1}{2} X^2 - Y \right) (-\kappa(3)^3 \kappa(1)^2 - \kappa(3)^3 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^3 + \kappa(3)^2 \kappa(2)^3 \\
& - \kappa(4)^3 \kappa(1)^2 - \kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3) + X(\kappa(1) + \kappa(2)) (\kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& -\kappa(1)\kappa(2) + \kappa(2)^2) \Big) + \left(\left(\frac{1}{2} T^2 + \frac{1}{6} Y^3 + XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{6} X^3 T + \frac{1}{24} X^4 Y \right. \right. \\
& + \left. \frac{1}{720} X^6 \right) (\kappa(1)^8 + \kappa(2)^8) + \left(\frac{1}{4} X^2 Y^2 + \frac{1}{3} X^3 T + \frac{1}{8} X^4 Y + \frac{1}{144} X^6 - \frac{1}{2} T^2 \right. \\
& - \left. \frac{1}{6} Y^3 \right) (-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 \\
& - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) + \left(\frac{1}{2} Y^3 + \frac{1}{4} X^2 Y^2 + \frac{1}{8} X^4 Y \right. \\
& + \left. \frac{1}{80} X^6 \right) (-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^3 \\
& - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6) + \left(\frac{1}{6} X^3 T + \frac{1}{12} X^4 Y + \frac{1}{72} X^6 - XY T \right. \\
& - \left. \frac{1}{3} Y^3 - \frac{1}{2} X^2 Y^2 + \frac{1}{2} T^2 \right) (\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^6 - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^6 - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^6 - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(3) \kappa(2)^2 - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^6 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^6 + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^6 - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^6 - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^6 - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(3) \kappa(2)^2 - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 \\
& + \kappa(5)^6 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(\frac{1}{4} X^2 Y^2 + XY T + \frac{1}{24} X^4 Y + T^2 - \frac{1}{6} X^3 T + \frac{1}{144} X^6 \right. \\
& - \left. \frac{1}{2} Y^3 \right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 \\
& - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) + \left(-\frac{1}{3} X^3 T + \frac{1}{45} X^6 - T^2 \right) (\\
& -\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5) \\
& + \left(\frac{1}{2} Y^3 - \frac{1}{24} X^4 Y - XY T + \frac{1}{4} X^2 Y^2 + \frac{1}{144} X^6 - \frac{1}{6} X^3 T + T^2 \right) (\\
& -\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3
\end{aligned}$$

$$\begin{aligned}
& -\kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) \\
& + \left(Y T + \frac{1}{2} X Y^2 + \frac{1}{2} X^2 T + \frac{1}{6} X^3 Y + \frac{1}{120} X^5 \right) (\kappa(1) + \kappa(2)) (\kappa(1)^6 - \kappa(1)^5 \kappa(2) \\
& + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6) + \left(\frac{1}{2} X^2 T + \frac{1}{3} X^3 Y \right. \\
& \left. + \frac{1}{30} X^5 - Y T \right) (-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 + \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) + \left(\frac{1}{2} X Y^2 + \frac{1}{6} X^3 Y + Y T \right. \\
& \left. - \frac{1}{2} X^2 T + \frac{1}{24} X^5 \right) (-\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + \left(\frac{1}{20} X^5 - X Y^2 \right) (\\
& -\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) \\
& - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1)) \\
& + \left(\frac{1}{2} X Y^2 + \frac{1}{24} X^5 - \frac{1}{2} X^2 T - \frac{1}{6} X^3 Y - Y T \right) (-\kappa(6)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(4) \kappa(1)^3 + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2)
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)^3 \kappa(3) \kappa(1)^4 - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(6)^3 \kappa(4) \kappa(1)^4 - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(3)^3 \kappa(1)^4 + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(6) \kappa(4)^3 \kappa(1)^4 + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(3) \kappa(1)^3 + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) \\
& + \kappa(5)^4 \kappa(4) \kappa(1)^3 + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(3) \kappa(1)^4 - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) \\
& - \kappa(5)^3 \kappa(4) \kappa(1)^4 - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(3)^3 \kappa(1)^4 + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 \\
& + \kappa(5) \kappa(4)^3 \kappa(1)^4 + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) \\
& + \kappa(6)^4 \kappa(3) \kappa(1)^3 + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)) + \left(\frac{1}{2} Y^2 + XT + \frac{1}{2} X^2 Y \right. \\
& \left. + \frac{1}{24} X^4 \right) (\kappa(1)^2 + \kappa(2)^2) (\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4) + \left(\frac{1}{2} X^2 Y + \frac{1}{8} X^4 \right. \\
& \left. - \frac{1}{2} Y^2 \right) (-\kappa(3)^5 \kappa(1)^2 - \kappa(3)^5 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^5 + \kappa(3)^2 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^2 \\
& - \kappa(4)^5 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^5 + \kappa(4)^2 \kappa(2)^5) + \left(Y^2 + \frac{1}{12} X^4 - XT \right) (-\kappa(3)^4 \kappa(1)^3 \\
& - \kappa(3)^4 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^4 + \kappa(3)^3 \kappa(2)^4 - \kappa(4)^4 \kappa(1)^3 - \kappa(4)^4 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(4)^3 \kappa(2)^4) + \left(\frac{1}{8} X^4 - \frac{1}{2} Y^2 - \frac{1}{2} X^2 Y \right) (\kappa(5) \kappa(3)^2 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^2 \\
& - \kappa(5) \kappa(4)^4 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^4 + \kappa(5) \kappa(4)^2 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(3)^2 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^2 + \kappa(6)^4 \kappa(3) \kappa(2)^2 - \kappa(6)^4 \kappa(4)^2 \kappa(1) \\
& - \kappa(6)^4 \kappa(4)^2 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^2 + \kappa(6)^4 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(3)^4 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^4 - \kappa(6)^2 \kappa(3) \kappa(2)^4 + \kappa(6)^2 \kappa(4)^4 \kappa(1) \\
& + \kappa(6)^2 \kappa(4)^4 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^4 - \kappa(6)^2 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^2 \\
& - \kappa(6) \kappa(3)^4 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^4 + \kappa(6) \kappa(3)^2 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& -\kappa(6)\kappa(4)^4\kappa(2)^2 + \kappa(6)\kappa(4)^2\kappa(1)^4 + \kappa(6)\kappa(4)^2\kappa(2)^4 - \kappa(5)^4\kappa(3)^2\kappa(1) \\
& - \kappa(5)^4\kappa(3)^2\kappa(2) + \kappa(5)^4\kappa(3)\kappa(1)^2 + \kappa(5)^4\kappa(3)\kappa(2)^2 - \kappa(5)^4\kappa(4)^2\kappa(1) \\
& - \kappa(5)^4\kappa(4)^2\kappa(2) + \kappa(5)^4\kappa(4)\kappa(1)^2 + \kappa(5)^4\kappa(4)\kappa(2)^2 + \kappa(5)^2\kappa(3)^4\kappa(1) \\
& + \kappa(5)^2\kappa(3)^4\kappa(2) - \kappa(5)^2\kappa(3)\kappa(1)^4 - \kappa(5)^2\kappa(3)\kappa(2)^4 + \kappa(5)^2\kappa(4)^4\kappa(1) \\
& + \kappa(5)^2\kappa(4)^4\kappa(2) - \kappa(5)^2\kappa(4)\kappa(1)^4 - \kappa(5)^2\kappa(4)\kappa(2)^4 - \kappa(5)\kappa(3)^4\kappa(1)^2 \\
& - \kappa(5)\kappa(3)^4\kappa(2)^2 + \kappa(5)\kappa(3)^2\kappa(1)^4) + \left(XY + T + \frac{1}{6}X^3\right) (\kappa(1) + \kappa(2)) (\kappa(1)^4 \\
& - \kappa(1)^3\kappa(2) + \kappa(1)^2\kappa(2)^2 - \kappa(1)\kappa(2)^3 + \kappa(2)^4) + \left(\frac{1}{3}X^3 - T\right) (-\kappa(3)^4\kappa(1)^2 \\
& - \kappa(3)^4\kappa(2)^2 + \kappa(3)^2\kappa(1)^4 + \kappa(3)^2\kappa(2)^4 - \kappa(4)^4\kappa(1)^2 - \kappa(4)^4\kappa(2)^2 + \kappa(4)^2\kappa(1)^4 \\
& + \kappa(4)^2\kappa(2)^4) + \left(\frac{1}{6}X^3 - XY + T\right) (-\kappa(5)^3\kappa(3)^2\kappa(1) - \kappa(5)^3\kappa(3)^2\kappa(2) \\
& + \kappa(5)^3\kappa(3)\kappa(1)^2 + \kappa(5)^3\kappa(3)\kappa(2)^2 - \kappa(5)^3\kappa(4)^2\kappa(1) - \kappa(5)^3\kappa(4)^2\kappa(2) \\
& + \kappa(5)^3\kappa(4)\kappa(1)^2 + \kappa(5)^3\kappa(4)\kappa(2)^2 + \kappa(5)^2\kappa(3)^3\kappa(1) + \kappa(5)^2\kappa(3)^3\kappa(2) \\
& - \kappa(5)^2\kappa(3)\kappa(1)^3 - \kappa(5)^2\kappa(3)\kappa(2)^3 + \kappa(5)^2\kappa(4)^3\kappa(1) + \kappa(5)^2\kappa(4)^3\kappa(2) \\
& - \kappa(5)^2\kappa(4)\kappa(1)^3 - \kappa(5)^2\kappa(4)\kappa(2)^3 - \kappa(5)\kappa(3)^3\kappa(1)^2 - \kappa(5)\kappa(3)^3\kappa(2)^2 \\
& + \kappa(5)\kappa(3)^2\kappa(1)^3 + \kappa(5)\kappa(3)^2\kappa(2)^3 - \kappa(5)\kappa(4)^3\kappa(1)^2 - \kappa(5)\kappa(4)^3\kappa(2)^2 \\
& + \kappa(5)\kappa(4)^2\kappa(1)^3 + \kappa(5)\kappa(4)^2\kappa(2)^3 - \kappa(6)^3\kappa(3)^2\kappa(1) - \kappa(6)^3\kappa(3)^2\kappa(2) \\
& + \kappa(6)^3\kappa(3)\kappa(1)^2 + \kappa(6)^3\kappa(3)\kappa(2)^2 - \kappa(6)^3\kappa(4)^2\kappa(1) - \kappa(6)^3\kappa(4)^2\kappa(2) \\
& + \kappa(6)^3\kappa(4)\kappa(1)^2 + \kappa(6)^3\kappa(4)\kappa(2)^2 + \kappa(6)^2\kappa(3)^3\kappa(1) + \kappa(6)^2\kappa(3)^3\kappa(2) \\
& - \kappa(6)^2\kappa(3)\kappa(1)^3 - \kappa(6)^2\kappa(3)\kappa(2)^3 + \kappa(6)^2\kappa(4)^3\kappa(1) + \kappa(6)^2\kappa(4)^3\kappa(2) \\
& - \kappa(6)^2\kappa(4)\kappa(1)^3 - \kappa(6)^2\kappa(4)\kappa(2)^3 - \kappa(6)\kappa(3)^3\kappa(1)^2 - \kappa(6)\kappa(3)^3\kappa(2)^2 \\
& + \kappa(6)\kappa(3)^2\kappa(1)^3 + \kappa(6)\kappa(3)^2\kappa(2)^3 - \kappa(6)\kappa(4)^3\kappa(1)^2 - \kappa(6)\kappa(4)^3\kappa(2)^2 \\
& + \kappa(6)\kappa(4)^2\kappa(1)^3 + \kappa(6)\kappa(4)^2\kappa(2)^3) + \left(Y + \frac{1}{2}X^2\right) (\kappa(1)^4 + \kappa(2)^4) + \left(\frac{1}{2}X^2 \right. \\
& \left. - Y\right) (-\kappa(3)^3\kappa(1)^2 - \kappa(3)^3\kappa(2)^2 + \kappa(3)^2\kappa(1)^3 + \kappa(3)^2\kappa(2)^3 - \kappa(4)^3\kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& -\kappa(4)^3 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^3 + \kappa(4)^2 \kappa(2)^3) + X(\kappa(1) + \kappa(2)) (\kappa(1)^2 - \kappa(1) \kappa(2) \\
& + \kappa(2)^2) \left(-2 \kappa(3)^4 \kappa(1)^3 - 2 \kappa(3)^4 \kappa(2)^3 + 2 \kappa(3)^3 \kappa(1)^4 + 2 \kappa(3)^3 \kappa(2)^4 \right. \\
& - 2 \kappa(4)^4 \kappa(1)^3 - 2 \kappa(4)^4 \kappa(2)^3 + 2 \kappa(4)^3 \kappa(1)^4 + 2 \kappa(4)^3 \kappa(2)^4 - 3 \kappa(3)^5 \kappa(1)^2 \\
& - 3 \kappa(3)^5 \kappa(2)^2 + 3 \kappa(3)^2 \kappa(1)^5 + 3 \kappa(3)^2 \kappa(2)^5 - 3 \kappa(4)^5 \kappa(1)^2 - 3 \kappa(4)^5 \kappa(2)^2 \\
& + 3 \kappa(4)^2 \kappa(1)^5 + 3 \kappa(4)^2 \kappa(2)^5 + 3 \kappa(5) \kappa(3)^2 \kappa(2)^4 - 3 \kappa(5) \kappa(4)^4 \kappa(1)^2 \\
& - 3 \kappa(5) \kappa(4)^4 \kappa(2)^2 + 3 \kappa(5) \kappa(4)^2 \kappa(1)^4 + 3 \kappa(5) \kappa(4)^2 \kappa(2)^4 - 3 \kappa(6)^4 \kappa(3)^2 \kappa(1) \\
& - 3 \kappa(6)^4 \kappa(3)^2 \kappa(2) + 3 \kappa(6)^4 \kappa(3) \kappa(1)^2 + 3 \kappa(6)^4 \kappa(3) \kappa(2)^2 - 3 \kappa(6)^4 \kappa(4)^2 \kappa(1) \\
& - 3 \kappa(6)^4 \kappa(4)^2 \kappa(2) + 3 \kappa(6)^4 \kappa(4) \kappa(1)^2 + 3 \kappa(6)^4 \kappa(4) \kappa(2)^2 + 3 \kappa(6)^2 \kappa(3)^4 \kappa(1) \\
& + 3 \kappa(6)^2 \kappa(3)^4 \kappa(2) - 3 \kappa(6)^2 \kappa(3) \kappa(1)^4 - 3 \kappa(6)^2 \kappa(3) \kappa(2)^4 + 3 \kappa(6)^2 \kappa(4)^4 \kappa(1) \\
& + 3 \kappa(6)^2 \kappa(4)^4 \kappa(2) - 3 \kappa(6)^2 \kappa(4) \kappa(1)^4 - 3 \kappa(6)^2 \kappa(4) \kappa(2)^4 - 3 \kappa(6) \kappa(3)^4 \kappa(1)^2 \\
& - 3 \kappa(6) \kappa(3)^4 \kappa(2)^2 + 3 \kappa(6) \kappa(3)^2 \kappa(1)^4 + 3 \kappa(6) \kappa(3)^2 \kappa(2)^4 - 3 \kappa(6) \kappa(4)^4 \kappa(1)^2 \\
& - 3 \kappa(6) \kappa(4)^4 \kappa(2)^2 + 3 \kappa(6) \kappa(4)^2 \kappa(1)^4 + 3 \kappa(6) \kappa(4)^2 \kappa(2)^4 - 3 \kappa(5)^4 \kappa(3)^2 \kappa(1) \\
& - 3 \kappa(5)^4 \kappa(3)^2 \kappa(2) + 3 \kappa(5)^4 \kappa(3) \kappa(1)^2 + 3 \kappa(5)^4 \kappa(3) \kappa(2)^2 - 3 \kappa(5)^4 \kappa(4)^2 \kappa(1) \\
& - 3 \kappa(5)^4 \kappa(4)^2 \kappa(2) + 3 \kappa(5)^4 \kappa(4) \kappa(1)^2 + 3 \kappa(5)^4 \kappa(4) \kappa(2)^2 + 3 \kappa(5)^2 \kappa(3)^4 \kappa(1) \\
& + 3 \kappa(5)^2 \kappa(3)^4 \kappa(2) - 3 \kappa(5)^2 \kappa(3) \kappa(1)^4 - 3 \kappa(5)^2 \kappa(3) \kappa(2)^4 + 3 \kappa(5)^2 \kappa(4)^4 \kappa(1) \\
& + 3 \kappa(5)^2 \kappa(4)^4 \kappa(2) - 3 \kappa(5)^2 \kappa(4) \kappa(1)^4 - 3 \kappa(5)^2 \kappa(4) \kappa(2)^4 - 3 \kappa(5) \kappa(3)^4 \kappa(1)^2 \\
& - 3 \kappa(5) \kappa(3)^4 \kappa(2)^2 + 3 \kappa(5) \kappa(3)^2 \kappa(1)^4 + 5X(-\kappa(6)^4 \kappa(4)^3 \kappa(2) + \kappa(6)^4 \kappa(4) \kappa(1)^3 \\
& + \kappa(6)^4 \kappa(4) \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1) + \kappa(6)^3 \kappa(3)^4 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^4 \\
& - \kappa(6)^3 \kappa(3) \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1) + \kappa(6)^3 \kappa(4)^4 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^4 \\
& - \kappa(6)^3 \kappa(4) \kappa(2)^4 - \kappa(6) \kappa(3)^4 \kappa(1)^3 - \kappa(6) \kappa(3)^4 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^4 \\
& + \kappa(6) \kappa(3)^3 \kappa(2)^4 - \kappa(6) \kappa(4)^4 \kappa(1)^3 - \kappa(6) \kappa(4)^4 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(6) \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1) - \kappa(5)^4 \kappa(3)^3 \kappa(2) + \kappa(5)^4 \kappa(3) \kappa(1)^3
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^4 \kappa(3) \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1) - \kappa(5)^4 \kappa(4)^3 \kappa(2) + \kappa(5)^4 \kappa(4) \kappa(1)^3 \\
& + \kappa(5)^4 \kappa(4) \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1) + \kappa(5)^3 \kappa(3)^4 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^4 \\
& - \kappa(5)^3 \kappa(3) \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1) + \kappa(5)^3 \kappa(4)^4 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^4 \\
& - \kappa(5)^3 \kappa(4) \kappa(2)^4 - \kappa(5) \kappa(3)^4 \kappa(1)^3 - \kappa(5) \kappa(3)^4 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^4 \\
& + \kappa(5) \kappa(3)^3 \kappa(2)^4 - \kappa(5) \kappa(4)^4 \kappa(1)^3 - \kappa(5) \kappa(4)^4 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^4 \\
& + \kappa(5) \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1) - \kappa(6)^4 \kappa(3)^3 \kappa(2) + \kappa(6)^4 \kappa(3) \kappa(1)^3 \\
& + \kappa(6)^4 \kappa(3) \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)) + 6X \left(-\kappa(5)^5 \kappa(4)^2 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^2 \right. \\
& + \kappa(5)^5 \kappa(4) \kappa(2)^2 + \kappa(5)^2 \kappa(3)^5 \kappa(1) + \kappa(5)^2 \kappa(3)^5 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^5 \\
& - \kappa(5)^2 \kappa(3) \kappa(2)^5 + \kappa(5)^2 \kappa(4)^5 \kappa(1) + \kappa(5)^2 \kappa(4)^5 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^5 \\
& - \kappa(5)^2 \kappa(4) \kappa(2)^5 - \kappa(5) \kappa(3)^5 \kappa(1)^2 - \kappa(5) \kappa(3)^5 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^5 \\
& + \kappa(5) \kappa(3)^2 \kappa(2)^5 - \kappa(5) \kappa(4)^5 \kappa(1)^2 - \kappa(5) \kappa(4)^5 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^5 \\
& + \kappa(5) \kappa(4)^2 \kappa(2)^5 - \kappa(6)^5 \kappa(3)^2 \kappa(1) - \kappa(6)^5 \kappa(3)^2 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^2 \\
& + \kappa(6)^5 \kappa(3) \kappa(2)^2 - \kappa(6)^5 \kappa(4)^2 \kappa(1) - \kappa(6)^5 \kappa(4)^2 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^2 \\
& + \kappa(6)^5 \kappa(4) \kappa(2)^2 + \kappa(6)^2 \kappa(3)^5 \kappa(1) + \kappa(6)^2 \kappa(3)^5 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^5 \\
& - \kappa(6)^2 \kappa(3) \kappa(2)^5 + \kappa(6)^2 \kappa(4)^5 \kappa(1) + \kappa(6)^2 \kappa(4)^5 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^5 \\
& - \kappa(6)^2 \kappa(4) \kappa(2)^5 - \kappa(6) \kappa(3)^5 \kappa(1)^2 - \kappa(6) \kappa(3)^5 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^5 \\
& + \kappa(6) \kappa(3)^2 \kappa(2)^5 - \kappa(6) \kappa(4)^5 \kappa(1)^2 - \kappa(6) \kappa(4)^5 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^5 \\
& + \kappa(6) \kappa(4)^2 \kappa(2)^5 - \kappa(5)^5 \kappa(3)^2 \kappa(1) - \kappa(5)^5 \kappa(3)^2 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^2 \\
& + \kappa(5)^5 \kappa(3) \kappa(2)^2 - \kappa(5)^5 \kappa(4)^2 \kappa(1)) + \left(3Y + \frac{5}{2} X^2 \right) \left(-\kappa(3)^7 \kappa(1)^2 - \kappa(3)^7 \kappa(2)^2 \right. \\
& + \kappa(3)^2 \kappa(1)^7 + \kappa(3)^2 \kappa(2)^7 - \kappa(4)^7 \kappa(1)^2 - \kappa(4)^7 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^7 + \kappa(4)^2 \kappa(2)^7) \\
& + \left(3Y + \frac{9}{2} X^2 \right) \left(-\kappa(3)^6 \kappa(1)^3 - \kappa(3)^6 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^6 + \kappa(3)^3 \kappa(2)^6 \right. \\
& \left. - \kappa(4)^6 \kappa(1)^3 - \kappa(4)^6 \kappa(2)^3 + \kappa(4)^3 \kappa(1)^6 + \kappa(4)^3 \kappa(2)^6 \right) + (5X^2
\end{aligned}$$

$$\begin{aligned}
& + 2Y) (\kappa(5)^2 \kappa(4)^6 \kappa(1) + \kappa(5)^2 \kappa(4)^6 \kappa(2) - \kappa(5)^2 \kappa(4) \kappa(1)^6 - \kappa(5)^2 \kappa(4) \kappa(2)^6 \\
& - \kappa(5) \kappa(3)^6 \kappa(1)^2 - \kappa(5) \kappa(3)^6 \kappa(2)^2 + \kappa(5) \kappa(3)^2 \kappa(1)^6 + \kappa(5) \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(5) \kappa(4)^6 \kappa(1)^2 - \kappa(5) \kappa(4)^6 \kappa(2)^2 + \kappa(5) \kappa(4)^2 \kappa(1)^6 + \kappa(5) \kappa(4)^2 \kappa(2)^6 \\
& - \kappa(6)^6 \kappa(3)^2 \kappa(1) - \kappa(6)^6 \kappa(3)^2 \kappa(2) + \kappa(6)^6 \kappa(3) \kappa(1)^2 + \kappa(6)^6 \kappa(3) \kappa(2)^2 \\
& - \kappa(6)^6 \kappa(4)^2 \kappa(1) - \kappa(6)^6 \kappa(4)^2 \kappa(2) + \kappa(6)^6 \kappa(4) \kappa(1)^2 + \kappa(6)^6 \kappa(4) \kappa(2)^2 \\
& + \kappa(6)^2 \kappa(3)^6 \kappa(1) + \kappa(6)^2 \kappa(3)^6 \kappa(2) - \kappa(6)^2 \kappa(3) \kappa(1)^6 - \kappa(6)^2 \kappa(3) \kappa(2)^6 \\
& + \kappa(6)^2 \kappa(4)^6 \kappa(1) + \kappa(6)^2 \kappa(4)^6 \kappa(2) - \kappa(6)^2 \kappa(4) \kappa(1)^6 - \kappa(6)^2 \kappa(4) \kappa(2)^6 \\
& - \kappa(6) \kappa(3)^6 \kappa(1)^2 - \kappa(6) \kappa(3)^6 \kappa(2)^2 + \kappa(6) \kappa(3)^2 \kappa(1)^6 + \kappa(6) \kappa(3)^2 \kappa(2)^6 \\
& - \kappa(6) \kappa(4)^6 \kappa(1)^2 - \kappa(6) \kappa(4)^6 \kappa(2)^2 + \kappa(6) \kappa(4)^2 \kappa(1)^6 + \kappa(6) \kappa(4)^2 \kappa(2)^6 \\
& - \kappa(5)^6 \kappa(3)^2 \kappa(1) - \kappa(5)^6 \kappa(3)^2 \kappa(2) + \kappa(5)^6 \kappa(3) \kappa(1)^2 + \kappa(5)^6 \kappa(3) \kappa(2)^2 \\
& - \kappa(5)^6 \kappa(4)^2 \kappa(1) - \kappa(5)^6 \kappa(4)^2 \kappa(2) + \kappa(5)^6 \kappa(4) \kappa(1)^2 + \kappa(5)^6 \kappa(4) \kappa(2)^2 \\
& + \kappa(5)^2 \kappa(3)^6 \kappa(1) + \kappa(5)^2 \kappa(3)^6 \kappa(2) - \kappa(5)^2 \kappa(3) \kappa(1)^6 - \kappa(5)^2 \kappa(3) \kappa(2)^6) + \left(Y \right. \\
& \left. + \frac{5}{2} X^2 \right) (-\kappa(3)^5 \kappa(1)^4 - \kappa(3)^5 \kappa(2)^4 + \kappa(3)^4 \kappa(1)^5 + \kappa(3)^4 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^4 \\
& - \kappa(4)^5 \kappa(2)^4 + \kappa(4)^4 \kappa(1)^5 + \kappa(4)^4 \kappa(2)^5) + \left(Y + \frac{1}{2} X^2 \right) (\kappa(1)^8 + \kappa(2)^8) + 5X(\\
& -\kappa(3)^5 \kappa(1)^3 - \kappa(3)^5 \kappa(2)^3 + \kappa(3)^3 \kappa(1)^5 + \kappa(3)^3 \kappa(2)^5 - \kappa(4)^5 \kappa(1)^3 - \kappa(4)^5 \kappa(2)^3 \\
& + \kappa(4)^3 \kappa(1)^5 + \kappa(4)^3 \kappa(2)^5) + 4X(-\kappa(3)^6 \kappa(1)^2 - \kappa(3)^6 \kappa(2)^2 + \kappa(3)^2 \kappa(1)^6 \\
& + \kappa(3)^2 \kappa(2)^6 - \kappa(4)^6 \kappa(1)^2 - \kappa(4)^6 \kappa(2)^2 + \kappa(4)^2 \kappa(1)^6 + \kappa(4)^2 \kappa(2)^6) + \left(\frac{5}{2} X^2 \right. \\
& \left. - Y \right) (-\kappa(6)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(6)^4 \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(6)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(6)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(6)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(6)^3 \kappa(3)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(6)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(6)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(6)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(6)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(6)^2 \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(6)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(6)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(6)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(6)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(5)^4 \kappa(3)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(3)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(3)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(3)^2 \kappa(2)^3 - \kappa(5)^4 \kappa(4)^3 \kappa(1)^2 \\
& - \kappa(5)^4 \kappa(4)^3 \kappa(2)^2 + \kappa(5)^4 \kappa(4)^2 \kappa(1)^3 + \kappa(5)^4 \kappa(4)^2 \kappa(2)^3 + \kappa(5)^3 \kappa(3)^4 \kappa(1)^2
\end{aligned}$$

$$\begin{aligned}
& + \kappa(5)^3 \kappa(3)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(3)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(3)^2 \kappa(2)^4 + \kappa(5)^3 \kappa(4)^4 \kappa(1)^2 \\
& + \kappa(5)^3 \kappa(4)^4 \kappa(2)^2 - \kappa(5)^3 \kappa(4)^2 \kappa(1)^4 - \kappa(5)^3 \kappa(4)^2 \kappa(2)^4 - \kappa(5)^2 \kappa(3)^4 \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(3)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(3)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(3)^3 \kappa(2)^4 - \kappa(5)^2 \kappa(4)^4 \kappa(1)^3 \\
& - \kappa(5)^2 \kappa(4)^4 \kappa(2)^3 + \kappa(5)^2 \kappa(4)^3 \kappa(1)^4 + \kappa(5)^2 \kappa(4)^3 \kappa(2)^4 - \kappa(6)^4 \kappa(3)^3 \kappa(1)^2) \\
& + 8X^2 \left(-\kappa(5)^5 \kappa(3)^3 \kappa(1) - \kappa(5)^5 \kappa(3)^3 \kappa(2) + \kappa(5)^5 \kappa(3) \kappa(1)^3 + \kappa(5)^5 \kappa(3) \kappa(2)^3 \right. \\
& - \kappa(5)^5 \kappa(4)^3 \kappa(1) - \kappa(5)^5 \kappa(4)^3 \kappa(2) + \kappa(5)^5 \kappa(4) \kappa(1)^3 + \kappa(5)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(5)^3 \kappa(3)^5 \kappa(1) + \kappa(5)^3 \kappa(3)^5 \kappa(2) - \kappa(5)^3 \kappa(3) \kappa(1)^5 - \kappa(5)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(5)^3 \kappa(4)^5 \kappa(1) + \kappa(5)^3 \kappa(4)^5 \kappa(2) - \kappa(5)^3 \kappa(4) \kappa(1)^5 - \kappa(5)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(5) \kappa(3)^5 \kappa(1)^3 - \kappa(5) \kappa(3)^5 \kappa(2)^3 + \kappa(5) \kappa(3)^3 \kappa(1)^5 + \kappa(5) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(5) \kappa(4)^5 \kappa(1)^3 - \kappa(5) \kappa(4)^5 \kappa(2)^3 + \kappa(5) \kappa(4)^3 \kappa(1)^5 + \kappa(5) \kappa(4)^3 \kappa(2)^5 \\
& - \kappa(6)^5 \kappa(3)^3 \kappa(1) - \kappa(6)^5 \kappa(3)^3 \kappa(2) + \kappa(6)^5 \kappa(3) \kappa(1)^3 + \kappa(6)^5 \kappa(3) \kappa(2)^3 \\
& - \kappa(6)^5 \kappa(4)^3 \kappa(1) - \kappa(6)^5 \kappa(4)^3 \kappa(2) + \kappa(6)^5 \kappa(4) \kappa(1)^3 + \kappa(6)^5 \kappa(4) \kappa(2)^3 \\
& + \kappa(6)^3 \kappa(3)^5 \kappa(1) + \kappa(6)^3 \kappa(3)^5 \kappa(2) - \kappa(6)^3 \kappa(3) \kappa(1)^5 - \kappa(6)^3 \kappa(3) \kappa(2)^5 \\
& + \kappa(6)^3 \kappa(4)^5 \kappa(1) + \kappa(6)^3 \kappa(4)^5 \kappa(2) - \kappa(6)^3 \kappa(4) \kappa(1)^5 - \kappa(6)^3 \kappa(4) \kappa(2)^5 \\
& - \kappa(6) \kappa(3)^5 \kappa(1)^3 - \kappa(6) \kappa(3)^5 \kappa(2)^3 + \kappa(6) \kappa(3)^3 \kappa(1)^5 + \kappa(6) \kappa(3)^3 \kappa(2)^5 \\
& - \kappa(6) \kappa(4)^5 \kappa(1)^3 - \kappa(6) \kappa(4)^5 \kappa(2)^3 + \kappa(6) \kappa(4)^3 \kappa(1)^5 + \kappa(6) \kappa(4)^3 \kappa(2)^5) \\
& + \left(\kappa(1)^2 + \kappa(2)^2 \right) \left(\kappa(1)^4 - \kappa(1)^2 \kappa(2)^2 + \kappa(2)^4 \right) + X \left(\kappa(1) + \kappa(2) \right) \left(\kappa(1)^6 \right. \\
& \left. - \kappa(1)^5 \kappa(2) + \kappa(1)^4 \kappa(2)^2 - \kappa(1)^3 \kappa(2)^3 + \kappa(1)^2 \kappa(2)^4 - \kappa(1) \kappa(2)^5 + \kappa(2)^6 \right)
\end{aligned}$$