

UNDERSTANDING THE DELTOID PHENOMENON IN THE PERSPECTIVE 3-POINT (P3P) PROBLEM

*** APPENDIX ***

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Keywords: P3P: perspective: pose: camera: Grunert system: deltoid: orthocentric system

Abstract: Concerning the Perspective 3-Point (P3P) Problem, Grunert's system of three quadratic equations has a repeated solution if and only if the cubic polynomial introduced by Finsterwalder has a repeated root. This polynomial is here shown to be obtainable from a particularly simple cubic polynomial with complex coefficients via a simple Möbius transformation. This provides surprising geometric insight into the P3P problem. In particular, (1) the discriminant of Finsterwalder's polynomial can be written using the formula for the standard deltoid curve, and (2) this discriminant, when regarded as a function of camera position, vanishes on a surface that approaches a deltoid shape when the camera is moved infinitely far from the control points in a direction perpendicular to the control points plane (the "limit case"). These two facts have been previously reported, but obscure reasoning was required to establish them. In contrast, the present article uses the newly discovered cubic polynomial to easily produce the first fact, which then provides a basis for better understanding the second fact. Also presented are quartic polynomials whose real roots are the P3P solution point coordinates. A detailed geometric description of the P3P solution points in the "limit case" is also supplied.

Appendix

A quartic polynomial (x_{res}) whose real roots are the x -coordinates of the P3P solution points, and a quartic polynomial (y_{res}) whose real roots are the y -coordinates of the P3P solution points, are detailed below.

$$x_{res} = x_{co0} + x_{co1} * x + x_{co2} * x^2 + x_{co3} * x^3 + x_{co4} * x^4$$

$$y_{res} = y_{co0} + y_{co1} * y + y_{co2} * y^2 + y_{co3} * y^3 + y_{co4} * y^4$$

where

$$\begin{aligned} x_{co0} &= 8*f15^2*f16^2*f5^2*f53*f7^2*f8^2*s0 - \\ &\rightarrow 4*f15^2*f16^2*f5^2*f53*f7^2*f8^2*s1 + \\ &\rightarrow 4*f101*f15^2*f16^2*f7*f8*s0*s1 - \\ &\rightarrow f15^2*f16^2*f77*f78*s1^2 - \\ &\rightarrow 4*f15^2*f16^2*f5^2*f53*f7^2*f8^2*s2 - \\ &\rightarrow 4*f15^2*f5^2*f7*f8^3*f97*s0*s2 - \\ &\rightarrow 2*f118*f15^2*f8^2*s1*s2 - \\ &\rightarrow 16*f15^6*f2*f4*f7*f8^3*f9*s0*s1*s2 + \\ &\rightarrow 4*f15^5*f77*f8^2*f9*s1^2*s2 + \\ &\rightarrow f15^2*f38*f42*f5^2*f8^4*s2^2 + 4*f15^5*f42*f8^4*s1*s2^2 \\ &\rightarrow -4*f15^2*f16^2*f5^2*f53*f7^2*f8^2*s3 - \\ &\rightarrow 4*f16^2*f5^2*f7^3*f8*f98*s0*s3 - \\ &\rightarrow 2*f119*f16^2*f7^2*s1*s3 - \\ &\rightarrow 16*f1*f16^6*f3*f7^3*f8*f9*s0*s1*s3 + \\ &\rightarrow 4*f16^5*f7^2*f78*f9*s1^2*s3 + \\ &\rightarrow 2*f115*f5^2*f7^2*f8^2*s2*s3 + \\ &\rightarrow 16*f13*f14*f5^6*f7^3*f8^3*f9*s0*s2*s3 + \\ &\rightarrow 4*f122*f7^2*f8^2*s1*s2*s3 - \\ &\rightarrow 16*f15^3*f16^3*f7^2*f8^2*f9^2*s1^2*s2*s3 - \\ &\rightarrow 4*f38*f5^5*f7^2*f8^4*f9*s2^2*s3 - \\ &\rightarrow 16*f15^3*f5^3*f7^2*f8^4*f9*s1*s2^2*s3 + \\ &\rightarrow f16^2*f37*f41*f5^2*f7^4*s3^2 + 4*f16^5*f41*f7^4*s1*s3^2 \\ &\rightarrow +4*f37*f5^5*f7^4*f8^2*f9*s2*s3^2 + \\ &\rightarrow 16*f16^3*f5^3*f7^4*f8^2*f9*s1*s2*s3^2 \end{aligned}$$

$$\begin{aligned}
xco1 = & -64*f15^2*f16^2*f5^2*f7^3*f8^3*f9*S0 + \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f7^3*f8^3*f9*S1 + \\
\hookrightarrow & 16*f15^2*f16^2*f7^2*f7^6*f8^2*f9*S0*S1 - \\
\hookrightarrow & 8*f10*f15^2*f16^2*f19*f6^2*f7^2*f8^2*f9*S1^2 + \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f7^3*f8^3*f9*S2 + \\
\hookrightarrow & 16*f15^2*f5^2*f7^2*f7^9*f8^3*S0*S2 - \\
\hookrightarrow & 8*f106*f15^2*f7^2*f8^2*S1*S2 - \\
\hookrightarrow & 8*f15^4*f7*f8^3*f86*S0*S1*S2 + \\
\hookrightarrow & 4*f15^4*f7*f8^2*f95*S1^2*S2 - \\
\hookrightarrow & 8*f12*f15^2*f28*f5^2*f7^2*f8^4*t2^2*S2^2 + \\
\hookrightarrow & 4*f15^4*f58*f7*f8^4*S1*S2^2 + \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f7^3*f8^3*f9*S3 + \\
\hookrightarrow & 16*f16^2*f5^2*f7^3*f8^2*f80*S0*S3 - \\
\hookrightarrow & 8*f107*f16^2*f7^2*f8^2*S1*S3 - \\
\hookrightarrow & 8*f16^4*f7^3*f8*f85*S0*S1*S3 + \\
\hookrightarrow & 4*f16^4*f7^2*f8*f96*S1^2*S3 - \\
\hookrightarrow & 8*f112*f5^2*f7^2*f8^2*S2*S3 + \\
\hookrightarrow & 8*f5^4*f63*f7^3*f8^3*f9*S0*S2*S3 + \\
\hookrightarrow & 4*f123*f7^2*f8^2*S1*S2*S3 + \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f7^3*f8^3*f9*S0*S1*S2*S3 - \\
\hookrightarrow & 16*f15^2*f16^2*f48*f7^2*f8^2*f9*S1^2*S2*S3 - \\
\hookrightarrow & 4*f5^4*f7^2*f71*f8^4*f9*S2^2*S3 - \\
\hookrightarrow & 16*f15^2*f34*f5^2*f7^2*f8^4*f9*S1*S2^2*S3 - \\
\hookrightarrow & 8*f11*f16^2*f26*f5^2*f7^4*f8^2*t3^2*S3^2 + \\
\hookrightarrow & 4*f16^4*f59*f7^4*f8*S1*S3^2 - \\
\hookrightarrow & 4*f5^4*f7^4*f70*f8^2*f9*S2*S3^2 - \\
\hookrightarrow & 16*f16^2*f33*f5^2*f7^4*f8^2*f9*S1*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
xco2 = & -16*f15^2*f16^2*f27*f5^2*f7^3*f8^3*S0 + \\
\hookrightarrow & 8*f15^2*f16^2*f27*f5^2*f7^3*f8^3*S1 + \\
\hookrightarrow & 8*f15^2*f16^2*f7^2*f8^2*f88*S0*S1 - \\
\hookrightarrow & 2*f15^2*f16^2*f7^2*f8^2*f89*S1^2 + \\
\hookrightarrow & 8*f15^2*f16^2*f27*f5^2*f7^3*f8^3*S2 + \\
\hookrightarrow & 8*f15^2*f5^2*f7^2*f8^3*f93*S0*S2 - \\
\hookrightarrow & 4*f110*f15^2*f7^2*f8^2*S1*S2 - \\
\hookrightarrow & 16*f15^4*f47*f7^2*f8^3*S0*S1*S2 + \\
\hookrightarrow & 4*f15^4*f62*f7^2*f8^3*S1^2*S2 - \\
\hookrightarrow & 2*f15^2*f5^2*f68*f7^2*f8^4*S2^2 + \\
\hookrightarrow & 4*f15^4*f46*f7^2*f8^4*S1*S2^2 + \\
\hookrightarrow & 8*f15^2*f16^2*f27*f5^2*f7^3*f8^3*S3 + \\
\hookrightarrow & 8*f16^2*f5^2*f7^3*f8^2*f94*S0*S3 - \\
\hookrightarrow & 4*f111*f16^2*f7^2*f8^2*S1*S3 - \\
\hookrightarrow & 16*f16^4*f47*f7^3*f8^2*S0*S1*S3 + \\
\hookrightarrow & 4*f16^4*f61*f7^3*f8^2*S1^2*S3 - \\
\hookrightarrow & 4*f116*f5^2*f7^2*f8^2*S2*S3 - \\
\hookrightarrow & 16*f47*f5^4*f7^3*f8^3*f9^2*S0*S2*S3 + \\
\hookrightarrow & 8*f121*f7^2*f8^2*S1*S2*S3 - \\
\hookrightarrow & 16*f15^3*f16^3*f7^3*f8^3*S1^2*S2*S3 + \\
\hookrightarrow & 4*f5^4*f54*f7^3*f8^4*f9*S2^2*S3 - \\
\hookrightarrow & 16*f15^3*f5^3*f7^3*f8^4*f9*S1*S2^2*S3 - \\
\hookrightarrow & 2*f16^2*f5^2*f69*f7^4*f8^2*S3^2 + \\
\hookrightarrow & 4*f16^4*f45*f7^4*f8^2*S1*S3^2 + \\
\hookrightarrow & 4*f5^4*f55*f7^4*f8^3*f9*S2*S3^2 + \\
\hookrightarrow & 16*f16^3*f5^3*f7^4*f8^3*f9*S1*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
xco3 = & -8*f15^4*f16*f5*f7^3*f8^4*S0*S1*S2 + \\
\hookrightarrow & 4*f15^4*f16*f5*f7^3*f8^4*S1^2*S2 + \\
\hookrightarrow & 4*f15^4*f16*f5*f7^3*f8^4*S1*S2^2 + \\
\hookrightarrow & 8*f15*f16^4*f5*f7^4*f8^3*S0*S1*S3 - \\
\hookrightarrow & 4*f15*f16^4*f5*f7^4*f8^3*S1^2*S3 + \\
\hookrightarrow & 8*f15*f16*f5^4*f7^4*f8^4*f9*S0*S2*S3 + \\
\hookrightarrow & 4*f15^2*f16^2*f29*f5^2*f7^3*f8^3*S1*S2*S3 - \\
\hookrightarrow & 4*f15*f16*f5^4*f7^4*f8^4*f9*S2^2*S3 - \\
\hookrightarrow & 4*f15*f16^4*f5*f7^4*f8^3*S1*S3^2 - \\
\hookrightarrow & 4*f15*f16*f5^4*f7^4*f8^4*f9*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
yco0 = & -32*f15^2*f16^2*f5^2*f6^2*f7^2*f8^2*t2^2*t3^2*S0 + \\
\hookrightarrow & 16*f15^2*f16^2*f5^2*f6^2*f7^2*f8^2*t2^2*t3^2*S1 + \\
\hookrightarrow & 32*f15^2*f16^2*f6^2*f60*f7*f8*t2*t3*S0*S1 - \\
\hookrightarrow & 16*f15^2*f16^2*f35*f36*f6^2*S1^2 + \\
\hookrightarrow & 16*f15^2*f16^2*f5^2*f6^2*f7^2*f8^2*t2^2*t3^2*S2 + \\
\hookrightarrow & 32*f15^2*f5^2*f52*f6*f7*f8^3*t2^2*t3^2*S0*S2 - \\
\hookrightarrow & 16*f109*f15^2*f6*f8^2*t2^2*S1*S2 - \\
\hookrightarrow & 32*f15^6*f6*f7*f8^3*t2*t3^2*S0*S1*S2 + \\
\hookrightarrow & 16*f15^5*f36*f6^2*f8^2*t3*S1^2*S2 - \\
\hookrightarrow & 16*f15^2*f17*f31*f5^2*f8^4*t2^2*S2^2 + \\
\hookrightarrow & 16*f15^5*f17*f8^4*t2^2*t3*S1*S2^2 + \\
\hookrightarrow & 16*f15^2*f16^2*f5^2*f6^2*f7^2*f8^2*t2^2*t3^2*S3 + \\
\hookrightarrow & 32*f16^2*f5^2*f51*f6*f7^3*f8^2*t2^2*S0*S3 - \\
\hookrightarrow & 16*f108*f16^2*f6*f7^2*t3*S1*S3 - \\
\hookrightarrow & 32*f16^6*f6*f7^3*f8*t2^2*t3*S0*S1*S3 + \\
\hookrightarrow & 16*f16^5*f35*f6^2*f7^2*t2*S1^2*S3 - \\
\hookrightarrow & 16*f103*f5^2*f7^2*f8^2*t2*t3*S2*S3 - \\
\hookrightarrow & 32*f5^6*f6^2*f7^3*f8^3*f9*t2*t3*S0*S2*S3 + \\
\hookrightarrow & 16*f117*f7^2*f8^2*S1*S2*S3 - \\
\hookrightarrow & 16*f15^3*f16^3*f6^2*f7^2*f8^2*t2*t3*S1^2*S2*S3 + \\
\hookrightarrow & 16*f31*f5^5*f6*f7^2*f8^4*t2^2*S2^2*S3 - \\
\hookrightarrow & 16*f15^3*f5^3*f6*f7^2*f8^4*t2^2*t3*S1*S2^2*S3 - \\
\hookrightarrow & 16*f16^2*f18*f32*f5^2*f7^4*t3^2*S3^2 + \\
\hookrightarrow & 16*f16^5*f18*f7^4*t2*t3^2*S1*S3^2 - \\
\hookrightarrow & 16*f32*f5^5*f6*f7^4*f8^2*t3^2*S2*S3^2 + \\
\hookrightarrow & 16*f16^3*f5^3*f6*f7^4*f8^2*t2*t3^2*S1*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
yco1 = & 64*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S0 - \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S1 - \\
\hookrightarrow & 16*f15^2*f16^2*f6*f7^2*f73*f8^2*S0*S1 + \\
\hookrightarrow & 16*f15^2*f16^2*f25*f30*f6*f7^2*f8^2*S1^2 - \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S2 - \\
\hookrightarrow & 16*f15^2*f5^2*f7^2*f8^3*f82*t2*S0*S2 + \\
\hookrightarrow & 16*f15^2*f7^2*f8^2*f99*t3*S1*S2 + \\
\hookrightarrow & 16*f15^4*f7*f75*f8^3*t3*S0*S1*S2 - \\
\hookrightarrow & 16*f15^4*f6*f7*f8^2*f83*t3*S1^2*S2 + \\
\hookrightarrow & 16*f15^2*f21*f23*f5^2*f7^2*f8^4*t2*S2^2 - \\
\hookrightarrow & 16*f15^4*f44*f7*f8^4*t2*t3*S1*S2^2 - \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S3 - \\
\hookrightarrow & 16*f16^2*f5^2*f7^3*f8^2*f81*t3*S0*S3 + \\
\hookrightarrow & 16*f100*f16^2*f7^2*f8^2*t2*S1*S3 + \\
\hookrightarrow & 16*f16^4*f7^3*f74*f8*t2*S0*S1*S3 - \\
\hookrightarrow & 16*f16^4*f6*f7^2*f8*f84*t2*S1^2*S3 + \\
\hookrightarrow & 16*f102*f5^2*f6*f7^2*f8^2*S2*S3 + \\
\hookrightarrow & 16*f5^4*f6*f7^3*f72*f8^3*S0*S2*S3 - \\
\hookrightarrow & 16*f114*f6*f7^2*f8^2*t2*t3*S1*S2*S3 - \\
\hookrightarrow & 32*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S0*S1*S2*S3 + \\
\hookrightarrow & 16*f15^2*f16^2*f48*f6*f7^2*f8^2*t2*t3*S1^2*S2*S3 - \\
\hookrightarrow & 16*f5^4*f57*f6*f7^2*f8^4*t2*S2^2*S3 + \\
\hookrightarrow & 16*f15^2*f34*f5^2*f6*f7^2*f8^4*t2*t3*S1*S2^2*S3 + \\
\hookrightarrow & 16*f16^2*f20*f24*f5^2*f7^4*f8^2*t3*S3^2 - \\
\hookrightarrow & 16*f16^4*f43*f7^4*f8^2*t3*S1*S3^2 - \\
\hookrightarrow & 16*f5^4*f56*f6*f7^4*f8^2*t3*S2*S3^2 + \\
\hookrightarrow & 16*f16^2*f33*f5^2*f6*f7^4*f8^2*t2*t3*S1*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
yco2 = & -32*f15^2*f16^2*f22*f5^2*f7^3*f8^3*S0 + \\
\hookrightarrow & 16*f15^2*f16^2*f22*f5^2*f7^3*f8^3*S1 + \\
\hookrightarrow & 8*f15^2*f16^2*f7^2*f8^2*f90*S0*S1 - \\
\hookrightarrow & 4*f15^2*f16^2*f7^2*f8^2*f87*S1^2 + \\
\hookrightarrow & 16*f15^2*f16^2*f22*f5^2*f7^3*f8^3*S2 + \\
\hookrightarrow & 8*f15^2*f5^2*f7^2*f8^3*f91*S0*S2 - \\
\hookrightarrow & 4*f104*f15^2*f7^2*f8^2*S1*S2 - \\
\hookrightarrow & 16*f15^4*f47*f7^2*f8^3*t3^2*S0*S1*S2 + \\
\hookrightarrow & 4*f15^4*f66*f7^2*f8^3*t3*S1^2*S2 - \\
\hookrightarrow & 4*f15^2*f5^2*f64*f7^2*f8^4*S2^2 + \\
\hookrightarrow & 4*f15^4*f40*f7^2*f8^4*t3*S1*S2^2 + \\
\hookrightarrow & 16*f15^2*f16^2*f22*f5^2*f7^3*f8^3*S3 + \\
\hookrightarrow & 8*f16^2*f5^2*f7^3*f8^2*f92*S0*S3 - \\
\hookrightarrow & 4*f105*f16^2*f7^2*f8^2*S1*S3 - \\
\hookrightarrow & 16*f16^4*f47*f7^3*f8^2*t2^2*S0*S1*S3 + \\
\hookrightarrow & 4*f16^4*f67*f7^3*f8^2*t2*S1^2*S3 - \\
\hookrightarrow & 4*f113*f5^2*f7^2*f8^2*S2*S3 - \\
\hookrightarrow & 16*f47*f5^4*f6^2*f7^3*f8^3*S0*S2*S3 + \\
\hookrightarrow & 8*f120*f7^2*f8^2*S1*S2*S3 - \\
\hookrightarrow & 16*f15^3*f16^3*f7^3*f8^3*t2*t3*S1^2*S2*S3 + \\
\hookrightarrow & 4*f5^4*f50*f6*f7^3*f8^4*S2^2*S3 - \\
\hookrightarrow & 16*f15^3*f5^3*f6*f7^3*f8^4*t3*S1*S2^2*S3 - \\
\hookrightarrow & 4*f16^2*f5^2*f65*f7^4*f8^2*S3^2 + \\
\hookrightarrow & 4*f16^4*f39*f7^4*f8^2*t2*S1*S3^2 + \\
\hookrightarrow & 4*f49*f5^4*f6*f7^4*f8^3*S2*S3^2 + \\
\hookrightarrow & 16*f16^3*f5^3*f6*f7^4*f8^3*t2*S1*S2*S3^2
\end{aligned}$$

$$\begin{aligned}
yco3 = & 8*f15^4*f16*f5*f7^3*f8^4*t3*S0*S1*S2 - \\
\hookrightarrow & 4*f15^4*f16*f5*f7^3*f8^4*t3*S1^2*S2 - \\
\hookrightarrow & 4*f15^4*f16*f5*f7^3*f8^4*t3*S1*S2^2 - \\
\hookrightarrow & 8*f15*f16^4*f5*f7^4*f8^3*t2*S0*S1*S3 + \\
\hookrightarrow & 4*f15*f16^4*f5*f7^4*f8^3*t2*S1^2*S3 - \\
\hookrightarrow & 8*f15*f16*f5^4*f6*f7^4*f8^4*S0*S2*S3 - \\
\hookrightarrow & 16*f15^2*f16^2*f5^2*f6*f7^3*f8^3*t2*t3*S1*S2*S3 + \\
\hookrightarrow & 4*f15*f16*f5^4*f6*f7^4*f8^4*S2^2*S3 + \\
\hookrightarrow & 4*f15*f16^4*f5*f7^4*f8^3*t2*S1*S3^2 + \\
\hookrightarrow & 4*f15*f16*f5^4*f6*f7^4*f8^4*S2*S3^2
\end{aligned}$$

$$f1 = 1 + t2$$

$$f2 = 1 + t3$$

$$f3 = -1 + t2$$

$$f4 = -1 + t3$$

$$f5 = t2 - t3$$

$$f6 = t2 + t3$$

$$f7 = 1 + t2^2$$

$$f8 = 1 + t3^2$$

$$f9 = -1 + t2*t3$$

$$f10 = -3 + t2*t3$$

$$f11 = -3 - t2^2 + 2*t2*t3$$

$$f12 = -3 + 2*t2*t3 - t3^2$$

$$f13 = -1 - t2 - t3 + t2*t3$$

$$f14 = -1 + t2 + t3 + t2*t3$$

$$f15 = -2*t2 - t3 + t2^2*t3$$

$$f16 = -t2 - 2*t3 + t2*t3^2$$

$$f17 = t2^4 - 2*t2*t3 - t3^2$$

$$f18 = -t2^2 - 2*t2*t3 + t3^4$$

$$f19 = -3 - t2^2 - t3^2 + t2^2*t3^2$$

$$f20 = -t2^2 - t2*t3 - t3^2 + t2*t3^3$$

$$f21 = -t2^2 - t2*t3 + t2^3*t3 - t3^2$$

$$f22 = t2^2 + t2*t3 + t3^2 + t2^2*t3^2$$

$$f23 = t2^2 - 2*t2*t3 - 2*t3^2 + t2^2*t3^2$$

$$f24 = -2*t2^2 - 2*t2*t3 + t3^2 + t2^2*t3^2$$

$$f25 = -t2^2 - 4*t2*t3 - t3^2 + 2*t2^2*t3^2$$

$$f26 = 3 - t2^2 - 4*t2*t3 + t3^2 + t2^2*t3^2$$

$$f27 = 3 + t2^2 - 2*t2*t3 + t3^2 + t2^2*t3^2$$

$$f28 = 3 + t2^2 - 4*t2*t3 - t3^2 + t2^2*t3^2$$

$$f29 = -3 + t2^2 + 4*t2*t3 + t3^2 + t2^2*t3^2$$

$$f30 = -t2^2 - t2*t3 - t3^2 - 2*t2^2*t3^2 + t2^3*t3^3$$

$$f31 = t2^2 - 2*t2^3*t3 - t3^2 - t2^2*t3^2 + t2^4*t3^2$$

$$f32 = -t2^2 + t3^2 - t2^2*t3^2 - 2*t2*t3^3 + t2^2*t3^4$$

$$f33 = 2*t2^2 + 2*t2*t3 + 5*t3^2 - t2^2*t3^2 - 6*t2*t3^3 + \\ \hookrightarrow t3^4 + t2^2*t3^4$$

$$f34 = 5*t2^2 + t2^4 + 2*t2*t3 - 6*t2^3*t3 + 2*t3^2 - \\ \hookrightarrow t2^2*t3^2 + t2^4*t3^2$$

$$f35 = -t2^2 - 2*t2*t3 - 4*t2*t3^3 - 2*t2^3*t3^3 - t3^4 + \\ \hookrightarrow t2^2*t3^4 + t2^4*t3^4$$

$$f36 = -t2^4 - 2*t2*t3 - 4*t2^3*t3 - t3^2 + t2^4*t3^2 - \\ \hookrightarrow 2*t2^3*t3^3 + t2^4*t3^4$$

$$f37 = 2*t2 + 7*t3 + t2^2*t3 + 4*t2*t3^2 + 10*t3^3 - \\ \hookrightarrow 2*t2^2*t3^3 - 6*t2*t3^4 - t3^5 + t2^2*t3^5$$

$$f38 = 7*t2 + 10*t2^3 - t2^5 + 2*t3 + 4*t2^2*t3 - 6*t2^4*t3 \\ \hookrightarrow + t2*t3^2 - 2*t2^3*t3^2 + t2^5*t3^2$$

$$f39 = 4*t2^3 + 2*t2^2*t3 + 5*t2*t3^2 - t2^3*t3^2 - 2*t3^3 - \\ \hookrightarrow 8*t2^2*t3^3 + 3*t2*t3^4 + t2^3*t3^4$$

$$f40 = -2*t2^3 + 5*t2^2*t3 + 3*t2^4*t3 + 2*t2*t3^2 - \\ \hookrightarrow 8*t2^3*t3^2 + 4*t3^3 - t2^2*t3^3 + t2^4*t3^3$$

$$f41 = 2*t2 - 5*t3 - 3*t2^2*t3 + 12*t2*t3^2 - 2*t3^3 - \\ \hookrightarrow 6*t2^2*t3^3 + 2*t2*t3^4 - t3^5 + t2^2*t3^5$$

$$f42 = -5*t2 - 2*t2^3 - t2^5 + 2*t3 + 12*t2^2*t3 + 2*t2^4*t3 \\ \hookrightarrow - 3*t2*t3^2 - 6*t2^3*t3^2 + t2^5*t3^2$$

$$f43 = 2*t2^3 + 4*t2^2*t3 + t2*t3^2 - t2^3*t3^2 + 2*t3^3 - \\ \hookrightarrow 2*t2^2*t3^3 - 4*t2*t3^4 + t3^5 + t2^2*t3^5$$

$$f44 = 2*t2^3 + t2^5 + t2^2*t3 - 4*t2^4*t3 + 4*t2*t3^2 - \\ \hookrightarrow 2*t2^3*t3^2 + t2^5*t3^2 + 2*t3^3 - t2^2*t3^3$$

$$f45 = 2*t2^2 - t2*t3 + t2^3*t3 + 8*t3^2 + 2*t2^2*t3^2 - \\ \hookrightarrow 11*t2*t3^3 - t2^3*t3^3 + 2*t3^4 + 2*t2^2*t3^4$$

$$f46 = 8*t2^2 + 2*t2^4 - t2*t3 - 11*t2^3*t3 + 2*t3^2 + \\ \hookrightarrow 2*t2^2*t3^2 + 2*t2^4*t3^2 + t2*t3^3 - t2^3*t3^3$$

$$f47 = 3*t2^2 + t2^4 + 3*t2*t3 - t2^3*t3 + 3*t3^2 + \\ \hookrightarrow 3*t2^2*t3^2 - t2*t3^3 - 5*t2^3*t3^3 + t3^4 + t2^4*t3^4$$

$$f48 = 5*t2^2 + t2^4 + 8*t2*t3 + 5*t3^2 + 4*t2^2*t3^2 - \\ \hookrightarrow t2^4*t3^2 - 8*t2^3*t3^3 + t3^4 - t2^2*t3^4 + \\ \hookrightarrow 2*t2^4*t3^4$$

$$f49 = 4*t2^3 + 10*t2^2*t3 + 13*t2*t3^2 - 3*t2^3*t3^2 + \\ \hookrightarrow 9*t3^3 - 11*t2^2*t3^3 - 11*t2*t3^4 + t2^3*t3^4 + t3^5 + \\ \hookrightarrow 3*t2^2*t3^5$$

$$f50 = 9*t2^3 + t2^5 + 13*t2^2*t3 - 11*t2^4*t3 + 10*t2*t3^2 \\ \hookrightarrow - 11*t2^3*t3^2 + 3*t2^5*t3^2 + 4*t3^3 - 3*t2^2*t3^3 + \\ \hookrightarrow t2^4*t3^3$$

$$f51 = t2^2 + t2^4 + t2*t3 + t2^3*t3 - 2*t3^2 + 2*t2^2*t3^2 \\ \hookrightarrow + 6*t2*t3^3 - 2*t2^3*t3^3 - t3^4 - 5*t2^2*t3^4 + \\ \hookrightarrow t2*t3^5 + t2^3*t3^5$$

$$f52 = -2*t2^2 - t2^4 + t2*t3 + 6*t2^3*t3 + t2^5*t3 + t3^2 + \\ \hookrightarrow 2*t2^2*t3^2 - 5*t2^4*t3^2 + t2*t3^3 - 2*t2^3*t3^3 + \\ \hookrightarrow t2^5*t3^3 + t3^4$$

$$f53 = -3 - 2*t2^2 + t2^4 + 4*t2*t3 + 4*t2^3*t3 - 2*t3^2 - \\ \hookrightarrow 2*t2^4*t3^2 + 4*t2*t3^3 - 4*t2^3*t3^3 + t3^4 - \\ \hookrightarrow 2*t2^2*t3^4 + t2^4*t3^4$$

$$f54 = -11*t2^2 - 3*t2^4 - 5*t2*t3 + 21*t2^3*t3 + 2*t2^5*t3 \\ \hookrightarrow - 2*t3^2 + 9*t2^2*t3^2 - 13*t2^4*t3^2 + 3*t2*t3^3 - \\ \hookrightarrow 3*t2^3*t3^3 + 2*t2^5*t3^3$$

$$f55 = -2*t2^2 - 5*t2*t3 + 3*t2^3*t3 - 11*t3^2 + 9*t2^2*t3^2 \\ \hookrightarrow + 21*t2*t3^3 - 3*t2^3*t3^3 - 3*t3^4 - 13*t2^2*t3^4 + \\ \hookrightarrow 2*t2*t3^5 + 2*t2^3*t3^5$$

$$f56 = 2*t2^3 + 2*t2^2*t3 - t2*t3^2 + t2^3*t3^2 - 3*t3^3 + \\ \hookrightarrow 3*t2^2*t3^3 + 6*t2*t3^4 - 2*t2^3*t3^4 - t3^5 - \\ \hookrightarrow 5*t2^2*t3^5 + t2*t3^6 + t2^3*t3^6$$

$$f57 = -3*t2^3 - t2^5 - t2^2*t3 + 6*t2^4*t3 + t2^6*t3 + \\ \hookrightarrow 2*t2*t3^2 + 3*t2^3*t3^2 - 5*t2^5*t3^2 + 2*t3^3 + \\ \hookrightarrow t2^2*t3^3 - 2*t2^4*t3^3 + t2^6*t3^3$$

$$f58 = -17*t2^2 - 6*t2^4 - t2^6 + t2*t3 + 34*t2^3*t3 + \\ \hookrightarrow 5*t2^5*t3 - 2*t3^2 - 3*t2^2*t3^2 - 20*t2^4*t3^2 + \\ \hookrightarrow t2^6*t3^2 + 5*t2*t3^3 + 2*t2^3*t3^3 + t2^5*t3^3$$

$$f59 = -2*t2^2 + t2*t3 + 5*t2^3*t3 - 17*t3^2 - 3*t2^2*t3^2 + \\ \hookrightarrow 34*t2*t3^3 + 2*t2^3*t3^3 - 6*t3^4 - 20*t2^2*t3^4 + \\ \hookrightarrow 5*t2*t3^5 + t2^3*t3^5 - t3^6 + t2^2*t3^6$$

$$f60 = 2*t^2 + t^4 + 5*t^2*t^3 + 4*t^2^3*t^3 + 2*t^3^2 + \\ \hookrightarrow 2*t^2^2*t^3^2 - 2*t^2^4*t^3^2 + 4*t^2*t^3^3 + 2*t^2^3*t^3^3 + \\ \hookrightarrow t^3^4 - 2*t^2^2*t^3^4 - 4*t^2^4*t^3^4 + t^2^5*t^3^5$$

$$f61 = 11*t^2 + 3*t^4 + 17*t^2*t^3 - t^2^5*t^3 + 8*t^3^2 + \\ \hookrightarrow 4*t^2^2*t^3^2 - 4*t^2^4*t^3^2 + 3*t^2*t^3^3 - 12*t^2^3*t^3^3 + \\ \hookrightarrow t^2^5*t^3^3 + 2*t^3^4 - 3*t^2^2*t^3^4 + 3*t^2^4*t^3^4$$

$$f62 = 8*t^2 + 2*t^4 + 17*t^2*t^3 + 3*t^2^3*t^3 + 11*t^3^2 + \\ \hookrightarrow 4*t^2^2*t^3^2 - 3*t^2^4*t^3^2 - 12*t^2^3*t^3^3 + 3*t^3^4 - \\ \hookrightarrow 4*t^2^2*t^3^4 + 3*t^2^4*t^3^4 - t^2*t^3^5 + t^2^3*t^3^5$$

$$f63 = -10*t^2 - 2*t^4 - 7*t^2*t^3 - t^2^5*t^3 - 10*t^3^2 - \\ \hookrightarrow 32*t^2^2*t^3^2 + 2*t^2^4*t^3^2 + 40*t^2^3*t^3^3 - 2*t^3^4 + \\ \hookrightarrow 2*t^2^2*t^3^4 - 12*t^2^4*t^3^4 - t^2*t^3^5 + t^2^5*t^3^5$$

$$f64 = 3*t^4 + t^6 + 4*t^2^3*t^3 - 4*t^2^5*t^3 + 8*t^2^2*t^3^2 - \\ \hookrightarrow 2*t^2^4*t^3^2 + 2*t^2^6*t^3^2 + 8*t^2*t^3^3 - 4*t^2^3*t^3^3 - \\ \hookrightarrow 4*t^2^5*t^3^3 + 4*t^3^4 - t^2^4*t^3^4 + t^2^6*t^3^4$$

$$f65 = 4*t^2 + 8*t^2^3*t^3 + 8*t^2^2*t^3^2 + 4*t^2*t^3^3 - \\ \hookrightarrow 4*t^2^3*t^3^3 + 3*t^3^4 - 2*t^2^2*t^3^4 - t^2^4*t^3^4 - \\ \hookrightarrow 4*t^2*t^3^5 - 4*t^2^3*t^3^5 + t^3^6 + 2*t^2^2*t^3^6 + \\ \hookrightarrow t^2^4*t^3^6$$

$$f66 = 2*t^2 + 11*t^2^2*t^3 + t^2^4*t^3 + 14*t^2*t^3^2 + \\ \hookrightarrow 2*t^2^3*t^3^2 + 9*t^3^3 + 10*t^2^2*t^3^3 - 3*t^2^4*t^3^3 - \\ \hookrightarrow 2*t^2*t^3^4 - 16*t^2^3*t^3^4 + t^3^5 - t^2^2*t^3^5 + \\ \hookrightarrow 4*t^2^4*t^3^5$$

$$f67 = 9*t^2 + t^5 + 14*t^2^2*t^3 - 2*t^2^4*t^3 + 11*t^2*t^3^2 + \\ \hookrightarrow 10*t^2^3*t^3^2 - t^2^5*t^3^2 + 2*t^3^3 + 2*t^2^2*t^3^3 - \\ \hookrightarrow 16*t^2^4*t^3^3 + t^2*t^3^4 - 3*t^2^3*t^3^4 + 4*t^2^5*t^3^4$$

$$f68 = 19*t^2 + 16*t^4 + t^6 + 4*t^2*t^3 - 32*t^2^3*t^3 - \\ \hookrightarrow 20*t^2^5*t^3 + 4*t^3^2 + 2*t^2^2*t^3^2 + 28*t^2^4*t^3^2 + \\ \hookrightarrow 6*t^2^6*t^3^2 - 4*t^2*t^3^3 - 12*t^2^5*t^3^3 + 3*t^2^2*t^3^4 + \\ \hookrightarrow t^2^6*t^3^4$$

$$f69 = 4*t^2 + 4*t^2*t^3 - 4*t^2^3*t^3 + 19*t^3^2 + 2*t^2^2*t^3^2 \\ \hookrightarrow + 3*t^2^4*t^3^2 - 32*t^2*t^3^3 + 16*t^3^4 + 28*t^2^2*t^3^4 - \\ \hookrightarrow 20*t^2*t^3^5 - 12*t^2^3*t^3^5 + t^3^6 + 6*t^2^2*t^3^6 + \\ \hookrightarrow t^2^4*t^3^6$$

$$f70 = -2*t^2 - 5*t^2*t^3 - 3*t^2^3*t^3 - 20*t^3^2 - \\ \hookrightarrow 10*t^2^2*t^3^2 + 5*t^2*t^3^3 + 3*t^2^3*t^3^3 - 28*t^3^4 + \\ \hookrightarrow 6*t^2^2*t^3^4 + 33*t^2*t^3^5 - t^2^3*t^3^5 - 10*t^2^2*t^3^6 - \\ \hookrightarrow t^2*t^3^7 + t^2^3*t^3^7$$

$$f71 = -20*t^2 - 28*t^4 - 5*t^2*t^3 + 5*t^2^3*t^3 + 33*t^2^5*t^3 \\ \hookrightarrow - t^2^7*t^3 - 2*t^3^2 - 10*t^2^2*t^3^2 + 6*t^2^4*t^3^2 - \\ \hookrightarrow 10*t^2^6*t^3^2 - 3*t^2*t^3^3 + 3*t^2^3*t^3^3 - t^2^5*t^3^3 + \\ \hookrightarrow t^2^7*t^3^3$$

$$f72 = -2*t^2 + t^2^3*t^3 + 3*t^2^5*t^3 + 2*t^2^2*t^3^2 + \\ \hookrightarrow 2*t^2^4*t^3^2 + t^2*t^3^3 + 8*t^2^3*t^3^3 - t^2^5*t^3^3 - \\ \hookrightarrow 2*t^3^4 + 2*t^2^2*t^3^4 - 10*t^2^4*t^3^4 + 3*t^2*t^3^5 - \\ \hookrightarrow t^2^3*t^3^5 + 2*t^2^5*t^3^5$$

$$f73 = 2*t^2 + 11*t^2^3*t^3 + t^2^5*t^3 + 10*t^2^2*t^3^2 - \\ \hookrightarrow 2*t^2^4*t^3^2 + 11*t^2*t^3^3 + 14*t^2^3*t^3^3 - t^2^5*t^3^3 + \\ \hookrightarrow 2*t^3^4 - 2*t^2^2*t^3^4 - 18*t^2^4*t^3^4 + t^2*t^3^5 - \\ \hookrightarrow t^2^3*t^3^5 + 4*t^2^5*t^3^5$$

$$f74 = 2*t^2 + 9*t^2^3*t^3 + t^2^5*t^3 + 13*t^2^2*t^3^2 - \\ \hookrightarrow t^2^4*t^3^2 + 8*t^2*t^3^3 + 4*t^3^4 + 8*t^2^2*t^3^4 - \\ \hookrightarrow 6*t^2^4*t^3^4 + 2*t^2*t^3^5 - 13*t^2^3*t^3^5 + t^2^5*t^3^5 + \\ \hookrightarrow 2*t^3^6 - t^2^2*t^3^6 + 3*t^2^4*t^3^6$$

$$f75 = 4*t^2 + 2*t^6 + 8*t^2^3*t^3 + 2*t^2^5*t^3 + \\ \hookrightarrow 13*t^2^2*t^3^2 + 8*t^2^4*t^3^2 - t^2^6*t^3^2 + 9*t^2*t^3^3 - \\ \hookrightarrow 13*t^2^5*t^3^3 + 2*t^3^4 - t^2^2*t^3^4 - 6*t^2^4*t^3^4 + \\ \hookrightarrow 3*t^2^6*t^3^4 + t^2*t^3^5 + t^2^5*t^3^5$$

$$f76 = 10*t^2 + 4*t^2 + 16*t^2*t^3 + t^2^3*t^3 - t^2^5*t^3 + \\ \hookrightarrow 10*t^3^2 + 2*t^2^2*t^3^2 - 4*t^2^4*t^3^2 + t^2*t^3^3 - \\ \hookrightarrow 10*t^2^3*t^3^3 + t^2^5*t^3^3 + 4*t^3^4 - 4*t^2^2*t^3^4 + \\ \hookrightarrow 2*t^2^4*t^3^4 - t^2*t^3^5 + t^2^3*t^3^5$$

$$f77 = 5*t^2 + 2*t^2^3 + t^2^5 + 7*t^3 - 2*t^2^2*t^3 + 3*t^2^4*t^3 - \\ \hookrightarrow 2*t^2*t^3^2 + 4*t^2^3*t^3^2 - 2*t^2^5*t^3^2 + 10*t^3^3 - \\ \hookrightarrow 4*t^2^2*t^3^3 - 6*t^2^4*t^3^3 - 19*t^2*t^3^4 - 6*t^2^3*t^3^4 + \\ \hookrightarrow t^2^5*t^3^4 - t^3^5 + 6*t^2^2*t^3^5 + 3*t^2^4*t^3^5$$

$$f78 = 7*t^2 + 10*t^2^3 - t^2^5 + 5*t^3 - 2*t^2^2*t^3 - 19*t^2^4*t^3 \\ \hookrightarrow - 2*t^2*t^3^2 - 4*t^2^3*t^3^2 + 6*t^2^5*t^3^2 + 2*t^3^3 + \\ \hookrightarrow 4*t^2^2*t^3^3 - 6*t^2^4*t^3^3 + 3*t^2*t^3^4 - 6*t^2^3*t^3^4 + \\ \hookrightarrow 3*t^2^5*t^3^4 + t^3^5 - 2*t^2^2*t^3^5 + t^2^4*t^3^5$$

$$f79 = -10*t^2 - 4*t^2 + 4*t^2*t^3 + 15*t^2^3*t^3 + 3*t^2^5*t^3 \\ \hookrightarrow - 4*t^3^2 - 7*t^2^2*t^3^2 - 9*t^2^4*t^3^2 + 8*t^2*t^3^3 + \\ \hookrightarrow 26*t^2^3*t^3^3 + 2*t^2^5*t^3^3 - 4*t^2^2*t^3^4 - 18*t^2^4*t^3^4 \\ \hookrightarrow + 3*t^2^3*t^3^5 + 3*t^2^5*t^3^5 + t^2^2*t^3^6 - t^2^4*t^3^6$$

$$f80 = -4*t^2 - 4*t^2*t^3 + 8*t^2^3*t^3 - 10*t^3^2 - 7*t^2^2*t^3^2 \\ \hookrightarrow - 4*t^2^4*t^3^2 + t^2^6*t^3^2 + 15*t^2*t^3^3 + 26*t^2^3*t^3^3 + \\ \hookrightarrow 3*t^2^5*t^3^3 - 4*t^3^4 - 9*t^2^2*t^3^4 - 18*t^2^4*t^3^4 - \\ \hookrightarrow t^2^6*t^3^4 + 3*t^2*t^3^5 + 2*t^2^3*t^3^5 + 3*t^2^5*t^3^5$$

$$f81 = 8*t^2 + 4*t^2^6 + 16*t^2^3*t^3 + 4*t^2^5*t^3 + \\ \hookrightarrow 11*t^2^2*t^3^2 + 2*t^2^4*t^3^2 - t^2^6*t^3^2 + 3*t^2*t^3^3 + \\ \hookrightarrow 2*t^2^3*t^3^3 - 9*t^2^5*t^3^3 - 2*t^3^4 - 3*t^2^2*t^3^4 - \\ \hookrightarrow 12*t^2^4*t^3^4 + t^2^6*t^3^4 + 3*t^2*t^3^5 + 2*t^2^3*t^3^5 + \\ \hookrightarrow 3*t^2^5*t^3^5$$

$$f82 = -2*t^2 + 3*t^2^3*t^3 + 3*t^2^5*t^3 + 11*t^2^2*t^3^2 - \\ \hookrightarrow 3*t^2^4*t^3^2 + 16*t^2*t^3^3 + 2*t^2^3*t^3^3 + 2*t^2^5*t^3^3 + \\ \hookrightarrow 8*t^3^4 + 2*t^2^2*t^3^4 - 12*t^2^4*t^3^4 + 4*t^2*t^3^5 - \\ \hookrightarrow 9*t^2^3*t^3^5 + 3*t^2^5*t^3^5 + 4*t^3^6 - t^2^2*t^3^6 + \\ \hookrightarrow t^2^4*t^3^6$$

$$\begin{aligned}
f83 &= 2*t^2_3 + t^2_5 + 5*t^2_2*t_3 + 5*t^2_4*t_3 + 8*t^2*t^2_3 + \\
&\hookrightarrow 13*t^2_3*t^3_2 - 2*t^2_5*t^3_2 + 3*t^3_3 + 2*t^2_2*t^3_3 - \\
&\hookrightarrow 9*t^2_4*t^3_3 + 2*t^2*t^3_4 + 6*t^2_3*t^3_4 + t^2_5*t^3_4 + \\
&\hookrightarrow t^3_5 + t^2_2*t^3_5 - 8*t^2_4*t^3_5 - t^2_3*t^3_6 + \\
&\hookrightarrow 2*t^2_5*t^3_6
\end{aligned}$$

$$\begin{aligned}
f84 &= 3*t^2_3 + t^2_5 + 8*t^2_2*t_3 + 2*t^2_4*t_3 + 5*t^2*t^2_3 + \\
&\hookrightarrow 2*t^2_3*t^3_2 + t^2_5*t^3_2 + 2*t^3_3 + 13*t^2_2*t^3_3 + \\
&\hookrightarrow 6*t^2_4*t^3_3 - t^2_6*t^3_3 + 5*t^2*t^3_4 - 9*t^2_3*t^3_4 - \\
&\hookrightarrow 8*t^2_5*t^3_4 + t^3_5 - 2*t^2_2*t^3_5 + t^2_4*t^3_5 + \\
&\hookrightarrow 2*t^2_6*t^3_5
\end{aligned}$$

$$\begin{aligned}
f85 &= -10*t^2_2 - 2*t^2_4 - 13*t^2*t_3 + 22*t^2_3*t_3 + 3*t^2_5*t_3 \\
&\hookrightarrow -13*t^3_2 + 8*t^2_2*t^3_2 - 11*t^2_4*t^3_2 + 6*t^2*t^3_3 + \\
&\hookrightarrow 24*t^2_3*t^3_3 + 2*t^2_5*t^3_3 - 10*t^3_4 + 10*t^2_2*t^3_4 - \\
&\hookrightarrow 20*t^2_4*t^3_4 + 7*t^2*t^3_5 - 6*t^2_3*t^3_5 + 3*t^2_5*t^3_5 - \\
&\hookrightarrow t^3_6 + t^2_4*t^3_6
\end{aligned}$$

$$\begin{aligned}
f86 &= -13*t^2_2 - 10*t^2_4 - t^2_6 - 13*t^2*t_3 + 6*t^2_3*t_3 + \\
&\hookrightarrow 7*t^2_5*t_3 - 10*t^3_2 + 8*t^2_2*t^3_2 + 10*t^2_4*t^3_2 + \\
&\hookrightarrow 22*t^2*t^3_3 + 24*t^2_3*t^3_3 - 6*t^2_5*t^3_3 - 2*t^3_4 - \\
&\hookrightarrow 11*t^2_2*t^3_4 - 20*t^2_4*t^3_4 + t^2_6*t^3_4 + 3*t^2*t^3_5 + \\
&\hookrightarrow 2*t^2_3*t^3_5 + 3*t^2_5*t^3_5
\end{aligned}$$

$$\begin{aligned}
f87 &= 3*t^2_4 + t^2_6 + 8*t^2_3*t_3 + 4*t^2_5*t_3 + 14*t^2_2*t^3_2 \\
&\hookrightarrow + 15*t^2_4*t^3_2 - 6*t^2_6*t^3_2 + 8*t^2*t^3_3 + 8*t^2_3*t^3_3 - \\
&\hookrightarrow 8*t^2_5*t^3_3 + 3*t^3_4 + 15*t^2_2*t^3_4 + 10*t^2_4*t^3_4 + \\
&\hookrightarrow 4*t^2*t^3_5 - 8*t^2_3*t^3_5 - 16*t^2_5*t^3_5 + t^3_6 - \\
&\hookrightarrow t^2_2*t^3_6 + 4*t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f88 &= 11*t^2_2 + 10*t^2_4 + t^2_6 + 14*t^2*t_3 + 5*t^2_3*t_3 - \\
&\hookrightarrow 5*t^2_5*t_3 + 11*t^3_2 + 18*t^2_2*t^3_2 + 6*t^2_4*t^3_2 + \\
&\hookrightarrow t^2_6*t^3_2 + 5*t^2*t^3_3 - 12*t^2_3*t^3_3 - 9*t^2_5*t^3_3 + \\
&\hookrightarrow 10*t^3_4 + 6*t^2_2*t^3_4 + 2*t^2_6*t^3_4 - 5*t^2*t^3_5 - \\
&\hookrightarrow 9*t^2_3*t^3_5 + t^3_6 + t^2_2*t^3_6 + 2*t^2_4*t^3_6
\end{aligned}$$

$$\begin{aligned}
f89 &= 19*t^2_2 + 16*t^2_4 + t^2_6 + 34*t^2*t_3 + 20*t^2_3*t_3 - \\
&\hookrightarrow 6*t^2_5*t_3 + 19*t^3_2 + 24*t^2_2*t^3_2 + t^2_4*t^3_2 + \\
&\hookrightarrow 20*t^2_3*t^3_3 - 8*t^2_5*t^3_3 - 12*t^2_5*t^3_3 + 16*t^3_4 + \\
&\hookrightarrow t^2_2*t^3_4 - 8*t^2_4*t^3_4 + 3*t^2_6*t^3_4 - 6*t^2*t^3_5 - \\
&\hookrightarrow 12*t^2_3*t^3_5 + 2*t^2_5*t^3_5 + t^3_6 + 3*t^2_4*t^3_6
\end{aligned}$$

$$\begin{aligned}
f90 &= 4*t^2_4 + 2*t^2_6 + 7*t^2_3*t_3 + 3*t^2_5*t_3 + \\
&\hookrightarrow 14*t^2_2*t^3_2 + 17*t^2_4*t^3_2 + t^2_6*t^3_2 + 7*t^2*t^3_3 + \\
&\hookrightarrow 4*t^2_3*t^3_3 - 11*t^2_5*t^3_3 + 4*t^3_4 + 17*t^2_2*t^3_4 + \\
&\hookrightarrow 12*t^2_4*t^3_4 + t^2_6*t^3_4 + 3*t^2*t^3_5 - 11*t^2_3*t^3_5 - \\
&\hookrightarrow 18*t^2_5*t^3_5 + 2*t^3_6 + t^2_2*t^3_6 + t^2_4*t^3_6 + \\
&\hookrightarrow 4*t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f91 &= 4*t^2_4 + 2*t^2_6 + 9*t^2_3*t_3 + t^2_5*t_3 + 17*t^2_2*t^3_2 \\
&\hookrightarrow + 9*t^2_4*t^3_2 + 2*t^2_6*t^3_2 + 16*t^2*t^3_3 + 6*t^2_3*t^3_3 \\
&\hookrightarrow -10*t^2_5*t^3_3 + 8*t^3_4 + 10*t^2_2*t^3_4 - 6*t^2_4*t^3_4 + \\
&\hookrightarrow 2*t^2_6*t^3_4 + 4*t^2*t^3_5 - 11*t^2_3*t^3_5 - 7*t^2_5*t^3_5 + \\
&\hookrightarrow 4*t^3_6 + t^2_2*t^3_6 + t^2_4*t^3_6 + 2*t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f92 &= 8*t^2_4 + 4*t^2_6 + 16*t^2_3*t_3 + 4*t^2_5*t_3 + \\
&\hookrightarrow 17*t^2_2*t^3_2 + 10*t^2_4*t^3_2 + t^2_6*t^3_2 + 9*t^2*t^3_3 + \\
&\hookrightarrow 6*t^2_3*t^3_3 - 11*t^2_5*t^3_3 + 4*t^3_4 + 9*t^2_2*t^3_4 - \\
&\hookrightarrow 6*t^2_4*t^3_4 + t^2_6*t^3_4 + t^2*t^3_5 - 10*t^2_3*t^3_5 - \\
&\hookrightarrow 7*t^2_5*t^3_5 + 2*t^3_6 + 2*t^2_2*t^3_6 + 2*t^2_4*t^3_6 + \\
&\hookrightarrow 2*t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f93 &= 11*t^2_2 + 10*t^2_4 + t^2_6 + 8*t^2*t_3 - 9*t^2_3*t_3 - \\
&\hookrightarrow 9*t^2_5*t_3 + 8*t^3_2 + 12*t^2_2*t^3_2 + 17*t^2_4*t^3_2 + \\
&\hookrightarrow 3*t^2_6*t^3_2 - 8*t^2*t^3_3 - 22*t^2_3*t^3_3 - 14*t^2_5*t^3_3 + \\
&\hookrightarrow 4*t^3_4 + 11*t^2_2*t^3_4 + 20*t^2_4*t^3_4 + 3*t^2_6*t^3_4 - \\
&\hookrightarrow 4*t^2*t^3_5 - 5*t^2_3*t^3_5 - 9*t^2_5*t^3_5 + 2*t^2_2*t^3_6 + \\
&\hookrightarrow t^2_4*t^3_6 + t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f94 &= 8*t^2_2 + 4*t^2_4 + 8*t^2*t_3 - 8*t^2_3*t_3 - 4*t^2_5*t_3 + \\
&\hookrightarrow 11*t^3_2 + 12*t^2_2*t^3_2 + 11*t^2_4*t^3_2 + 2*t^2_6*t^3_2 - \\
&\hookrightarrow 9*t^2*t^3_3 - 22*t^2_3*t^3_3 - 5*t^2_5*t^3_3 + 10*t^3_4 + \\
&\hookrightarrow 17*t^2_2*t^3_4 + 20*t^2_4*t^3_4 + t^2_6*t^3_4 - 9*t^2*t^3_5 - \\
&\hookrightarrow 14*t^2_3*t^3_5 - 9*t^2_5*t^3_5 + t^3_6 + 3*t^2_2*t^3_6 + \\
&\hookrightarrow 3*t^2_4*t^3_6 + t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f95 &= -17*t^2_2 - 6*t^2_4 - t^2_6 - 35*t^2*t_3 + 10*t^2_3*t_3 + \\
&\hookrightarrow t^2_5*t_3 - 20*t^3_2 + 17*t^2_2*t^3_2 - 6*t^2_4*t^3_2 + \\
&\hookrightarrow t^2_6*t^3_2 - 17*t^2*t^3_3 + 14*t^2_3*t^3_3 + 11*t^2_5*t^3_3 - \\
&\hookrightarrow 28*t^3_4 + 53*t^2_2*t^3_4 + 18*t^2_4*t^3_4 - 3*t^2_6*t^3_4 + \\
&\hookrightarrow 51*t^2*t^3_5 + 6*t^2_3*t^3_5 - 17*t^2_5*t^3_5 - 21*t^2_2*t^3_6 \\
&\hookrightarrow -22*t^2_4*t^3_6 + 3*t^2_6*t^3_6 + t^2*t^3_7 + 2*t^2_3*t^3_7 + \\
&\hookrightarrow 5*t^2_5*t^3_7
\end{aligned}$$

$$\begin{aligned}
f96 &= -20*t^2_2 - 28*t^2_4 - 35*t^2*t_3 - 17*t^2_3*t_3 + \\
&\hookrightarrow 51*t^2_5*t_3 + t^2_7*t_3 - 17*t^3_2 + 17*t^2_2*t^3_2 + \\
&\hookrightarrow 53*t^2_4*t^3_2 - 21*t^2_6*t^3_2 + 10*t^2*t^3_3 + 14*t^2_3*t^3_3 \\
&\hookrightarrow + 6*t^2_5*t^3_3 + 2*t^2_7*t^3_3 - 6*t^3_4 - 6*t^2_2*t^3_4 + \\
&\hookrightarrow 18*t^2_4*t^3_4 - 22*t^2_6*t^3_4 + t^2*t^3_5 + 11*t^2_3*t^3_5 - \\
&\hookrightarrow 17*t^2_5*t^3_5 + 5*t^2_7*t^3_5 - t^3_6 + t^2_2*t^3_6 - \\
&\hookrightarrow 3*t^2_4*t^3_6 + 3*t^2_6*t^3_6
\end{aligned}$$

$$\begin{aligned}
f97 &= -19*t^2_2 - 17*t^2_4 + 3*t^2_6 + t^2_8 - 4*t^2*t_3 + \\
&\hookrightarrow 30*t^2_3*t_3 + 40*t^2_5*t_3 - 2*t^2_7*t_3 - 4*t^3_2 - \\
&\hookrightarrow 15*t^2_2*t^3_2 - 7*t^2_4*t^3_2 - 37*t^2_6*t^3_2 - t^2_8*t^3_2 + \\
&\hookrightarrow 16*t^2*t^3_3 + 60*t^2_3*t^3_3 - 24*t^2_5*t^3_3 + 12*t^2_7*t^3_3 \\
&\hookrightarrow + 4*t^3_4 - 5*t^2_2*t^3_4 - 59*t^2_4*t^3_4 + 29*t^2_6*t^3_4 - \\
&\hookrightarrow t^2_8*t^3_4 - 4*t^2*t^3_5 - 10*t^2_3*t^3_5 + 24*t^2_5*t^3_5 - \\
&\hookrightarrow 10*t^2_7*t^3_5 - t^2_2*t^3_6 + 3*t^2_4*t^3_6 - 3*t^2_6*t^3_6 + \\
&\hookrightarrow t^2_8*t^3_6
\end{aligned}$$

$$\begin{aligned}
f98 &= -4*t^2_2 + 4*t^2_4 - 4*t^2*t_3 + 16*t^2_3*t_3 - 4*t^2_5*t_3 - \\
&\hookrightarrow 19*t^3_2 - 15*t^2_2*t^3_2 - 5*t^2_4*t^3_2 - t^2_6*t^3_2 + \\
&\hookrightarrow 30*t^2_3*t^3_3 + 60*t^2_5*t^3_3 - 10*t^2_5*t^3_3 - 17*t^3_4 - \\
&\hookrightarrow 7*t^2_2*t^3_4 - 59*t^2_4*t^3_4 + 3*t^2_6*t^3_4 + 40*t^2_5*t^3_5 - \\
&\hookrightarrow 24*t^2_3*t^3_5 + 24*t^2_5*t^3_5 + 3*t^3_6 - 37*t^2_2*t^3_6 + \\
&\hookrightarrow 29*t^2_4*t^3_6 - 3*t^2_6*t^3_6 - 2*t^2*t^3_7 + 12*t^2_3*t^3_7 - \\
&\hookrightarrow 10*t^2_5*t^3_7 + t^3_8 - t^2_2*t^3_8 - t^2_4*t^3_8 + t^2_6*t^3_8
\end{aligned}$$

$$\begin{aligned}
f_{99} &= 15t^2t^6 + 3t^2t^8 + 45t^2t^5t^3 - 3t^2t^7t^3 + \\
&\hookrightarrow 76t^2t^4t^3t^2 - 4t^2t^6t^3t^2 + 77t^2t^3t^3t^3 - \\
&\hookrightarrow 26t^2t^5t^3t^3 - 23t^2t^7t^3t^3 + 69t^2t^2t^3t^4 - \\
&\hookrightarrow 11t^2t^4t^3t^4 - 35t^2t^6t^3t^4 + 5t^2t^8t^3t^4 + 38t^2t^3t^5 \\
&\hookrightarrow -41t^2t^3t^3t^5 - 110t^2t^5t^3t^5 + 17t^2t^7t^3t^5 + 4t^3t^6 \\
&\hookrightarrow -34t^2t^2t^3t^6 - 54t^2t^4t^3t^6 + 94t^2t^6t^3t^6 - \\
&\hookrightarrow 2t^2t^8t^3t^6 + 8t^2t^3t^7 + 11t^2t^3t^3t^7 + 58t^2t^5t^3t^7 - \\
&\hookrightarrow 25t^2t^7t^3t^7 - 7t^2t^2t^3t^8 - 7t^2t^4t^3t^8 - 18t^2t^6t^3t^8 \\
&\hookrightarrow + 2t^2t^8t^3t^8 + 2t^2t^2t^3t^9 + t^2t^3t^3t^9 + t^2t^5t^3t^9 + \\
&\hookrightarrow 2t^2t^7t^3t^9
\end{aligned}$$

$$\begin{aligned}
f_{100} &= 4t^2t^6 + 38t^2t^5t^3 + 8t^2t^7t^3 + 2t^2t^9t^3 + \\
&\hookrightarrow 69t^2t^4t^3t^2 - 34t^2t^6t^3t^2 - 7t^2t^8t^3t^2 + \\
&\hookrightarrow 77t^2t^3t^3t^3 - 41t^2t^5t^3t^3 + 11t^2t^7t^3t^3 + t^2t^9t^3t^3 \\
&\hookrightarrow + 76t^2t^2t^3t^4 - 11t^2t^4t^3t^4 - 54t^2t^6t^3t^4 - \\
&\hookrightarrow 7t^2t^8t^3t^4 + 45t^2t^3t^5 - 26t^2t^3t^3t^5 - 110t^2t^5t^3t^5 \\
&\hookrightarrow + 58t^2t^7t^3t^5 + t^2t^9t^3t^5 + 15t^3t^6 - 4t^2t^2t^3t^6 - \\
&\hookrightarrow 35t^2t^4t^3t^6 + 94t^2t^6t^3t^6 - 18t^2t^8t^3t^6 - 3t^2t^3t^7 \\
&\hookrightarrow -23t^2t^3t^3t^7 + 17t^2t^5t^3t^7 - 25t^2t^7t^3t^7 + \\
&\hookrightarrow 2t^2t^9t^3t^7 + 3t^3t^8 + 5t^2t^4t^3t^8 - 2t^2t^6t^3t^8 + \\
&\hookrightarrow 2t^2t^8t^3t^8
\end{aligned}$$

$$\begin{aligned}
f_{101} &= 19t^2t^2 + 17t^2t^4 - 3t^2t^6 - t^2t^8 + 34t^2t^3t^3 - \\
&\hookrightarrow 16t^2t^3t^3 - 46t^2t^5t^3 - 4t^2t^7t^3 + 19t^3t^2 - \\
&\hookrightarrow 50t^2t^2t^3t^2 - 26t^2t^4t^3t^2 + 22t^2t^6t^3t^2 + \\
&\hookrightarrow 3t^2t^8t^3t^2 - 16t^2t^3t^3t^3 + 14t^2t^3t^3t^3 + 28t^2t^5t^3t^3 \\
&\hookrightarrow + 6t^2t^7t^3t^3 + 17t^3t^4 - 26t^2t^2t^3t^4 + 6t^2t^4t^3t^4 + \\
&\hookrightarrow 6t^2t^6t^3t^4 - 3t^2t^8t^3t^4 - 46t^2t^3t^5 + 28t^2t^3t^3t^5 + \\
&\hookrightarrow 26t^2t^5t^3t^5 - 8t^2t^7t^3t^5 - 3t^3t^6 + 22t^2t^2t^3t^6 + \\
&\hookrightarrow 6t^2t^4t^3t^6 - 26t^2t^6t^3t^6 + t^2t^8t^3t^6 - 4t^2t^3t^7 + \\
&\hookrightarrow 6t^2t^3t^3t^7 - 8t^2t^5t^3t^7 + 6t^2t^7t^3t^7 - t^3t^8 + \\
&\hookrightarrow 3t^2t^2t^3t^8 - 3t^2t^4t^3t^8 + t^2t^6t^3t^8
\end{aligned}$$

$$\begin{aligned}
f_{102} &= -4t^2t^6 + 14t^2t^5t^3 + 20t^2t^7t^3 + 2t^2t^9t^3 + \\
&\hookrightarrow 61t^2t^4t^3t^2 + 26t^2t^6t^3t^2 - 3t^2t^8t^3t^2 + \\
&\hookrightarrow 101t^2t^3t^3t^3 + 40t^2t^5t^3t^3 + t^2t^7t^3t^3 - 2t^2t^9t^3t^3 \\
&\hookrightarrow + 61t^2t^2t^3t^4 - 10t^2t^4t^3t^4 - 99t^2t^6t^3t^4 - \\
&\hookrightarrow 20t^2t^8t^3t^4 + 14t^2t^3t^5 + 40t^2t^3t^3t^5 - 45t^2t^5t^3t^5 \\
&\hookrightarrow + 38t^2t^7t^3t^5 + 5t^2t^9t^3t^5 - 4t^3t^6 + 26t^2t^2t^3t^6 - \\
&\hookrightarrow 99t^2t^4t^3t^6 - 68t^2t^6t^3t^6 - 3t^2t^8t^3t^6 + 20t^2t^3t^7 \\
&\hookrightarrow + t^2t^3t^3t^7 + 38t^2t^5t^3t^7 + 89t^2t^7t^3t^7 - 3t^2t^2t^3t^8 \\
&\hookrightarrow -20t^2t^4t^3t^8 - 3t^2t^6t^3t^8 - 30t^2t^8t^3t^8 + 2t^2t^3t^9 \\
&\hookrightarrow -2t^2t^3t^3t^9 + 5t^2t^5t^3t^9 + 3t^2t^9t^3t^9
\end{aligned}$$

$$\begin{aligned}
f_{103} &= -8t^2t^6 - 11t^2t^5t^3 + 18t^2t^7t^3 + t^2t^9t^3 + \\
&\hookrightarrow 8t^2t^4t^3t^2 + 44t^2t^6t^3t^2 - 4t^2t^8t^3t^2 + 22t^2t^3t^3t^3 \\
&\hookrightarrow + 103t^2t^5t^3t^3 - 16t^2t^7t^3t^3 - t^2t^9t^3t^3 + \\
&\hookrightarrow 8t^2t^2t^3t^4 + 156t^2t^4t^3t^4 - 156t^2t^6t^3t^4 - \\
&\hookrightarrow 8t^2t^8t^3t^4 - 11t^2t^3t^5 + 103t^2t^3t^3t^5 - \\
&\hookrightarrow 298t^2t^5t^3t^5 + 79t^2t^7t^3t^5 + 3t^2t^9t^3t^5 - 8t^3t^6 + \\
&\hookrightarrow 44t^2t^2t^3t^6 - 156t^2t^4t^3t^6 + 184t^2t^6t^3t^6 - \\
&\hookrightarrow 16t^2t^8t^3t^6 + 18t^2t^3t^7 - 16t^2t^3t^3t^7 + 79t^2t^5t^3t^7 \\
&\hookrightarrow -46t^2t^7t^3t^7 + t^2t^9t^3t^7 - 4t^2t^2t^3t^8 - 8t^2t^4t^3t^8 \\
&\hookrightarrow -16t^2t^6t^3t^8 + 4t^2t^8t^3t^8 + t^2t^3t^9 - t^2t^3t^3t^9 + \\
&\hookrightarrow 3t^2t^5t^3t^9 + t^2t^7t^3t^9
\end{aligned}$$

$$\begin{aligned}
f_{104} &= 10t^2t^6 + 6t^2t^8 + 30t^2t^5t^3 + 14t^2t^7t^3 + \\
&\hookrightarrow 61t^2t^4t^3t^2 + 42t^2t^6t^3t^2 + t^2t^8t^3t^2 + 72t^2t^3t^3t^3 \\
&\hookrightarrow + 40t^2t^5t^3t^3 - 32t^2t^7t^3t^3 + 75t^2t^2t^3t^4 + \\
&\hookrightarrow 51t^2t^4t^3t^4 - 47t^2t^6t^3t^4 + t^2t^8t^3t^4 + 44t^2t^3t^5 - \\
&\hookrightarrow 16t^2t^3t^3t^5 - 112t^2t^5t^3t^5 - 20t^2t^7t^3t^5 + 32t^3t^6 + \\
&\hookrightarrow 59t^2t^2t^3t^6 + 13t^2t^4t^3t^6 + 17t^2t^6t^3t^6 + \\
&\hookrightarrow 7t^2t^8t^3t^6 - 8t^2t^3t^7 - 152t^2t^3t^3t^7 - 128t^2t^5t^3t^7 \\
&\hookrightarrow + 16t^2t^7t^3t^7 + 28t^3t^8 + 21t^2t^2t^3t^8 + 109t^2t^4t^3t^8 \\
&\hookrightarrow + 133t^2t^6t^3t^8 - 3t^2t^8t^3t^8 - 20t^2t^3t^9 - \\
&\hookrightarrow 32t^2t^3t^3t^9 - 38t^2t^5t^3t^9 - 42t^2t^7t^3t^9 + 4t^3t^{10} + \\
&\hookrightarrow 5t^2t^2t^3t^{10} + 6t^2t^4t^3t^{10} + 5t^2t^6t^3t^{10} + \\
&\hookrightarrow 4t^2t^8t^3t^{10}
\end{aligned}$$

$$\begin{aligned}
f_{105} &= 32t^2t^6 + 28t^2t^8 + 4t^2t^{10} + 44t^2t^5t^3 - 8t^2t^7t^3 \\
&\hookrightarrow -20t^2t^9t^3 + 75t^2t^4t^3t^2 + 59t^2t^6t^3t^2 + \\
&\hookrightarrow 21t^2t^8t^3t^2 + 5t^2t^{10}t^3t^2 + 72t^2t^3t^3t^3 - \\
&\hookrightarrow 16t^2t^5t^3t^3 - 152t^2t^7t^3t^3 - 32t^2t^9t^3t^3 + \\
&\hookrightarrow 61t^2t^2t^3t^4 + 51t^2t^4t^3t^4 + 13t^2t^6t^3t^4 + \\
&\hookrightarrow 109t^2t^8t^3t^4 + 6t^2t^{10}t^3t^4 + 30t^2t^3t^5 + \\
&\hookrightarrow 40t^2t^3t^3t^5 - 112t^2t^5t^3t^5 - 128t^2t^7t^3t^5 - \\
&\hookrightarrow 38t^2t^9t^3t^5 + 10t^3t^6 + 42t^2t^2t^3t^6 - 47t^2t^4t^3t^6 + \\
&\hookrightarrow 17t^2t^6t^3t^6 + 133t^2t^8t^3t^6 + 5t^2t^{10}t^3t^6 + \\
&\hookrightarrow 14t^2t^3t^7 - 32t^2t^3t^3t^7 - 20t^2t^5t^3t^7 + 16t^2t^7t^3t^7 \\
&\hookrightarrow -42t^2t^9t^3t^7 + 6t^3t^8 + t^2t^2t^3t^8 + t^2t^4t^3t^8 + \\
&\hookrightarrow 7t^2t^6t^3t^8 - 3t^2t^8t^3t^8 + 4t^2t^{10}t^3t^8
\end{aligned}$$

$$\begin{aligned}
f_{106} &= -22t^2t^4 - 10t^2t^6 - 44t^2t^3t^3 + 14t^2t^5t^3 + \\
&\hookrightarrow 10t^2t^7t^3 - 114t^2t^2t^3t^2 + 15t^2t^4t^3t^2 + \\
&\hookrightarrow 20t^2t^6t^3t^2 - t^2t^8t^3t^2 - 92t^2t^3t^3t^3 + 224t^2t^3t^3t^3 + \\
&\hookrightarrow 108t^2t^5t^3t^3 - 16t^2t^7t^3t^3 - 52t^3t^4 + 121t^2t^2t^3t^4 \\
&\hookrightarrow -115t^2t^4t^3t^4 - 101t^2t^6t^3t^4 + 3t^2t^8t^3t^4 + \\
&\hookrightarrow 96t^2t^3t^5 + 88t^2t^3t^3t^5 - 12t^2t^5t^3t^5 + 28t^2t^7t^3t^5 \\
&\hookrightarrow -28t^3t^6 - 63t^2t^2t^3t^6 - 237t^2t^4t^3t^6 + 27t^2t^6t^3t^6 \\
&\hookrightarrow -3t^2t^8t^3t^6 + 60t^2t^3t^7 + 24t^2t^3t^3t^7 + \\
&\hookrightarrow 148t^2t^5t^3t^7 - 8t^2t^7t^3t^7 - 41t^2t^2t^3t^8 - \\
&\hookrightarrow 7t^2t^4t^3t^8 - 33t^2t^6t^3t^8 + t^2t^8t^3t^8 + 12t^2t^3t^3t^9 - \\
&\hookrightarrow 2t^2t^5t^3t^9 + 2t^2t^7t^3t^9 + t^2t^2t^3t^{10} - 2t^2t^4t^3t^{10} + \\
&\hookrightarrow t^2t^6t^3t^{10}
\end{aligned}$$

$$\begin{aligned}
f_{107} &= -52t^2t^4 - 28t^2t^6 - 92t^2t^3t^3 + 96t^2t^5t^3 + \\
&\hookrightarrow 60t^2t^7t^3 - 114t^2t^2t^3t^2 + 121t^2t^4t^3t^2 - \\
&\hookrightarrow 63t^2t^6t^3t^2 - 41t^2t^8t^3t^2 + t^2t^{10}t^3t^2 - 44t^2t^2t^3t^3 + \\
&\hookrightarrow 224t^2t^3t^3t^3 + 88t^2t^5t^3t^3 + 24t^2t^7t^3t^3 + \\
&\hookrightarrow 12t^2t^9t^3t^3 - 22t^3t^4 + 15t^2t^2t^3t^4 - 115t^2t^4t^3t^4 - \\
&\hookrightarrow 237t^2t^6t^3t^4 - 7t^2t^8t^3t^4 - 2t^2t^{10}t^3t^4 + 14t^2t^3t^5 \\
&\hookrightarrow + 108t^2t^3t^3t^5 - 12t^2t^5t^3t^5 + 148t^2t^7t^3t^5 - \\
&\hookrightarrow 2t^2t^9t^3t^5 - 10t^3t^6 + 20t^2t^2t^3t^6 - 101t^2t^4t^3t^6 + \\
&\hookrightarrow 27t^2t^6t^3t^6 - 33t^2t^8t^3t^6 + t^2t^{10}t^3t^6 + 10t^2t^3t^7 - \\
&\hookrightarrow 16t^2t^3t^3t^7 + 28t^2t^5t^3t^7 - 8t^2t^7t^3t^7 + 2t^2t^9t^3t^7 \\
&\hookrightarrow -t^2t^2t^3t^8 + 3t^2t^4t^3t^8 - 3t^2t^6t^3t^8 + t^2t^8t^3t^8
\end{aligned}$$

$$\begin{aligned}
f_{108} = & 8*t^2^6 + 37*t^2^5*t^3 - 6*t^2^7*t^3 + t^2^9*t^3 + \\
\hookrightarrow & 57*t^2^4*t^3^2 - 50*t^2^6*t^3^2 + t^2^8*t^3^2 + 40*t^2^3*t^3^3 \\
\hookrightarrow & - 31*t^2^5*t^3^3 + 34*t^2^7*t^3^3 + t^2^9*t^3^3 + \\
\hookrightarrow & 20*t^2^2*t^3^4 + 89*t^2^4*t^3^4 - 34*t^2^6*t^3^4 - \\
\hookrightarrow & 15*t^2^8*t^3^4 + 79*t^2^3*t^3^5 - 176*t^2^5*t^3^5 + \\
\hookrightarrow & 35*t^2^7*t^3^5 + 2*t^2^9*t^3^5 + 37*t^2^2*t^3^6 - \\
\hookrightarrow & 42*t^2^4*t^3^6 + 85*t^2^6*t^3^6 - 12*t^2^8*t^3^6 - 8*t^2*t^3^7 \\
\hookrightarrow & + 18*t^2^3*t^3^7 - 67*t^2^5*t^3^7 - 4*t^2^7*t^3^7 + t^2^9*t^3^7 \\
\hookrightarrow & - 2*t^3^8 + 34*t^2^2*t^3^8 - 43*t^2^4*t^3^8 + 60*t^2^6*t^3^8 - \\
\hookrightarrow & 5*t^2^8*t^3^8 + 2*t^2*t^3^9 - 21*t^2^3*t^3^9 + 13*t^2^5*t^3^9 - \\
\hookrightarrow & 15*t^2^7*t^3^9 + t^2^9*t^3^9 + t^2^2*t^3^10 + 3*t^2^4*t^3^10 - \\
\hookrightarrow & t^2^6*t^3^10 + t^2^8*t^3^10
\end{aligned}$$

$$\begin{aligned}
f_{109} = & -2*t^2^8 - 8*t^2^7*t^3 + 2*t^2^9*t^3 + 20*t^2^4*t^3^2 + \\
\hookrightarrow & 37*t^2^6*t^3^2 + 34*t^2^8*t^3^2 + t^2^10*t^3^2 + 40*t^2^3*t^3^3 \\
\hookrightarrow & + 79*t^2^5*t^3^3 + 18*t^2^7*t^3^3 - 21*t^2^9*t^3^3 + \\
\hookrightarrow & 57*t^2^2*t^3^4 + 89*t^2^4*t^3^4 - 42*t^2^6*t^3^4 - \\
\hookrightarrow & 43*t^2^8*t^3^4 + 3*t^2^10*t^3^4 + 37*t^2*t^3^5 - 31*t^2^3*t^3^5 \\
\hookrightarrow & - 176*t^2^5*t^3^5 - 67*t^2^7*t^3^5 + 13*t^2^9*t^3^5 + 8*t^3^6 \\
\hookrightarrow & - 50*t^2^2*t^3^6 - 34*t^2^4*t^3^6 + 85*t^2^6*t^3^6 + \\
\hookrightarrow & 60*t^2^8*t^3^6 - t^2^10*t^3^6 - 6*t^2*t^3^7 + 34*t^2^3*t^3^7 + \\
\hookrightarrow & 35*t^2^5*t^3^7 - 4*t^2^7*t^3^7 - 15*t^2^9*t^3^7 + t^2^2*t^3^8 - \\
\hookrightarrow & 15*t^2^4*t^3^8 - 12*t^2^6*t^3^8 - 5*t^2^8*t^3^8 + t^2^10*t^3^8 \\
\hookrightarrow & + t^2*t^3^9 + t^2^3*t^3^9 + 2*t^2^5*t^3^9 + t^2^7*t^3^9 + \\
\hookrightarrow & t^2^9*t^3^9
\end{aligned}$$

$$\begin{aligned}
f_{110} = & 25*t^2^4 + 24*t^2^6 + 3*t^2^8 + 50*t^2^3*t^3 + 22*t^2^5*t^3 \\
\hookrightarrow & - 12*t^2^7*t^3 + 105*t^2^2*t^3^2 + 89*t^2^4*t^3^2 + \\
\hookrightarrow & 7*t^2^6*t^3^2 + 3*t^2^8*t^3^2 + 80*t^2*t^3^3 - 32*t^2^3*t^3^3 - \\
\hookrightarrow & 136*t^2^5*t^3^3 - 24*t^2^7*t^3^3 + 64*t^3^4 + 89*t^2^2*t^3^4 + \\
\hookrightarrow & 59*t^2^4*t^3^4 + 63*t^2^6*t^3^4 + 5*t^2^8*t^3^4 - 44*t^2*t^3^5 \\
\hookrightarrow & - 244*t^2^3*t^3^5 - 184*t^2^5*t^3^5 - 16*t^2^7*t^3^5 + \\
\hookrightarrow & 68*t^3^6 + 91*t^2^2*t^3^6 + 187*t^2^4*t^3^6 + 141*t^2^6*t^3^6 \\
\hookrightarrow & + t^2^8*t^3^6 - 104*t^2*t^3^7 - 160*t^2^3*t^3^7 - \\
\hookrightarrow & 96*t^2^5*t^3^7 - 40*t^2^7*t^3^7 + 12*t^3^8 + 79*t^2^2*t^3^8 + \\
\hookrightarrow & 116*t^2^4*t^3^8 + 33*t^2^6*t^3^8 + 4*t^2^8*t^3^8 - 12*t^2*t^3^9 \\
\hookrightarrow & - 30*t^2^3*t^3^9 - 38*t^2^5*t^3^9 - 4*t^2^7*t^3^9 + \\
\hookrightarrow & 4*t^2^2*t^3^10 + 4*t^2^4*t^3^10 + 4*t^2^6*t^3^10
\end{aligned}$$

$$\begin{aligned}
f_{111} = & 64*t^2^4 + 68*t^2^6 + 12*t^2^8 + 80*t^2^3*t^3 - \\
\hookrightarrow & 44*t^2^5*t^3 - 104*t^2^7*t^3 - 12*t^2^9*t^3 + 105*t^2^2*t^3^2 + \\
\hookrightarrow & 89*t^2^4*t^3^2 + 91*t^2^6*t^3^2 + 79*t^2^8*t^3^2 + \\
\hookrightarrow & 4*t^2^10*t^3^2 + 50*t^2*t^3^3 - 32*t^2^3*t^3^3 - \\
\hookrightarrow & 244*t^2^5*t^3^3 - 160*t^2^7*t^3^3 - 30*t^2^9*t^3^3 + 25*t^3^4 \\
\hookrightarrow & + 89*t^2^2*t^3^4 + 59*t^2^4*t^3^4 + 187*t^2^6*t^3^4 + \\
\hookrightarrow & 116*t^2^8*t^3^4 + 4*t^2^10*t^3^4 + 22*t^2*t^3^5 - \\
\hookrightarrow & 136*t^2^3*t^3^5 - 184*t^2^5*t^3^5 - 96*t^2^7*t^3^5 - \\
\hookrightarrow & 38*t^2^9*t^3^5 + 24*t^3^6 + 7*t^2^2*t^3^6 + 63*t^2^4*t^3^6 + \\
\hookrightarrow & 141*t^2^6*t^3^6 + 33*t^2^8*t^3^6 + 4*t^2^10*t^3^6 - \\
\hookrightarrow & 12*t^2*t^3^7 - 24*t^2^3*t^3^7 - 16*t^2^5*t^3^7 - 40*t^2^7*t^3^7 \\
\hookrightarrow & - 4*t^2^9*t^3^7 + 3*t^3^8 + 3*t^2^2*t^3^8 + 5*t^2^4*t^3^8 + \\
\hookrightarrow & t^2^6*t^3^8 + 4*t^2^8*t^3^8
\end{aligned}$$

$$\begin{aligned}
f_{112} = & -52*t^2^4 - 28*t^2^6 - 116*t^2^3*t^3 + 48*t^2^5*t^3 + \\
\hookrightarrow & 52*t^2^7*t^3 - 150*t^2^2*t^3^2 + 33*t^2^4*t^3^2 + t^2^6*t^3^2 - \\
\hookrightarrow & 29*t^2^8*t^3^2 + t^2^10*t^3^2 - 116*t^2*t^3^3 + 56*t^2^3*t^3^3 \\
\hookrightarrow & + 248*t^2^5*t^3^3 + 24*t^2^7*t^3^3 + 12*t^2^9*t^3^3 - 52*t^3^4 \\
\hookrightarrow & + 33*t^2^2*t^3^4 + 208*t^2^4*t^3^4 - 222*t^2^6*t^3^4 - \\
\hookrightarrow & 12*t^2^8*t^3^4 - 3*t^2^10*t^3^4 + 48*t^2*t^3^5 + \\
\hookrightarrow & 248*t^2^3*t^3^5 + 40*t^2^5*t^3^5 + 56*t^2^7*t^3^5 - \\
\hookrightarrow & 8*t^2^9*t^3^5 - 28*t^3^6 + t^2^2*t^3^6 - 222*t^2^4*t^3^6 - \\
\hookrightarrow & 372*t^2^6*t^3^6 - 6*t^2^8*t^3^6 + 3*t^2^10*t^3^6 + 52*t^2*t^3^7 \\
\hookrightarrow & + 24*t^2^3*t^3^7 + 56*t^2^5*t^3^7 + 280*t^2^7*t^3^7 + \\
\hookrightarrow & 4*t^2^9*t^3^7 - 29*t^2^2*t^3^8 - 12*t^2^4*t^3^8 - 6*t^2^6*t^3^8 \\
\hookrightarrow & - 80*t^2^8*t^3^8 - t^2^10*t^3^8 + 12*t^2^3*t^3^9 - \\
\hookrightarrow & 8*t^2^5*t^3^9 + 4*t^2^7*t^3^9 + 8*t^2^9*t^3^9 + t^2^2*t^3^10 - \\
\hookrightarrow & 3*t^2^4*t^3^10 + 3*t^2^6*t^3^10 - t^2^8*t^3^10
\end{aligned}$$

$$\begin{aligned}
f_{113} = & 32*t^2^6 + 28*t^2^8 + 4*t^2^10 + 148*t^2^5*t^3 + \\
\hookrightarrow & 104*t^2^7*t^3 + 4*t^2^9*t^3 + 335*t^2^4*t^3^2 + 223*t^2^6*t^3^2 \\
\hookrightarrow & - 11*t^2^8*t^3^2 - 3*t^2^10*t^3^2 + 428*t^2^3*t^3^3 + \\
\hookrightarrow & 244*t^2^5*t^3^3 - 156*t^2^7*t^3^3 - 36*t^2^9*t^3^3 + \\
\hookrightarrow & 335*t^2^2*t^3^4 + 260*t^2^4*t^3^4 - 230*t^2^6*t^3^4 - \\
\hookrightarrow & 36*t^2^8*t^3^4 + 7*t^2^10*t^3^4 + 148*t^2*t^3^5 + \\
\hookrightarrow & 244*t^2^3*t^3^5 - 356*t^2^5*t^3^5 - 212*t^2^7*t^3^5 + \\
\hookrightarrow & 16*t^2^9*t^3^5 + 32*t^3^6 + 223*t^2^2*t^3^6 - 230*t^2^4*t^3^6 \\
\hookrightarrow & - 128*t^2^6*t^3^6 + 182*t^2^8*t^3^6 + t^2^10*t^3^6 + \\
\hookrightarrow & 104*t^2*t^3^7 - 156*t^2^3*t^3^7 - 212*t^2^5*t^3^7 + \\
\hookrightarrow & 76*t^2^7*t^3^7 - 36*t^2^9*t^3^7 + 28*t^3^8 - 11*t^2^2*t^3^8 - \\
\hookrightarrow & 36*t^2^4*t^3^8 + 182*t^2^6*t^3^8 + 76*t^2^8*t^3^8 + \\
\hookrightarrow & t^2^10*t^3^8 + 4*t^2*t^3^9 - 36*t^2^3*t^3^9 + 16*t^2^5*t^3^9 - \\
\hookrightarrow & 36*t^2^7*t^3^9 - 44*t^2^9*t^3^9 + 4*t^3^10 - 3*t^2^2*t^3^10 + \\
\hookrightarrow & 7*t^2^4*t^3^10 + t^2^6*t^3^10 + t^2^8*t^3^10 + 6*t^2^10*t^3^10
\end{aligned}$$

$$\begin{aligned}
f_{114} = & 77*t^2^6 + 24*t^2^8 + 3*t^2^10 + 231*t^2^5*t^3 - \\
\hookrightarrow & 58*t^2^7*t^3 - 9*t^2^9*t^3 + 489*t^2^4*t^3^2 - 135*t^2^6*t^3^2 \\
\hookrightarrow & + 13*t^2^8*t^3^2 - 3*t^2^10*t^3^2 + 593*t^2^3*t^3^3 - \\
\hookrightarrow & 591*t^2^5*t^3^3 - 241*t^2^7*t^3^3 - 17*t^2^9*t^3^3 + \\
\hookrightarrow & 489*t^2^2*t^3^4 - 667*t^2^4*t^3^4 + 25*t^2^6*t^3^4 + \\
\hookrightarrow & 243*t^2^8*t^3^4 + 6*t^2^10*t^3^4 + 231*t^2*t^3^5 - \\
\hookrightarrow & 591*t^2^3*t^3^5 - 311*t^2^5*t^3^5 + 267*t^2^7*t^3^5 - \\
\hookrightarrow & 68*t^2^9*t^3^5 + 77*t^3^6 - 135*t^2^2*t^3^6 + 25*t^2^4*t^3^6 + \\
\hookrightarrow & 1045*t^2^6*t^3^6 - 146*t^2^8*t^3^6 + 6*t^2^10*t^3^6 - \\
\hookrightarrow & 58*t^2*t^3^7 - 241*t^2^3*t^3^7 + 267*t^2^5*t^3^7 - \\
\hookrightarrow & 799*t^2^7*t^3^7 + 31*t^2^9*t^3^7 + 24*t^3^8 + 13*t^2^2*t^3^8 + \\
\hookrightarrow & 243*t^2^4*t^3^8 - 146*t^2^6*t^3^8 + 277*t^2^8*t^3^8 - \\
\hookrightarrow & 3*t^2^10*t^3^8 - 9*t^2*t^3^9 - 17*t^2^3*t^3^9 - 68*t^2^5*t^3^9 \\
\hookrightarrow & + 31*t^2^7*t^3^9 - 45*t^2^9*t^3^9 + 3*t^3^10 - 3*t^2^2*t^3^10 \\
\hookrightarrow & + 6*t^2^4*t^3^10 + 6*t^2^6*t^3^10 - 3*t^2^8*t^3^10 + \\
\hookrightarrow & 3*t^2^10*t^3^10
\end{aligned}$$

$$\begin{aligned}
f_{115} = & -92t^2t^4 + 12t^2t^8 - 172t^2t^3t^3 + 220t^2t^5t^3 + \\
\hookrightarrow & 92t^2t^7t^3 - 12t^2t^9t^3 - 201t^2t^2t^3t^2 + 182t^2t^4t^3t^2 \\
\hookrightarrow & + 80t^2t^6t^3t^2 - 126t^2t^8t^3t^2 + t^2t^{10}t^3t^2 - \\
\hookrightarrow & 172t^2t^2t^3t^3 + 168t^2t^3t^3t^3 + 544t^2t^5t^3t^3 - \\
\hookrightarrow & 456t^2t^7t^3t^3 + 44t^2t^9t^3t^3 - 92t^2t^4t^4 + 182t^2t^2t^3t^4 \\
\hookrightarrow & + 488t^2t^4t^3t^4 - 1332t^2t^6t^3t^4 + 340t^2t^8t^3t^4 - \\
\hookrightarrow & 2t^2t^{10}t^3t^4 + 220t^2t^2t^3t^5 + 544t^2t^3t^3t^5 - \\
\hookrightarrow & 1224t^2t^5t^3t^5 + 1184t^2t^7t^3t^5 - 84t^2t^9t^3t^5 + \\
\hookrightarrow & 80t^2t^2t^3t^6 - 1332t^2t^4t^3t^6 + 1308t^2t^6t^3t^6 - \\
\hookrightarrow & 508t^2t^8t^3t^6 + 4t^2t^{10}t^3t^6 + 92t^2t^3t^7 - \\
\hookrightarrow & 456t^2t^3t^3t^7 + 1184t^2t^5t^3t^7 - 792t^2t^7t^3t^7 + \\
\hookrightarrow & 100t^2t^9t^3t^7 + 12t^2t^3t^8 - 126t^2t^2t^3t^8 + 340t^2t^4t^3t^8 \\
\hookrightarrow & - 508t^2t^6t^3t^8 + 272t^2t^8t^3t^8 - 6t^2t^{10}t^3t^8 - \\
\hookrightarrow & 12t^2t^2t^3t^9 + 44t^2t^3t^3t^9 - 84t^2t^5t^3t^9 + \\
\hookrightarrow & 100t^2t^7t^3t^9 - 48t^2t^9t^3t^9 + t^2t^2t^3t^{10} - \\
\hookrightarrow & 2t^2t^4t^3t^{10} + 4t^2t^6t^3t^{10} - 6t^2t^8t^3t^{10} + \\
\hookrightarrow & 3t^2t^{10}t^3t^{10}
\end{aligned}$$

$$\begin{aligned}
f_{116} = & 64t^2t^4 + 68t^2t^6 + 12t^2t^8 + 176t^2t^3t^3 + \\
\hookrightarrow & 68t^2t^5t^3 - 72t^2t^7t^3 - 12t^2t^9t^3 + 249t^2t^2t^3t^2 + \\
\hookrightarrow & 97t^2t^4t^3t^2 - 9t^2t^6t^3t^2 + 43t^2t^8t^3t^2 + \\
\hookrightarrow & 4t^2t^{10}t^3t^2 + 176t^2t^2t^3t^3 + 20t^2t^3t^3t^3 - \\
\hookrightarrow & 180t^2t^5t^3t^3 - 100t^2t^7t^3t^3 - 12t^2t^9t^3t^3 + 64t^3t^4 \\
\hookrightarrow & + 97t^2t^2t^3t^4 + 12t^2t^4t^3t^4 + 190t^2t^6t^3t^4 + \\
\hookrightarrow & 100t^2t^8t^3t^4 + t^2t^{10}t^3t^4 + 68t^2t^2t^3t^5 - 180t^2t^3t^3t^5 \\
\hookrightarrow & - 188t^2t^5t^3t^5 - 204t^2t^7t^3t^5 - 40t^2t^9t^3t^5 + \\
\hookrightarrow & 68t^3t^6 - 9t^2t^2t^3t^6 + 190t^2t^4t^3t^6 + 260t^2t^6t^3t^6 + \\
\hookrightarrow & 110t^2t^8t^3t^6 + 5t^2t^{10}t^3t^6 - 72t^2t^3t^7 - \\
\hookrightarrow & 100t^2t^3t^3t^7 - 204t^2t^5t^3t^7 - 268t^2t^7t^3t^7 - \\
\hookrightarrow & 28t^2t^9t^3t^7 + 12t^3t^8 + 43t^2t^2t^3t^8 + 100t^2t^4t^3t^8 + \\
\hookrightarrow & 110t^2t^6t^3t^8 + 148t^2t^8t^3t^8 + 3t^2t^{10}t^3t^8 - \\
\hookrightarrow & 12t^2t^2t^3t^9 - 12t^2t^3t^3t^9 - 40t^2t^5t^3t^9 - 28t^2t^7t^3t^9 \\
\hookrightarrow & - 36t^2t^9t^3t^9 + 4t^2t^2t^3t^{10} + t^2t^4t^3t^{10} + \\
\hookrightarrow & 5t^2t^6t^3t^{10} + 3t^2t^8t^3t^{10} + 3t^2t^{10}t^3t^{10}
\end{aligned}$$

$$\begin{aligned}
f_{117} = & -2t^2t^{10} - 10t^2t^9t^3 + 2t^2t^{11}t^3 + 105t^2t^8t^3t^2 + \\
\hookrightarrow & 38t^2t^{10}t^3t^2 + t^2t^{12}t^3t^2 + 480t^2t^7t^3t^3 - \\
\hookrightarrow & 90t^2t^9t^3t^3 - 22t^2t^{11}t^3t^3 + 990t^2t^6t^3t^4 - \\
\hookrightarrow & 734t^2t^8t^3t^4 + 8t^2t^{10}t^3t^4 + 2t^2t^{12}t^3t^4 + \\
\hookrightarrow & 1248t^2t^5t^3t^5 - 2096t^2t^7t^3t^5 + 348t^2t^9t^3t^5 + \\
\hookrightarrow & 4t^2t^{11}t^3t^5 + 990t^2t^4t^3t^6 - 2988t^2t^6t^3t^6 + \\
\hookrightarrow & 1806t^2t^8t^3t^6 - 32t^2t^{10}t^3t^6 + 480t^2t^3t^3t^7 - \\
\hookrightarrow & 2096t^2t^5t^3t^7 + 3008t^2t^7t^3t^7 - 804t^2t^9t^3t^7 - \\
\hookrightarrow & 12t^2t^{11}t^3t^7 + 105t^2t^2t^3t^8 - 734t^2t^4t^3t^8 + \\
\hookrightarrow & 1806t^2t^6t^3t^8 - 1580t^2t^8t^3t^8 + 195t^2t^{10}t^3t^8 + \\
\hookrightarrow & 2t^2t^{12}t^3t^8 - 10t^2t^2t^3t^9 - 90t^2t^3t^3t^9 + \\
\hookrightarrow & 348t^2t^5t^3t^9 - 804t^2t^7t^3t^9 + 444t^2t^9t^3t^9 - \\
\hookrightarrow & 24t^2t^{11}t^3t^9 - 2t^3t^{10} + 38t^2t^2t^3t^{10} + 8t^2t^4t^3t^{10} \\
\hookrightarrow & - 32t^2t^6t^3t^{10} + 195t^2t^8t^3t^{10} - 64t^2t^{10}t^3t^{10} + \\
\hookrightarrow & t^2t^{12}t^3t^{10} + 2t^2t^2t^3t^{11} - 22t^2t^3t^3t^{11} + 4t^2t^5t^3t^{11} \\
\hookrightarrow & - 12t^2t^7t^3t^{11} - 24t^2t^9t^3t^{11} + 4t^2t^{11}t^3t^{11} + \\
\hookrightarrow & t^2t^2t^3t^{12} + 2t^2t^4t^3t^{12} + 2t^2t^8t^3t^{12} + t^2t^{10}t^3t^{12}
\end{aligned}$$

$$\begin{aligned}
f_{118} = & 41t^2t^4 + 80t^2t^6 + 34t^2t^8 - 24t^2t^{10} - 3t^2t^{12} + \\
\hookrightarrow & 82t^2t^3t^3 + 76t^2t^5t^3 - 104t^2t^7t^3 - 188t^2t^9t^3 + \\
\hookrightarrow & 6t^2t^{11}t^3 + 237t^2t^2t^3t^2 + 218t^2t^4t^3t^2 - \\
\hookrightarrow & 218t^2t^6t^3t^2 - 232t^2t^8t^3t^2 + 181t^2t^{10}t^3t^2 + \\
\hookrightarrow & 6t^2t^{12}t^3t^2 + 196t^2t^2t^3t^3 - 452t^2t^3t^3t^3 - \\
\hookrightarrow & 1160t^2t^5t^3t^3 - 88t^2t^7t^3t^3 + 516t^2t^9t^3t^3 - \\
\hookrightarrow & 36t^2t^{11}t^3t^3 + 92t^3t^4 - 454t^2t^2t^3t^4 - 60t^2t^4t^3t^4 \\
\hookrightarrow & + 1668t^2t^6t^3t^4 + 660t^2t^8t^3t^4 - 302t^2t^{10}t^3t^4 - \\
\hookrightarrow & 4t^2t^{12}t^3t^4 - 332t^2t^2t^3t^5 + 152t^2t^3t^3t^5 + \\
\hookrightarrow & 640t^2t^5t^3t^5 - 1000t^2t^7t^3t^5 - 660t^2t^9t^3t^5 + \\
\hookrightarrow & 48t^2t^{11}t^3t^5 + 508t^2t^2t^3t^6 + 306t^2t^4t^3t^6 - \\
\hookrightarrow & 576t^2t^6t^3t^6 + 92t^2t^8t^3t^6 + 244t^2t^{10}t^3t^6 + \\
\hookrightarrow & 2t^2t^{12}t^3t^6 - 4t^2t^3t^7 - 444t^2t^3t^3t^7 - \\
\hookrightarrow & 248t^2t^5t^3t^7 + 280t^2t^7t^3t^7 + 188t^2t^9t^3t^7 - \\
\hookrightarrow & 28t^2t^{11}t^3t^7 - 12t^3t^8 - 18t^2t^2t^3t^8 + 235t^2t^4t^3t^8 \\
\hookrightarrow & + 28t^2t^6t^3t^8 - 86t^2t^8t^3t^8 - 82t^2t^{10}t^3t^8 - \\
\hookrightarrow & t^2t^{12}t^3t^8 + 12t^2t^2t^3t^9 + 22t^2t^3t^3t^9 - 76t^2t^5t^3t^9 + \\
\hookrightarrow & 16t^2t^7t^3t^9 + 16t^2t^9t^3t^9 + 10t^2t^{11}t^3t^9 - \\
\hookrightarrow & t^2t^2t^3t^{10} - 4t^2t^4t^3t^{10} + 10t^2t^6t^3t^{10} - \\
\hookrightarrow & 4t^2t^8t^3t^{10} - t^2t^{10}t^3t^{10}
\end{aligned}$$

$$\begin{aligned}
f_{119} = & 92t^2t^4 - 12t^2t^8 + 196t^2t^3t^3 - 332t^2t^5t^3 - \\
\hookrightarrow & 4t^2t^7t^3 + 12t^2t^9t^3 + 237t^2t^2t^3t^2 - 454t^2t^4t^3t^2 \\
\hookrightarrow & + 508t^2t^6t^3t^2 - 18t^2t^8t^3t^2 - t^2t^{10}t^3t^2 + \\
\hookrightarrow & 82t^2t^2t^3t^3 - 452t^2t^3t^3t^3 + 152t^2t^5t^3t^3 - \\
\hookrightarrow & 444t^2t^7t^3t^3 + 22t^2t^9t^3t^3 + 41t^3t^4 + 218t^2t^2t^3t^4 \\
\hookrightarrow & - 60t^2t^4t^3t^4 + 306t^2t^6t^3t^4 + 235t^2t^8t^3t^4 - \\
\hookrightarrow & 4t^2t^{10}t^3t^4 + 76t^2t^3t^5 - 1160t^2t^3t^3t^5 + \\
\hookrightarrow & 640t^2t^5t^3t^5 - 248t^2t^7t^3t^5 - 76t^2t^9t^3t^5 + 80t^3t^6 \\
\hookrightarrow & - 218t^2t^2t^3t^6 + 1668t^2t^4t^3t^6 - 576t^2t^6t^3t^6 + \\
\hookrightarrow & 28t^2t^8t^3t^6 + 10t^2t^{10}t^3t^6 - 104t^2t^3t^7 - \\
\hookrightarrow & 88t^2t^3t^3t^7 - 1000t^2t^5t^3t^7 + 280t^2t^7t^3t^7 + \\
\hookrightarrow & 16t^2t^9t^3t^7 + 34t^3t^8 - 232t^2t^2t^3t^8 + 660t^2t^4t^3t^8 \\
\hookrightarrow & + 92t^2t^6t^3t^8 - 86t^2t^8t^3t^8 - 4t^2t^{10}t^3t^8 - \\
\hookrightarrow & 188t^2t^2t^3t^9 + 516t^2t^3t^3t^9 - 660t^2t^5t^3t^9 + \\
\hookrightarrow & 188t^2t^7t^3t^9 + 16t^2t^9t^3t^9 - 24t^3t^{10} + \\
\hookrightarrow & 181t^2t^2t^3t^{10} - 302t^2t^4t^3t^{10} + 244t^2t^6t^3t^{10} - \\
\hookrightarrow & 82t^2t^8t^3t^{10} - t^2t^{10}t^3t^{10} + 6t^2t^3t^{11} - \\
\hookrightarrow & 36t^2t^3t^3t^{11} + 48t^2t^5t^3t^{11} - 28t^2t^7t^3t^{11} + \\
\hookrightarrow & 10t^2t^9t^3t^{11} - 3t^3t^{12} + 6t^2t^2t^3t^{12} - 4t^2t^4t^3t^{12} + \\
\hookrightarrow & 2t^2t^6t^3t^{12} - t^2t^8t^3t^{12}
\end{aligned}$$

$$\begin{aligned}
f_{120} = & 19t^2t^8 + 14t^2t^{10} + 3t^2t^{12} + 76t^2t^7t^3 + \\
\hookrightarrow & 32t^2t^9t^3 + 4t^2t^{11}t^3 + 244t^2t^6t^3t^2 + 116t^2t^8t^3t^2 \\
\hookrightarrow & - 4t^2t^{10}t^3t^2 - 4t^2t^{12}t^3t^2 + 466t^2t^5t^3t^3 + \\
\hookrightarrow & 34t^2t^7t^3t^3 - 250t^2t^9t^3t^3 - 26t^2t^{11}t^3t^3 + \\
\hookrightarrow & 577t^2t^4t^3t^4 - 98t^2t^6t^3t^4 - 369t^2t^8t^3t^4 + \\
\hookrightarrow & 112t^2t^{10}t^3t^4 + 6t^2t^{12}t^3t^4 + 466t^2t^3t^3t^5 - \\
\hookrightarrow & 196t^2t^5t^3t^5 - 576t^2t^7t^3t^5 + 100t^2t^9t^3t^5 - \\
\hookrightarrow & 18t^2t^{11}t^3t^5 + 244t^2t^2t^3t^6 - 98t^2t^4t^3t^6 - \\
\hookrightarrow & 532t^2t^6t^3t^6 + 368t^2t^8t^3t^6 + 112t^2t^{10}t^3t^6 + \\
\hookrightarrow & 2t^2t^{12}t^3t^6 + 76t^2t^3t^7 + 34t^2t^3t^3t^7 - \\
\hookrightarrow & 576t^2t^5t^3t^7 + 196t^2t^7t^3t^7 + 68t^2t^9t^3t^7 - \\
\hookrightarrow & 54t^2t^{11}t^3t^7 + 19t^3t^8 + 116t^2t^2t^3t^8 - 369t^2t^4t^3t^8 \\
\hookrightarrow & + 368t^2t^6t^3t^8 + 474t^2t^8t^3t^8 - 122t^2t^{10}t^3t^8 + \\
\hookrightarrow & 6t^2t^{12}t^3t^8 + 32t^2t^3t^9 - 250t^2t^3t^3t^9 + \\
\hookrightarrow & 100t^2t^5t^3t^9 + 68t^2t^7t^3t^9 - 516t^2t^9t^3t^9 + \\
\hookrightarrow & 38t^2t^{11}t^3t^9 + 14t^3t^{10} - 4t^2t^2t^3t^{10} + \\
\hookrightarrow & 112t^2t^4t^3t^{10} + 112t^2t^6t^3t^{10} - 122t^2t^8t^3t^{10} + \\
\hookrightarrow & 212t^2t^{10}t^3t^{10} - 4t^2t^{12}t^3t^{10} + 4t^2t^3t^{11} - \\
\hookrightarrow & 26t^2t^3t^3t^{11} - 18t^2t^5t^3t^{11} - 54t^2t^7t^3t^{11} + \\
\hookrightarrow & 38t^2t^9t^3t^{11} - 40t^2t^{11}t^3t^{11} + 3t^3t^{12} - 4t^2t^2t^3t^{12} \\
\hookrightarrow & + 6t^2t^4t^3t^{12} + 2t^2t^6t^3t^{12} + 6t^2t^8t^3t^{12} - \\
\hookrightarrow & 4t^2t^{10}t^3t^{12} + 3t^2t^{12}t^3t^{12}
\end{aligned}$$

$$\begin{aligned}
f_{121} = & 69t^2t^6 + 50t^2t^8 + 5t^2t^{10} + 207t^2t^5t^3 - \\
\hookrightarrow & 7t^2t^7t^3 - 75t^2t^9t^3 - 5t^2t^{11}t^3 + 495t^2t^4t^3t^2 + \\
\hookrightarrow & 167t^2t^6t^3t^2 + 43t^2t^8t^3t^2 + 53t^2t^{10}t^3t^2 + \\
\hookrightarrow & 2t^2t^{12}t^3t^2 + 645t^2t^3t^3t^3 - 109t^2t^5t^3t^3 - \\
\hookrightarrow & 649t^2t^7t^3t^3 - 151t^2t^9t^3t^3 - 16t^2t^{11}t^3t^3 + \\
\hookrightarrow & 495t^2t^2t^3t^4 - 202t^2t^4t^3t^4 - 442t^2t^6t^3t^4 + \\
\hookrightarrow & 615t^2t^8t^3t^4 + 129t^2t^{10}t^3t^4 + t^2t^{12}t^3t^4 + \\
\hookrightarrow & 207t^2t^3t^5 - 109t^2t^3t^3t^5 - 680t^2t^5t^3t^5 - \\
\hookrightarrow & 60t^2t^7t^3t^5 - 351t^2t^9t^3t^5 - 47t^2t^{11}t^3t^5 + 69t^3t^6 \\
\hookrightarrow & + 167t^2t^2t^3t^6 - 442t^2t^4t^3t^6 + 392t^2t^6t^3t^6 + \\
\hookrightarrow & 599t^2t^8t^3t^6 + 121t^2t^{10}t^3t^6 + 6t^2t^{12}t^3t^6 - \\
\hookrightarrow & 7t^2t^3t^7 - 649t^2t^3t^3t^7 - 60t^2t^5t^3t^7 + 84t^2t^7t^3t^7 \\
\hookrightarrow & - 485t^2t^9t^3t^7 - 19t^2t^{11}t^3t^7 + 50t^3t^8 + \\
\hookrightarrow & 43t^2t^2t^3t^8 + 615t^2t^4t^3t^8 + 599t^2t^6t^3t^8 - \\
\hookrightarrow & 44t^2t^8t^3t^8 + 180t^2t^{10}t^3t^8 + t^2t^{12}t^3t^8 - 75t^2t^3t^9 \\
\hookrightarrow & - 151t^2t^3t^3t^9 - 351t^2t^5t^3t^9 - 485t^2t^7t^3t^9 - \\
\hookrightarrow & 34t^2t^9t^3t^9 - 32t^2t^{11}t^3t^9 + 5t^3t^{10} + 53t^2t^2t^3t^{10} \\
\hookrightarrow & + 129t^2t^4t^3t^{10} + 121t^2t^6t^3t^{10} + 180t^2t^8t^3t^{10} + \\
\hookrightarrow & 14t^2t^{10}t^3t^{10} + 2t^2t^{12}t^3t^{10} - 5t^2t^3t^{11} - \\
\hookrightarrow & 16t^2t^3t^3t^{11} - 47t^2t^5t^3t^{11} - 19t^2t^7t^3t^{11} - \\
\hookrightarrow & 32t^2t^9t^3t^{11} - t^2t^{11}t^3t^{11} + 2t^2t^2t^3t^{12} + t^2t^4t^3t^{12} \\
\hookrightarrow & + 6t^2t^6t^3t^{12} + t^2t^8t^3t^{12} + 2t^2t^{10}t^3t^{12}
\end{aligned}$$

$$\begin{aligned}
f_{122} = & 150t^2t^6 - 44t^2t^8 - 10t^2t^{10} + 450t^2t^5t^3 - \\
\hookrightarrow & 626t^2t^7t^3 + 38t^2t^9t^3 + 10t^2t^{11}t^3 + 981t^2t^4t^3t^2 \\
\hookrightarrow & - 1718t^2t^6t^3t^2 + 860t^2t^8t^3t^2 + 22t^2t^{10}t^3t^2 - \\
\hookrightarrow & t^2t^{12}t^3t^2 + 1212t^2t^3t^3t^3 - 3962t^2t^5t^3t^3 + \\
\hookrightarrow & 2722t^2t^7t^3t^3 - 462t^2t^9t^3t^3 - 22t^2t^{11}t^3t^3 + \\
\hookrightarrow & 981t^2t^2t^3t^4 - 4796t^2t^4t^3t^4 + 6934t^2t^6t^3t^4 - \\
\hookrightarrow & 2218t^2t^8t^3t^4 + 57t^2t^{10}t^3t^4 + 2t^2t^{12}t^3t^4 + \\
\hookrightarrow & 450t^2t^3t^5 - 3962t^2t^3t^3t^5 + 8072t^2t^5t^3t^5 - \\
\hookrightarrow & 6760t^2t^7t^3t^5 + 902t^2t^9t^3t^5 + 18t^2t^{11}t^3t^5 + \\
\hookrightarrow & 150t^3t^6 - 1718t^2t^2t^3t^6 + 6934t^2t^4t^3t^6 - \\
\hookrightarrow & 7752t^2t^6t^3t^6 + 3894t^2t^8t^3t^6 - 130t^2t^{10}t^3t^6 - \\
\hookrightarrow & 2t^2t^{12}t^3t^6 - 626t^2t^3t^7 + 2722t^2t^3t^3t^7 - \\
\hookrightarrow & 6760t^2t^5t^3t^7 + 4920t^2t^7t^3t^7 - 1270t^2t^9t^3t^7 - \\
\hookrightarrow & 10t^2t^{11}t^3t^7 - 44t^3t^8 + 860t^2t^2t^3t^8 - \\
\hookrightarrow & 2218t^2t^4t^3t^8 + 3894t^2t^6t^3t^8 - 2208t^2t^8t^3t^8 + \\
\hookrightarrow & 194t^2t^{10}t^3t^8 + 2t^2t^{12}t^3t^8 + 38t^2t^3t^9 - \\
\hookrightarrow & 462t^2t^3t^3t^9 + 902t^2t^5t^3t^9 - 1270t^2t^7t^3t^9 + \\
\hookrightarrow & 668t^2t^9t^3t^9 - 4t^2t^{11}t^3t^9 - 10t^3t^{10} + 22t^2t^2t^3t^{10} \\
\hookrightarrow & + 57t^2t^4t^3t^{10} - 130t^2t^6t^3t^{10} + 194t^2t^8t^3t^{10} - \\
\hookrightarrow & 116t^2t^{10}t^3t^{10} - t^2t^{12}t^3t^{10} + 10t^2t^3t^{11} - \\
\hookrightarrow & 22t^2t^3t^3t^{11} + 18t^2t^5t^3t^{11} - 10t^2t^7t^3t^{11} - \\
\hookrightarrow & 4t^2t^9t^3t^{11} + 8t^2t^{11}t^3t^{11} - t^2t^2t^3t^{12} + \\
\hookrightarrow & 2t^2t^4t^3t^{12} - 2t^2t^6t^3t^{12} + 2t^2t^8t^3t^{12} - \\
\hookrightarrow & t^2t^{10}t^3t^{12}
\end{aligned}$$

$$\begin{aligned}
f_{123} = & -272t^2t^6 - 104t^2t^8 - 8t^2t^{10} - 816t^2t^5t^3 + \\
\hookrightarrow & 400t^2t^7t^3 + 168t^2t^9t^3 + 8t^2t^{11}t^3 - 1983t^2t^4t^3t^2 \\
\hookrightarrow & + 1060t^2t^6t^3t^2 - 66t^2t^8t^3t^2 - 68t^2t^{10}t^3t^2 + \\
\hookrightarrow & t^2t^{12}t^3t^2 - 2606t^2t^3t^3t^3 + 4408t^2t^5t^3t^3 + \\
\hookrightarrow & 1004t^2t^7t^3t^3 - 80t^2t^9t^3t^3 + 10t^2t^{11}t^3t^3 - \\
\hookrightarrow & 1983t^2t^2t^3t^4 + 5968t^2t^4t^3t^4 - 2562t^2t^6t^3t^4 - \\
\hookrightarrow & 2404t^2t^8t^3t^4 + 25t^2t^{10}t^3t^4 - 4t^2t^{12}t^3t^4 - \\
\hookrightarrow & 816t^2t^3t^5 + 4408t^2t^3t^3t^5 - 2904t^2t^5t^3t^5 - \\
\hookrightarrow & 920t^2t^7t^3t^5 + 1496t^2t^9t^3t^5 - 16t^2t^{11}t^3t^5 - \\
\hookrightarrow & 272t^3t^6 + 1060t^2t^2t^3t^6 - 2562t^2t^4t^3t^6 - \\
\hookrightarrow & 4088t^2t^6t^3t^6 + 1644t^2t^8t^3t^6 - 396t^2t^{10}t^3t^6 + \\
\hookrightarrow & 6t^2t^{12}t^3t^6 + 400t^2t^3t^7 + 1004t^2t^3t^3t^7 - \\
\hookrightarrow & 920t^2t^5t^3t^7 + 6608t^2t^7t^3t^7 - 712t^2t^9t^3t^7 + \\
\hookrightarrow & 52t^2t^{11}t^3t^7 - 104t^3t^8 - 66t^2t^2t^3t^8 - \\
\hookrightarrow & 2404t^2t^4t^3t^8 + 1644t^2t^6t^3t^8 - 4008t^2t^8t^3t^8 + \\
\hookrightarrow & 142t^2t^{10}t^3t^8 - 4t^2t^{12}t^3t^8 + 168t^2t^3t^9 - \\
\hookrightarrow & 80t^2t^3t^3t^9 + 1496t^2t^5t^3t^9 - 712t^2t^7t^3t^9 + \\
\hookrightarrow & 1208t^2t^9t^3t^9 - 16t^2t^{11}t^3t^9 - 8t^3t^{10} - \\
\hookrightarrow & 68t^2t^2t^3t^{10} + 25t^2t^4t^3t^{10} - 396t^2t^6t^3t^{10} + \\
\hookrightarrow & 142t^2t^8t^3t^{10} - 176t^2t^{10}t^3t^{10} + t^2t^{12}t^3t^{10} + \\
\hookrightarrow & 8t^2t^3t^{11} + 10t^2t^3t^3t^{11} - 16t^2t^5t^3t^{11} + \\
\hookrightarrow & 52t^2t^7t^3t^{11} - 16t^2t^9t^3t^{11} + 10t^2t^{11}t^3t^{11} + \\
\hookrightarrow & t^2t^2t^3t^{12} - 4t^2t^4t^3t^{12} + 6t^2t^6t^3t^{12} - 4t^2t^8t^3t^{12} \\
\hookrightarrow & + t^2t^{10}t^3t^{12}
\end{aligned}$$