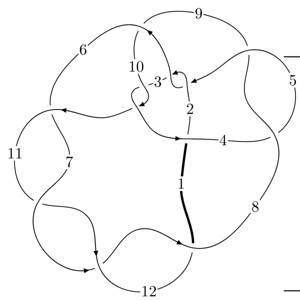
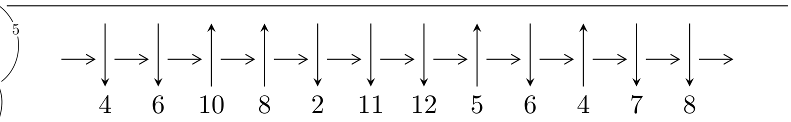
$12n_{0822}$ ($K12n_{0822}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

$$7,11 \xrightarrow[c_{11}]{} 12 \xrightarrow[c_7]{} 4,8 \xrightarrow[c_4]{} 5 \xrightarrow[c_{12}]{} 1 \xrightarrow[c_6]{} 6 \xrightarrow[c_{10}]{} 10 \xrightarrow[c_3]{} 3 \xrightarrow[c_2]{} 2 \xrightarrow[c_9]{} 9 \twoheadrightarrow c_1, c_5, c_8$$

Ideals for irreducible components[2] of $X_{\mathbf{par}}$

$$I_1^u = \langle -3u^{15} + 14u^{14} + \cdots + 2b + 10,\ -21u^{15} + 100u^{14} + \cdots + 4a + 68,\ u^{16} - 6u^{15} + \cdots + 2u + 4\rangle$$
$$I_2^u = \langle 475u^4a^3 - 65u^4a^2 + \cdots + 311a + 1939,\ -u^4a^3 + 2u^4a^2 + \cdots - 2a + 1,\ u^5 + u^4 - 2u^3 - u^2 + u - 1\rangle$$
$$I_3^u = \langle u^4 - 3u^2 + b + 1,\ u^7 - 6u^5 + u^4 + 11u^3 - 3u^2 + a - 6u + 1,$$
$$u^9 + u^8 - 6u^7 - 5u^6 + 12u^5 + 7u^4 - 9u^3 - 2u^2 + u - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 45 representations.

[1]The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2]All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle -3u^{15} + 14u^{14} + \cdots + 2b + 10,\ -21u^{15} + 100u^{14} + \cdots + 4a + 68,\ u^{16} - 6u^{15} + \cdots + 2u + 4 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} \frac{21}{4}u^{15} - 25u^{14} + \cdots - \frac{99}{4}u - 17 \\ \frac{3}{2}u^{15} - 7u^{14} + \cdots - \frac{13}{2}u - 5 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{13}{4}u^{15} - 16u^{14} + \cdots - \frac{67}{4}u - 11 \\ -\frac{3}{2}u^{15} + 5u^{14} + \cdots - \frac{1}{2}u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{3}{2}u^{15} - \frac{11}{2}u^{14} + \cdots - \frac{3}{2}u - \frac{3}{2} \\ \frac{7}{2}u^{15} - 15u^{14} + \cdots - \frac{15}{2}u - 8 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{25}{2}u^{15} - \frac{113}{2}u^{14} + \cdots - \frac{85}{2}u - \frac{67}{2} \\ \frac{19}{2}u^{15} - 43u^{14} + \cdots - \frac{61}{2}u - 26 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{11}{2}u^{15} - \frac{51}{2}u^{14} + \cdots - \frac{43}{2}u - \frac{31}{2} \\ \frac{5}{2}u^{15} - 12u^{14} + \cdots - \frac{19}{2}u - 8 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{9}{2}u^{15} - \frac{41}{2}u^{14} + \cdots - \frac{29}{2}u - \frac{23}{2} \\ \frac{13}{2}u^{15} - 30u^{14} + \cdots - \frac{41}{2}u - 18 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -11u^{15} + 53u^{14} - 38u^{13} - 147u^{12} + 140u^{11} + 198u^{10} + 121u^9 - 664u^8 - 111u^7 + 438u^6 + 477u^5 - 133u^4 - 460u^3 + 26u^2 + 46u + 30$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} + 2u^{15} + \cdots - 6u + 1$
c_2, c_5	$u^{16} + 13u^{15} + \cdots + 208u + 32$
c_3, c_4, c_8 c_{10}	$u^{16} - u^{15} + \cdots + u + 1$
c_6, c_7, c_{11} c_{12}	$u^{16} - 6u^{15} + \cdots + 2u + 4$
c_9	$u^{16} - u^{15} + \cdots - 15u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} + 22y^{15} + \cdots - 52y + 1$
c_2, c_5	$y^{16} - 5y^{15} + \cdots - 5888y + 1024$
c_3, c_4, c_8 c_{10}	$y^{16} - 19y^{15} + \cdots - 7y + 1$
c_6, c_7, c_{11} c_{12}	$y^{16} - 18y^{15} + \cdots - 60y + 16$
c_9	$y^{16} + 27y^{15} + \cdots - 229y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.526647 + 0.921315I$ $a = -0.158275 + 0.852282I$ $b = 1.61938 + 0.26122I$	$12.5756 + 7.7658I$	$-0.37746 - 4.72182I$
$u = -0.526647 - 0.921315I$ $a = -0.158275 - 0.852282I$ $b = 1.61938 - 0.26122I$	$12.5756 - 7.7658I$	$-0.37746 + 4.72182I$
$u = -0.641134 + 0.907508I$ $a = -0.131631 - 0.748203I$ $b = -1.57975 + 0.10158I$	$12.24930 - 1.78364I$	$-0.280416 + 0.020773I$
$u = -0.641134 - 0.907508I$ $a = -0.131631 + 0.748203I$ $b = -1.57975 - 0.10158I$	$12.24930 + 1.78364I$	$-0.280416 - 0.020773I$
$u = -0.860541$ $a = 0.313373$ $b = 0.501732$	-1.66742	-3.52050
$u = 1.384200 + 0.067843I$ $a = -0.23731 - 1.57085I$ $b = 0.063351 - 0.856630I$	$-5.42049 - 2.20486I$	$-9.58545 + 3.34239I$
$u = 1.384200 - 0.067843I$ $a = -0.23731 + 1.57085I$ $b = 0.063351 + 0.856630I$	$-5.42049 + 2.20486I$	$-9.58545 - 3.34239I$
$u = 0.536874$ $a = -1.68270$ $b = 0.418387$	-2.43643	6.61560
$u = 1.54541 + 0.35416I$ $a = -0.78815 + 1.39880I$ $b = -1.60127 + 0.41996I$	$5.91450 - 12.45070I$	$-3.55733 + 5.83875I$
$u = 1.54541 - 0.35416I$ $a = -0.78815 - 1.39880I$ $b = -1.60127 - 0.41996I$	$5.91450 + 12.45070I$	$-3.55733 - 5.83875I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.252945 + 0.318927I$ $a = 0.736930 - 0.632401I$ $b = -0.145126 - 0.490024I$	$-0.252639 + 0.904244I$	$-5.12440 - 7.64172I$
$u = -0.252945 - 0.318927I$ $a = 0.736930 + 0.632401I$ $b = -0.145126 + 0.490024I$	$-0.252639 - 0.904244I$	$-5.12440 + 7.64172I$
$u = -1.65011$ $a = -0.204743$ $b = -0.895334$	-10.2599	-6.17920
$u = 1.62313 + 0.35288I$ $a = 0.898424 - 0.854793I$ $b = 1.47438 - 0.04596I$	$4.87833 - 2.98005I$	$-2.44851 + 1.44008I$
$u = 1.62313 - 0.35288I$ $a = 0.898424 + 0.854793I$ $b = 1.47438 + 0.04596I$	$4.87833 + 2.98005I$	$-2.44851 - 1.44008I$
$u = 1.70974$ $a = -0.565907$ $b = -0.686707$	-10.9818	0.831250

II. $\boldsymbol{I^u_2 = \langle 475u^4a^3 - 65u^4a^2 + \cdots + 311a + 1939,\ -u^4a^3 + 2u^4a^2 + \cdots - 2a + 1,\ u^5 + u^4 - 2u^3 - u^2 + u - 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} a \\ -0.304292a^3u^4 + 0.0416400a^2u^4 + \cdots - 0.199231a - 1.24215 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.136451a^3u^4 + 0.502883a^2u^4 + \cdots + 0.516976a + 0.152466 \\ -0.431134a^3u^4 + 0.227418a^2u^4 + \cdots + 0.450352a - 1.86099 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0743113a^3u^4 + 0.452274a^2u^4 + \cdots - 0.225496a + 1.03139 \\ 0.394619a^3u^4 + 0.977578a^2u^4 + \cdots - 0.354260a + 2.59193 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -0.274183a^3u^4 + 1.04805a^2u^4 + \cdots + 0.616272a - 0.125561 \\ 0.0204997a^3u^4 + 1.32351a^2u^4 + \cdots + 0.682896a + 0.887892 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0999359a^3u^4 + 0.297886a^2u^4 + \cdots + 0.420884a + 0.421525 \\ 0.194747a^3u^4 + 0.573350a^2u^4 + \cdots + 0.487508a + 1.43498 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.281230a^3u^4 - 0.280589a^2u^4 + \cdots - 0.319026a + 0.493274 \\ 0.750160a^3u^4 + 0.244715a^2u^4 + \cdots - 0.447790a + 2.05381 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1108}{1561}u^4a^3 - \frac{900}{1561}u^4a^2 + \cdots + \frac{944}{1561}a - \frac{1002}{223}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{20} - 7u^{19} + \cdots - 454u + 73$
c_2, c_5	$(u^2 - u + 1)^{10}$
c_3, c_4, c_8 c_{10}	$u^{20} + u^{19} + \cdots - 40u + 7$
c_6, c_7, c_{11} c_{12}	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)^4$
c_9	$u^{20} + 3u^{19} + \cdots + 60u + 7$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{20}+19y^{19}+\cdots+54932y+5329$
c_2, c_5	$(y^2+y+1)^{10}$
c_3, c_4, c_8 c_{10}	$y^{20}-21y^{19}+\cdots-1404y+49$
c_6, c_7, c_{11} c_{12}	$(y^5-5y^4+8y^3-3y^2-y-1)^4$
c_9	$y^{20}+27y^{19}+\cdots+2672y+49$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.21774$ $a = 0.182571 + 1.126310I$ $b = -1.267850 - 0.008241I$	$2.53372 + 2.02988I$	$-1.48114 - 3.46410I$
$u = 1.21774$ $a = 0.182571 - 1.126310I$ $b = -1.267850 + 0.008241I$	$2.53372 - 2.02988I$	$-1.48114 + 3.46410I$
$u = 1.21774$ $a = 1.26348 + 1.37832I$ $b = 1.65127 + 0.67233I$	$2.53372 + 2.02988I$	$-1.48114 - 3.46410I$
$u = 1.21774$ $a = 1.26348 - 1.37832I$ $b = 1.65127 - 0.67233I$	$2.53372 - 2.02988I$	$-1.48114 + 3.46410I$
$u = 0.309916 + 0.549911I$ $a = -0.208082 + 0.883906I$ $b = -0.825780 + 0.914155I$	$4.60570 - 3.56046I$	$-0.51511 + 7.89475I$
$u = 0.309916 + 0.549911I$ $a = 0.423531 + 0.774423I$ $b = -1.51045 - 0.06114I$	$4.60570 + 0.49930I$	$-0.515115 + 0.966547I$
$u = 0.309916 + 0.549911I$ $a = 0.96461 - 1.56415I$ $b = 0.628697 + 0.178647I$	$4.60570 + 0.49930I$	$-0.515115 + 0.966547I$
$u = 0.309916 + 0.549911I$ $a = -1.16991 - 1.69121I$ $b = 1.368420 - 0.209289I$	$4.60570 - 3.56046I$	$-0.51511 + 7.89475I$
$u = 0.309916 - 0.549911I$ $a = -0.208082 - 0.883906I$ $b = -0.825780 - 0.914155I$	$4.60570 + 3.56046I$	$-0.51511 - 7.89475I$
$u = 0.309916 - 0.549911I$ $a = 0.423531 - 0.774423I$ $b = -1.51045 + 0.06114I$	$4.60570 - 0.49930I$	$-0.515115 - 0.966547I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.309916 - 0.549911I$ $a = 0.96461 + 1.56415I$ $b = 0.628697 - 0.178647I$	$4.60570 - 0.49930I$	$-0.515115 - 0.966547I$
$u = 0.309916 - 0.549911I$ $a = -1.16991 + 1.69121I$ $b = 1.368420 + 0.209289I$	$4.60570 + 3.56046I$	$-0.51511 - 7.89475I$
$u = -1.41878 + 0.21917I$ $a = -0.639121 - 0.914346I$ $b = -0.205274 - 0.110634I$	$-0.93776 + 2.37095I$	$-4.74431 - 0.03448I$
$u = -1.41878 + 0.21917I$ $a = 0.97762 + 1.05920I$ $b = 1.47248 + 0.31606I$	$-0.93776 + 2.37095I$	$-4.74431 - 0.03448I$
$u = -1.41878 + 0.21917I$ $a = -0.53015 - 1.69434I$ $b = -1.341620 - 0.334073I$	$-0.93776 + 6.43072I$	$-4.74431 - 6.96269I$
$u = -1.41878 + 0.21917I$ $a = 0.23545 + 1.91506I$ $b = 0.53011 + 1.32879I$	$-0.93776 + 6.43072I$	$-4.74431 - 6.96269I$
$u = -1.41878 - 0.21917I$ $a = -0.639121 + 0.914346I$ $b = -0.205274 + 0.110634I$	$-0.93776 - 2.37095I$	$-4.74431 + 0.03448I$
$u = -1.41878 - 0.21917I$ $a = 0.97762 - 1.05920I$ $b = 1.47248 - 0.31606I$	$-0.93776 - 2.37095I$	$-4.74431 + 0.03448I$
$u = -1.41878 - 0.21917I$ $a = -0.53015 + 1.69434I$ $b = -1.341620 + 0.334073I$	$-0.93776 - 6.43072I$	$-4.74431 + 6.96269I$
$u = -1.41878 - 0.21917I$ $a = 0.23545 - 1.91506I$ $b = 0.53011 - 1.32879I$	$-0.93776 - 6.43072I$	$-4.74431 + 6.96269I$

III.
$\boldsymbol{I_3^u = \langle u^4-3u^2+b+1,\ u^7-6u^5+u^4+11u^3-3u^2+a-6u+1,\ u^9+u^8+\cdots+u-1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^7 + 6u^5 - u^4 - 11u^3 + 3u^2 + 6u - 1 \\ -u^4 + 3u^2 - 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^7 + 5u^5 - u^4 - 8u^3 + 3u^2 + 5u - 1 \\ -u^7 + 4u^5 - u^4 - 4u^3 + 3u^2 + u - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^8 + u^7 - 11u^6 - 5u^5 + 18u^4 + 8u^3 - 8u^2 - 5u \\ u^8 - 6u^6 + 11u^4 - 6u^2 + 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^7 - 5u^5 + u^4 + 7u^3 - 2u^2 - 3u - 1 \\ u^7 - 5u^5 + u^4 + 7u^3 - 3u^2 - 3u + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^7 - 5u^5 + 7u^3 - 3u - 1 \\ u^7 - 5u^5 + 7u^3 - u^2 - 3u + 1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^8 + u^7 - 6u^6 - 6u^5 + 11u^4 + 11u^3 - 6u^2 - 6u \\ -u^6 - u^5 + 4u^4 + 3u^3 - 4u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^8 - u^7 - 10u^6 + 6u^5 + 29u^4 - 17u^3 - 27u^2 + 18u - 3$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9 + 2u^8 + 3u^7 + 2u^6 - u^5 - 4u^4 - 4u^3 - u^2 + 2u + 1$
c_2	$u^9 + 2u^8 - u^7 - 4u^6 - 4u^5 - u^4 + 2u^3 + 3u^2 + 2u + 1$
c_3, c_8	$u^9 + u^8 - 5u^7 - 5u^6 + 10u^5 + 10u^4 - 9u^3 - 8u^2 + 3u + 1$
c_4, c_{10}	$u^9 - u^8 - 5u^7 + 5u^6 + 10u^5 - 10u^4 - 9u^3 + 8u^2 + 3u - 1$
c_5	$u^9 - 2u^8 - u^7 + 4u^6 - 4u^5 + u^4 + 2u^3 - 3u^2 + 2u - 1$
c_6, c_7	$u^9 - u^8 - 6u^7 + 5u^6 + 12u^5 - 7u^4 - 9u^3 + 2u^2 + u + 1$
c_9	$u^9 + u^8 + 2u^7 - u^4 - 7u^3 - 5u^2 - 3u - 1$
c_{11}, c_{12}	$u^9 + u^8 - 6u^7 - 5u^6 + 12u^5 + 7u^4 - 9u^3 - 2u^2 + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^9 + 2y^8 - y^7 - 2y^6 + y^5 + 4y^4 - 9y^2 + 6y - 1$
c_2, c_5	$y^9 - 6y^8 + 9y^7 - 4y^5 - y^4 + 2y^3 + y^2 - 2y - 1$
c_3, c_4, c_8 c_{10}	$y^9 - 11y^8 + \cdots + 25y - 1$
c_6, c_7, c_{11} c_{12}	$y^9 - 13y^8 + 70y^7 - 201y^6 + 328y^5 - 295y^4 + 123y^3 - 8y^2 - 3y - 1$
c_9	$y^9 + 3y^8 + 4y^7 - 12y^6 - 24y^5 - 11y^4 + 39y^3 + 15y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.166850 + 0.186778I$ $a = 0.546502 - 0.075866I$ $b = 1.40995 + 0.15111I$	$1.80577 + 0.24484I$	$-3.61013 + 0.69147I$
$u = 1.166850 - 0.186778I$ $a = 0.546502 + 0.075866I$ $b = 1.40995 - 0.15111I$	$1.80577 - 0.24484I$	$-3.61013 - 0.69147I$
$u = -0.701278$ $a = -1.11470$ $b = 0.233515$	-2.77702	-18.0900
$u = -1.45070 + 0.17281I$ $a = 1.08872 + 1.49683I$ $b = 1.171140 + 0.576247I$	$-0.36210 + 4.32575I$	$-2.99049 - 3.69672I$
$u = -1.45070 - 0.17281I$ $a = 1.08872 - 1.49683I$ $b = 1.171140 - 0.576247I$	$-0.36210 - 4.32575I$	$-2.99049 + 3.69672I$
$u = 0.169241 + 0.365052I$ $a = 0.44926 + 2.73952I$ $b = -1.309540 + 0.396544I$	$5.17385 - 2.30230I$	$3.82886 + 2.71981I$
$u = 0.169241 - 0.365052I$ $a = 0.44926 - 2.73952I$ $b = -1.309540 - 0.396544I$	$5.17385 + 2.30230I$	$3.82886 - 2.71981I$
$u = 1.68460$ $a = -0.119390$ $b = -0.539942$	-11.4397	-17.8090
$u = -1.75412$ $a = -0.934890$ $b = -1.23668$	-8.88794	-1.55820

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^9+2u^8+3u^7+2u^6-u^5-4u^4-4u^3-u^2+2u+1)$ $\cdot(u^{16}+2u^{15}+\cdots-6u+1)(u^{20}-7u^{19}+\cdots-454u+73)$
c_2	$(u^2-u+1)^{10}(u^9+2u^8-u^7-4u^6-4u^5-u^4+2u^3+3u^2+2u+1)$ $\cdot(u^{16}+13u^{15}+\cdots+208u+32)$
c_3, c_8	$(u^9+u^8-5u^7-5u^6+10u^5+10u^4-9u^3-8u^2+3u+1)$ $\cdot(u^{16}-u^{15}+\cdots+u+1)(u^{20}+u^{19}+\cdots-40u+7)$
c_4, c_{10}	$(u^9-u^8-5u^7+5u^6+10u^5-10u^4-9u^3+8u^2+3u-1)$ $\cdot(u^{16}-u^{15}+\cdots+u+1)(u^{20}+u^{19}+\cdots-40u+7)$
c_5	$(u^2-u+1)^{10}(u^9-2u^8-u^7+4u^6-4u^5+u^4+2u^3-3u^2+2u-1)$ $\cdot(u^{16}+13u^{15}+\cdots+208u+32)$
c_6, c_7	$(u^5+u^4-2u^3-u^2+u-1)^4$ $\cdot(u^9-u^8-6u^7+5u^6+12u^5-7u^4-9u^3+2u^2+u+1)$ $\cdot(u^{16}-6u^{15}+\cdots+2u+4)$
c_9	$(u^9+u^8+\cdots-3u-1)(u^{16}-u^{15}+\cdots-15u+1)$ $\cdot(u^{20}+3u^{19}+\cdots+60u+7)$
c_{11}, c_{12}	$(u^5+u^4-2u^3-u^2+u-1)^4$ $\cdot(u^9+u^8-6u^7-5u^6+12u^5+7u^4-9u^3-2u^2+u-1)$ $\cdot(u^{16}-6u^{15}+\cdots+2u+4)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^9+2y^8-y^7-2y^6+y^5+4y^4-9y^2+6y-1)$ $\cdot(y^{16}+22y^{15}+\cdots-52y+1)(y^{20}+19y^{19}+\cdots+54932y+5329)$
c_2, c_5	$(y^2+y+1)^{10}(y^9-6y^8+9y^7-4y^5-y^4+2y^3+y^2-2y-1)$ $\cdot(y^{16}-5y^{15}+\cdots-5888y+1024)$
c_3, c_4, c_8 c_{10}	$(y^9-11y^8+\cdots+25y-1)(y^{16}-19y^{15}+\cdots-7y+1)$ $\cdot(y^{20}-21y^{19}+\cdots-1404y+49)$
c_6, c_7, c_{11} c_{12}	$(y^5-5y^4+8y^3-3y^2-y-1)^4$ $\cdot(y^9-13y^8+70y^7-201y^6+328y^5-295y^4+123y^3-8y^2-3y-1)$ $\cdot(y^{16}-18y^{15}+\cdots-60y+16)$
c_9	$(y^9+3y^8+4y^7-12y^6-24y^5-11y^4+39y^3+15y^2-y-1)$ $\cdot(y^{16}+27y^{15}+\cdots-229y+1)(y^{20}+27y^{19}+\cdots+2672y+49)$