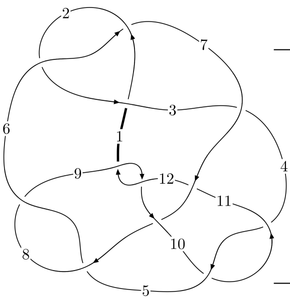
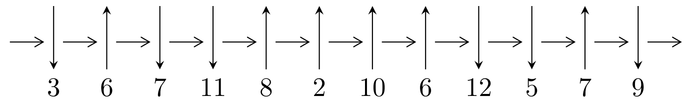
$12n_{0313}$ ($K12n_{0313}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -41545u^{14} + 62711u^{13} + \cdots + 83381b + 22577,$$
$$-56191u^{14} + 116417u^{13} + \cdots + 83381a + 99262,$$
$$u^{15} - 2u^{14} + u^{13} + 2u^{12} + 4u^{11} - 12u^{10} + 7u^9 + 4u^8 + 10u^7 - 28u^6 + 13u^5 + 3u^4 - 5u^3 + 5u^2 - 3u + 1\rangle$$
$$I_2^u = \langle -2u^8 - 6u^7 - 7u^6 + 4u^5 + 15u^4 + 8u^3 - 10u^2 + b - 15u - 5,$$
$$-2u^8 - 6u^7 - 8u^6 + 3u^5 + 15u^4 + 12u^3 - 9u^2 + a - 16u - 8,$$
$$u^9 + 3u^8 + 4u^7 - u^6 - 7u^5 - 6u^4 + 3u^3 + 8u^2 + 5u + 1\rangle$$
$$I_3^u = \langle -u^5 - 3u^4 - 3u^3 - u^2 + b - u - 1,\ -u^5 - 3u^4 - 3u^3 - u^2 + a - u - 1,\ u^6 + 3u^5 + 4u^4 + 3u^3 + 3u^2 + 2u +$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 30 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. $I^u_1 = \langle -41545u^{14} + 62711u^{13} + \cdots + 83381b + 22577,\ -5.62\times 10^4 u^{14} + 1.16\times 10^5 u^{13} + \cdots + 8.34\times 10^4 a + 9.93\times 10^4,\ u^{15} - 2u^{14} + \cdots - 3u + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.673907u^{14} - 1.39621u^{13} + \cdots + 1.05994u - 1.19046\\0.498255u^{14} - 0.752102u^{13} + \cdots + 1.28760u - 0.270769\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.828462u^{14} + 1.02276u^{13} + \cdots - 3.35724u + 0.995263\\0.862870u^{14} - 1.23046u^{13} + \cdots + 2.60733u - 1.50841\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.651875u^{14} - 1.12205u^{13} + \cdots + 0.0277281u - 0.890826\\0.0258572u^{14} - 0.477447u^{13} + \cdots + 0.528826u - 0.465442\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.0135522u^{14} - 0.409794u^{13} + \cdots - 1.03081u - 0.189216\\-0.240930u^{14} + 0.319773u^{13} + \cdots - 1.40889u + 0.529341\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-1.22448u^{14} + 1.65231u^{13} + \cdots - 4.89055u + 1.86951\\1.00210u^{14} - 1.42187u^{13} + \cdots + 2.69877u - 1.67090\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.582255u^{14} + 0.870858u^{13} + \cdots - 0.677157u + 1.06481\\0.560224u^{14} - 0.596707u^{13} + \cdots + 1.64494u - 0.765174\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.0220314u^{14} + 0.274151u^{13} + \cdots + 0.967786u + 0.299637\\0.560224u^{14} - 0.596707u^{13} + \cdots + 1.64494u - 0.765174\end{pmatrix}$$

$$a_4 = \begin{pmatrix}0.626018u^{14} - 0.644607u^{13} + \cdots - 0.501097u - 0.425385\\0.0258572u^{14} - 0.477447u^{13} + \cdots + 0.528826u - 0.465442\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.539284u^{14} - 0.621928u^{13} + \cdots + 1.09609u - 0.0144038\\-0.201365u^{14} + 0.389765u^{13} + \cdots + 0.0153152u + 0.510560\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{473234}{83381}u^{14} + \frac{693041}{83381}u^{13} + \cdots - \frac{1183972}{83381}u + \frac{479281}{83381}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{15} + 19u^{14} + \cdots - 13464u - 2209$
c_2, c_6	$u^{15} - u^{14} + \cdots + 52u - 47$
c_3	$u^{15} + 16u^{14} + \cdots + 571220u - 516295$
c_4, c_{10}	$u^{15} - 4u^{14} + \cdots + 124u - 11$
c_5, c_8	$u^{15} + 2u^{14} + \cdots - 193u - 131$
c_7	$u^{15} + 2u^{14} + \cdots - 3u - 1$
c_9, c_{12}	$u^{15} - 4u^{13} + \cdots + 95u - 23$
c_{11}	$u^{15} - 10u^{14} + \cdots + 1544u - 1961$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{15} + 27y^{14} + \cdots + 93308080y - 4879681$
c_2, c_6	$y^{15} + 19y^{14} + \cdots - 13464y - 2209$
c_3	$y^{15} - 268y^{14} + \cdots - 3653087564750y - 266560527025$
c_4, c_{10}	$y^{15} + 28y^{14} + \cdots + 22856y - 121$
c_5, c_8	$y^{15} - 26y^{14} + \cdots + 40393y - 17161$
c_7	$y^{15} - 2y^{14} + \cdots - y - 1$
c_9, c_{12}	$y^{15} - 8y^{14} + \cdots + 2493y - 529$
c_{11}	$y^{15} + 12y^{14} + \cdots - 79903546y - 3845521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.898089 + 0.122561I$ $a = 0.851665 + 0.429887I$ $b = -0.813523 - 0.857386I$	$8.21514 + 3.43846I$	$8.39038 - 0.14759I$
$u = 0.898089 - 0.122561I$ $a = 0.851665 - 0.429887I$ $b = -0.813523 + 0.857386I$	$8.21514 - 3.43846I$	$8.39038 + 0.14759I$
$u = -0.727637$ $a = 0.282926$ $b = 0.679431$	1.43379	8.32270
$u = -0.776726 + 1.064100I$ $a = 0.198165 + 1.273550I$ $b = -0.90296 + 1.50976I$	$1.61435 - 4.09120I$	$1.62171 + 2.87173I$
$u = -0.776726 - 1.064100I$ $a = 0.198165 - 1.273550I$ $b = -0.90296 - 1.50976I$	$1.61435 + 4.09120I$	$1.62171 - 2.87173I$
$u = -1.20953 + 0.78183I$ $a = -0.907869 - 0.069228I$ $b = -0.45282 - 1.51307I$	$3.12702 - 2.88040I$	$2.11466 + 1.70139I$
$u = -1.20953 - 0.78183I$ $a = -0.907869 + 0.069228I$ $b = -0.45282 + 1.51307I$	$3.12702 + 2.88040I$	$2.11466 - 1.70139I$
$u = -0.067561 + 0.552036I$ $a = 1.49637 - 1.52360I$ $b = -0.032891 - 0.581799I$	$-1.07742 - 1.06518I$	$-5.69949 + 4.71826I$
$u = -0.067561 - 0.552036I$ $a = 1.49637 + 1.52360I$ $b = -0.032891 + 0.581799I$	$-1.07742 + 1.06518I$	$-5.69949 - 4.71826I$
$u = 0.402433 + 0.347088I$ $a = -1.35119 + 0.98940I$ $b = 0.547092 + 0.828723I$	$0.07543 + 2.01877I$	$0.10830 - 4.30124I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.402433 - 0.347088I$ $a = -1.35119 - 0.98940I$ $b = 0.547092 - 0.828723I$	$0.07543 - 2.01877I$	$0.10830 + 4.30124I$
$u = 1.10914 + 1.03230I$ $a = -0.75781 + 1.35948I$ $b = 1.04371 + 1.80853I$	$-11.8911 + 11.0679I$	$2.10881 - 4.27183I$
$u = 1.10914 - 1.03230I$ $a = -0.75781 - 1.35948I$ $b = 1.04371 - 1.80853I$	$-11.8911 - 11.0679I$	$2.10881 + 4.27183I$
$u = 1.00798 + 1.14054I$ $a = 0.829204 - 0.703970I$ $b = 0.77167 - 1.94892I$	$-12.29490 - 3.15413I$	$1.69429 + 0.52217I$
$u = 1.00798 - 1.14054I$ $a = 0.829204 + 0.703970I$ $b = 0.77167 + 1.94892I$	$-12.29490 + 3.15413I$	$1.69429 - 0.52217I$

II.

$$\boldsymbol{I^u_2 = \langle -2u^8-6u^7+\cdots+b-5,\ -2u^8-6u^7+\cdots+a-8,\ u^9+3u^8+\cdots+5u+1\rangle}$$

(i) Arc colorings

$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_2 = \begin{pmatrix}2u^8+6u^7+8u^6-3u^5-15u^4-12u^3+9u^2+16u+8\\2u^8+6u^7+7u^6-4u^5-15u^4-8u^3+10u^2+15u+5\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_6 = \begin{pmatrix}4u^8+11u^7+13u^6-8u^5-27u^4-17u^3+18u^2+29u+12\\u^8+2u^7+2u^6-3u^5-4u^4-2u^3+5u^2+3u+1\end{pmatrix}$$

$$a_3 = \begin{pmatrix}7u^8+18u^7+21u^6-15u^5-42u^4-26u^3+31u^2+43u+18\\2u^7+4u^6+3u^5-7u^4-8u^3+10u+5\end{pmatrix}$$

$$a_1 = \begin{pmatrix}10u^8+25u^7+28u^6-23u^5-58u^4-33u^3+44u^2+58u+23\\-3u^8-6u^7-5u^6+10u^5+13u^4+2u^3-15u^2-10u\end{pmatrix}$$

$$a_5 = \begin{pmatrix}3u^8+9u^7+11u^6-5u^5-23u^4-15u^3+13u^2+25u+10\\2u^8+4u^7+4u^6-6u^5-8u^4-3u^3+10u^2+7u+2\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}9u^8+22u^7+23u^6-23u^5-51u^4-23u^3+42u^2+49u+15\\-4u^8-10u^7-10u^6+11u^5+24u^4+9u^3-20u^2-22u-5\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}5u^8+12u^7+13u^6-12u^5-27u^4-14u^3+22u^2+27u+10\\-4u^8-10u^7-10u^6+11u^5+24u^4+9u^3-20u^2-22u-5\end{pmatrix}$$

$$a_4 = \begin{pmatrix}7u^8+16u^7+17u^6-18u^5-35u^4-18u^3+31u^2+33u+13\\2u^7+4u^6+3u^5-7u^4-8u^3+10u+5\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-4u^8-11u^7-13u^6+8u^5+27u^4+17u^3-18u^2-29u-12\\-4u^8-9u^7-9u^6+11u^5+20u^4+8u^3-19u^2-18u-5\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -6u^8-13u^7-11u^6+19u^5+27u^4+5u^3-30u^2-16u-2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9-3u^8+6u^7-9u^6+12u^5-10u^4+3u^3+4u^2-4u+1$
c_2	$u^9-u^8+2u^7-u^6+2u^5+u^3+2u^2+1$
c_3	$u^9+u^8+5u^7+10u^6+u^5+u^4+12u^3+9u^2+2u+1$
c_4	$u^9+5u^7+u^6+7u^5+5u^4+u^3+6u^2-2u+1$
c_5	$u^9+3u^8+u^7-5u^6-5u^5+4u^4+9u^3-4u+1$
c_6	$u^9+u^8+2u^7+u^6+2u^5+u^3-2u^2-1$
c_7	$u^9+3u^8+4u^7-u^6-7u^5-6u^4+3u^3+8u^2+5u+1$
c_8	$u^9-3u^8+u^7+5u^6-5u^5-4u^4+9u^3-4u-1$
c_9	$u^9+2u^7-u^6-2u^4-u^3-2u^2-u-1$
c_{10}	$u^9+5u^7-u^6+7u^5-5u^4+u^3-6u^2-2u-1$
c_{11}	$u^9+6u^8+10u^7+4u^6+11u^5+23u^4+10u^3+6u^2+13u+5$
c_{12}	$u^9+2u^7+u^6+2u^4-u^3+2u^2-u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^9+3y^8+6y^7+9y^6+16y^5+2y^4+11y^3-20y^2+8y-1$
c_2, c_6	$y^9+3y^8+6y^7+9y^6+12y^5+10y^4+3y^3-4y^2-4y-1$
c_3	$y^9+9y^8+7y^7-68y^6+87y^5-139y^4+110y^3-35y^2-14y-1$
c_4, c_{10}	$y^9+10y^8+39y^7+71y^6+45y^5-43y^4-89y^3-50y^2-8y-1$
c_5, c_8	$y^9-7y^8+21y^7-41y^6+75y^5-120y^4+131y^3-80y^2+16y-1$
c_7	$y^9-y^8+8y^7-15y^6+23y^5-28y^4+37y^3-22y^2+9y-1$
c_9, c_{12}	$y^9+4y^8+4y^7-3y^6-10y^5-12y^4-9y^3-6y^2-3y-1$
c_{11}	$y^9-16y^8+74y^7-52y^6+91y^5-157y^4+70y^3-6y^2+109y-25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.072880 + 0.352289I$ $a = -1.056530 - 0.568290I$ $b = -0.054519 + 0.730817I$	$7.45475 + 1.27338I$	$5.64490 - 0.43727I$
$u = 1.072880 - 0.352289I$ $a = -1.056530 + 0.568290I$ $b = -0.054519 - 0.730817I$	$7.45475 - 1.27338I$	$5.64490 + 0.43727I$
$u = -0.692006 + 0.938897I$ $a = -0.73796 - 1.40715I$ $b = 0.497907 - 0.965644I$	$-0.18404 - 4.42541I$	$-3.46550 + 5.77063I$
$u = -0.692006 - 0.938897I$ $a = -0.73796 + 1.40715I$ $b = 0.497907 + 0.965644I$	$-0.18404 + 4.42541I$	$-3.46550 - 5.77063I$
$u = -0.654771 + 0.355732I$ $a = 1.208170 + 0.025665I$ $b = -0.976768 + 0.741048I$	$7.61597 - 3.90243I$	$0.00196 + 5.82113I$
$u = -0.654771 - 0.355732I$ $a = 1.208170 - 0.025665I$ $b = -0.976768 - 0.741048I$	$7.61597 + 3.90243I$	$0.00196 - 5.82113I$
$u = -0.396548$ $a = 3.50035$ $b = 0.810638$	0.137068	-0.229590
$u = -1.02783 + 1.24961I$ $a = 0.336146 + 1.247420I$ $b = -0.371939 + 1.075240I$	$3.13906 - 5.52199I$	$4.93343 + 8.47719I$
$u = -1.02783 - 1.24961I$ $a = 0.336146 - 1.247420I$ $b = -0.371939 - 1.075240I$	$3.13906 + 5.52199I$	$4.93343 - 8.47719I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^5 + 2u^4 - 2u^2 - u + 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^6+8y^4+17y^3+8y^2+1$
c_2, c_6, c_9 c_{12}	$y^6+4y^5+8y^4+9y^3+8y^2+4y+1$
c_3	$y^6-y^5-8y^4+2y^3+20y^2+8y+1$
c_4, c_{10}	$(y^3+3y^2+2y-1)^2$
c_5, c_8	$y^6-7y^5+17y^4-16y^3+10y^2-y+1$
c_7	$y^6-y^5+4y^4+5y^3+5y^2+2y+1$
c_{11}	$y^6+4y^5-14y^3-4y^2+15y+25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.319307 + 0.797712I$ $a = -0.425318 - 1.270190I$ $b = -0.425318 - 1.270190I$	$4.66906 + 2.82812I$	$2.68686 - 3.21164I$
$u = 0.319307 - 0.797712I$ $a = -0.425318 + 1.270190I$ $b = -0.425318 + 1.270190I$	$4.66906 - 2.82812I$	$2.68686 + 3.21164I$
$u = -0.500000 + 0.565544I$ $a = 0.662359 + 0.749187I$ $b = 0.662359 + 0.749187I$	0.531480	$1.235367 + 0.288289I$
$u = -0.500000 - 0.565544I$ $a = 0.662359 - 0.749187I$ $b = 0.662359 - 0.749187I$	0.531480	$1.235367 - 0.288289I$
$u = -1.31931 + 0.79771I$ $a = -0.237041 - 0.707911I$ $b = -0.237041 - 0.707911I$	$4.66906 - 2.82812I$	$9.57778 + 1.25753I$
$u = -1.31931 - 0.79771I$ $a = -0.237041 + 0.707911I$ $b = -0.237041 + 0.707911I$	$4.66906 + 2.82812I$	$9.57778 - 1.25753I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^6 - 4u^5 + 8u^4 - 9u^3 + 8u^2 - 4u + 1)$ $\cdot (u^9 - 3u^8 + 6u^7 - 9u^6 + 12u^5 - 10u^4 + 3u^3 + 4u^2 - 4u + 1)$ $\cdot (u^{15} + 19u^{14} + \cdots - 13464u - 2209)$
c_2	$(u^6 + 2u^4 + u^3 + 2u^2 + 1)(u^9 - u^8 + 2u^7 - u^6 + 2u^5 + u^3 + 2u^2 + 1)$ $\cdot (u^{15} - u^{14} + \cdots + 52u - 47)$
c_3	$(u^6 + 3u^5 + 4u^4 + 6u^3 + 6u^2 + 2u + 1)$ $\cdot (u^9 + u^8 + 5u^7 + 10u^6 + u^5 + u^4 + 12u^3 + 9u^2 + 2u + 1)$ $\cdot (u^{15} + 16u^{14} + \cdots + 571220u - 516295)$
c_4	$(u^3 + u^2 + 2u + 1)^2(u^9 + 5u^7 + u^6 + 7u^5 + 5u^4 + u^3 + 6u^2 - 2u + 1)$ $\cdot (u^{15} - 4u^{14} + \cdots + 124u - 11)$
c_5	$(u^6 - u^5 - 3u^4 + 4u^2 + 3u + 1)$ $\cdot (u^9 + 3u^8 + u^7 - 5u^6 - 5u^5 + 4u^4 + 9u^3 - 4u + 1)$ $\cdot (u^{15} + 2u^{14} + \cdots - 193u - 131)$
c_6	$(u^6 + 2u^4 - u^3 + 2u^2 + 1)(u^9 + u^8 + 2u^7 + u^6 + 2u^5 + u^3 - 2u^2 - 1)$ $\cdot (u^{15} - u^{14} + \cdots + 52u - 47)$
c_7	$(u^6 + 3u^5 + 4u^4 + 3u^3 + 3u^2 + 2u + 1)$ $\cdot (u^9 + 3u^8 + 4u^7 - u^6 - 7u^5 - 6u^4 + 3u^3 + 8u^2 + 5u + 1)$ $\cdot (u^{15} + 2u^{14} + \cdots - 3u - 1)$
c_8	$(u^6 + u^5 - 3u^4 + 4u^2 - 3u + 1)$ $\cdot (u^9 - 3u^8 + u^7 + 5u^6 - 5u^5 - 4u^4 + 9u^3 - 4u - 1)$ $\cdot (u^{15} + 2u^{14} + \cdots - 193u - 131)$
c_9	$(u^6 + 2u^4 - u^3 + 2u^2 + 1)(u^9 + 2u^7 - u^6 - 2u^4 - u^3 - 2u^2 - u - 1)$ $\cdot (u^{15} - 4u^{13} + \cdots + 95u - 23)$
c_{10}	$(u^3 - u^2 + 2u - 1)^2(u^9 + 5u^7 - u^6 + 7u^5 - 5u^4 + u^3 - 6u^2 - 2u - 1)$ $\cdot (u^{15} - 4u^{14} + \cdots + 124u - 11)$
c_{11}	$(u^6 + 2u^5 + 4u^4 + 6u^3 + 4u^2 + 5u + 5)$ $\cdot (u^9 + 6u^8 + 10u^7 + 4u^6 + 11u^5 + 23u^4 + 10u^3 + 6u^2 + 13u + 5)$ $\cdot (u^{15} - 10u^{14} + \cdots + 1544u - 1961)$
c_{12}	$(u^6 + 2u^4 + u^3 + 2u^2 + 1)(u^9 + 2u^7 + u^6 + 2u^4 - u^3 + 2u^2 - u + 1)$ $\cdot (u^{15} - 4u^{13} + \cdots + 95u - 23)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^6+8y^4+17y^3+8y^2+1)$ $\cdot(y^9+3y^8+6y^7+9y^6+16y^5+2y^4+11y^3-20y^2+8y-1)$ $\cdot(y^{15}+27y^{14}+\cdots+93308080y-4879681)$
c_2, c_6	$(y^6+4y^5+8y^4+9y^3+8y^2+4y+1)$ $\cdot(y^9+3y^8+6y^7+9y^6+12y^5+10y^4+3y^3-4y^2-4y-1)$ $\cdot(y^{15}+19y^{14}+\cdots-13464y-2209)$
c_3	$(y^6-y^5-8y^4+2y^3+20y^2+8y+1)$ $\cdot(y^9+9y^8+7y^7-68y^6+87y^5-139y^4+110y^3-35y^2-14y-1)$ $\cdot(y^{15}-268y^{14}+\cdots-3653087564750y-266560527025)$
c_4, c_{10}	$(y^3+3y^2+2y-1)^2$ $\cdot(y^9+10y^8+39y^7+71y^6+45y^5-43y^4-89y^3-50y^2-8y-1)$ $\cdot(y^{15}+28y^{14}+\cdots+22856y-121)$
c_5, c_8	$(y^6-7y^5+17y^4-16y^3+10y^2-y+1)$ $\cdot(y^9-7y^8+21y^7-41y^6+75y^5-120y^4+131y^3-80y^2+16y-1)$ $\cdot(y^{15}-26y^{14}+\cdots+40393y-17161)$
c_7	$(y^6-y^5+4y^4+5y^3+5y^2+2y+1)$ $\cdot(y^9-y^8+8y^7-15y^6+23y^5-28y^4+37y^3-22y^2+9y-1)$ $\cdot(y^{15}-2y^{14}+\cdots-y-1)$
c_9, c_{12}	$(y^6+4y^5+8y^4+9y^3+8y^2+4y+1)$ $\cdot(y^9+4y^8+4y^7-3y^6-10y^5-12y^4-9y^3-6y^2-3y-1)$ $\cdot(y^{15}-8y^{14}+\cdots+2493y-529)$
c_{11}	$(y^6+4y^5-14y^3-4y^2+15y+25)$ $\cdot(y^9-16y^8+74y^7-52y^6+91y^5-157y^4+70y^3-6y^2+109y-25)$ $\cdot(y^{15}+12y^{14}+\cdots-79903546y-3845521)$