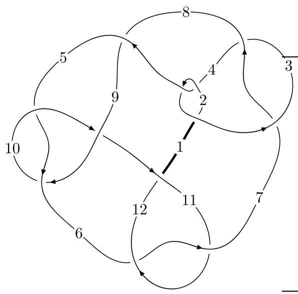
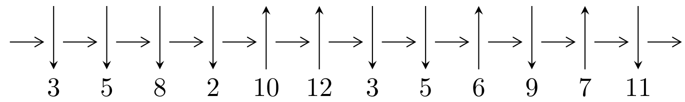
$12n_{0156}$ ($K12n_{0156}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & u^9 + u^8 + 5u^7 + 3u^6 + 9u^5 + 7u^4 + 6u^3 + 5u^2 + 4b + 3, \\
& -u^9 + 3u^8 - 5u^7 + 5u^6 - 5u^5 + u^4 + 2u^3 - 13u^2 + 8a + 8u - 11, \\
& u^{10} + 4u^8 + 2u^7 + 6u^6 + 6u^5 + 3u^4 + 7u^3 - u^2 + 3u + 1\rangle \\
I_2^u = \langle & b + 1,\ -u^3 + u^2 + 2a + 1,\ u^4 + u^2 + u + 1\rangle \\
I_3^u = \langle & -4u^{15} + 18u^{14} + \cdots + 33b + 38,\ 29u^{15} - 48u^{14} + \cdots + 33a - 61,\ u^{16} - 2u^{15} + \cdots - 2u + 1\rangle \\
I_4^u = \langle & b + 1,\ u^5 - u^4 + u^3 - u^2 + a + u,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 36 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.

$$\boldsymbol{I_1^u = \langle u^9+u^8+\cdots+4b+3,\ -u^9+3u^8+\cdots+8a-11,\ u^{10}+4u^8+\cdots+3u+1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}\frac{1}{8}u^9 - \frac{3}{8}u^8 + \cdots - u + \frac{11}{8}\\ -\frac{1}{4}u^9 - \frac{1}{4}u^8 + \cdots - \frac{5}{4}u^2 - \frac{3}{4}\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-\frac{1}{8}u^9 - \frac{5}{8}u^8 + \cdots - u + \frac{5}{8}\\ -\frac{1}{4}u^9 - \frac{1}{4}u^8 + \cdots - \frac{5}{4}u^2 - \frac{3}{4}\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^9 - 3u^7 - 2u^6 - 4u^5 - 4u^4 - 3u^2\\ -u^9 - 2u^7 - 2u^6 - 2u^5 - 4u^4 + 2u^3 - 3u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}\frac{13}{8}u^9 - \frac{7}{8}u^8 + \cdots - 2u + \frac{7}{8}\\ \frac{3}{4}u^9 - \frac{1}{4}u^8 + \cdots + \frac{3}{4}u^2 - \frac{3}{4}\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u^3\\u^5+u^3+u\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^3\\u^3+u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^8 + 3u^6 + 2u^5 + 3u^4 + 4u^3 - u^2 + 3u\\ u^8 + 3u^6 + 2u^5 + 4u^4 + 4u^3 + 3u + 1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-u^9 - 3u^7 - 2u^6 - 3u^5 - 4u^4 - 3u^2\\ -u^9 - 3u^7 - 2u^6 - 3u^5 - 4u^4 + u^3 - 3u^2\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -\frac{33}{16}u^9 - \frac{53}{16}u^8 - \frac{141}{16}u^7 - \frac{227}{16}u^6 - \frac{325}{16}u^5 - \frac{367}{16}u^4 - \frac{159}{8}u^3 - \frac{237}{16}u^2 - 6u - \frac{147}{16}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{10}+17u^9+\cdots+353u+16$
c_2, c_4	$u^{10}-3u^9-4u^8+13u^7+22u^6-70u^5+56u^4-7u^3-47u^2+27u-4$
c_3, c_7	$u^{10}-3u^9+\cdots-48u-64$
c_5, c_6, c_9 c_{11}	$u^{10}+4u^8+2u^7+6u^6+6u^5+3u^4+7u^3-u^2+3u+1$
c_8	$u^{10}+6u^9+9u^8-6u^7-21u^6-14u^5+21u^3+13u^2+16u+4$
c_{10}, c_{12}	$u^{10}+8u^9+\cdots-11u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{10} - 13y^9 + \cdots - 56161y + 256$
c_2, c_4	$y^{10} - 17y^9 + \cdots - 353y + 16$
c_3, c_7	$y^{10} - 21y^9 + \cdots + 16128y + 4096$
c_5, c_6, c_9 c_{11}	$y^{10} + 8y^9 + \cdots - 11y + 1$
c_8	$y^{10} - 18y^9 + \cdots - 152y + 16$
c_{10}, c_{12}	$y^{10} - 8y^9 + \cdots - 191y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.10322$ $a=\ \ 0.0897722$ $b=\ \ 2.01806$	-13.1809	-5.01890
$u=-0.434341+1.157890I$ $a=\ \ 0.168075-0.547483I$ $b=\ \ 0.424180-0.920028I$	$-3.22150-6.17796I$	$-7.18871+5.57381I$
$u=-0.434341-1.157890I$ $a=\ \ 0.168075+0.547483I$ $b=\ \ 0.424180+0.920028I$	$-3.22150+6.17796I$	$-7.18871-5.57381I$
$u=\ \ 0.453609+0.609493I$ $a=\ \ 0.755807+0.185749I$ $b=\ \ 0.306434-0.019942I$	$0.54459+1.46281I$	$2.01320-4.52195I$
$u=\ \ 0.453609-0.609493I$ $a=\ \ 0.755807-0.185749I$ $b=\ \ 0.306434+0.019942I$	$0.54459-1.46281I$	$2.01320+4.52195I$
$u=\ \ 0.126773+1.317690I$ $a=-1.87389+0.33187I$ $b=-1.95902+1.19918I$	$-9.42139+3.00890I$	$-13.74651-2.98751I$
$u=\ \ 0.126773-1.317690I$ $a=-1.87389-0.33187I$ $b=-1.95902-1.19918I$	$-9.42139-3.00890I$	$-13.74651+2.98751I$
$u=\ \ 0.53944+1.37745I$ $a=\ \ 1.77401+1.11600I$ $b=\ \ 2.12782-0.47355I$	$17.6402+11.6714I$	$-10.01565-5.34252I$
$u=\ \ 0.53944-1.37745I$ $a=\ \ 1.77401-1.11600I$ $b=\ \ 2.12782+0.47355I$	$17.6402-11.6714I$	$-10.01565+5.34252I$
$u=-0.267745$ $a=\ \ 1.76223$ $b=-0.816874$	-1.19281	-8.35580

II. $I_2^u = \langle b+1,\ -u^3+u^2+2a+1,\ u^4+u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{11}{4}u^3 - \frac{21}{4}u^2 - \frac{1}{2}u - \frac{31}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^4$
c_3, c_7	y^4
c_5, c_6, c_9 c_{11}	$y^4 + 2y^3 + 3y^2 + y + 1$
c_8	$y^4 - y^3 + 2y^2 + 7y + 4$
c_{10}, c_{12}	$y^4 + 2y^3 + 7y^2 + 5y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = -0.278726 + 0.483420I$ $b = -1.00000$	$-0.66484 - 1.39709I$	$-6.15099 + 3.96898I$
$u = -0.547424 - 0.585652I$ $a = -0.278726 - 0.483420I$ $b = -1.00000$	$-0.66484 + 1.39709I$	$-6.15099 - 3.96898I$
$u = 0.547424 + 1.120870I$ $a = -0.971274 - 0.813859I$ $b = -1.00000$	$-4.26996 + 7.64338I$	$-8.22401 - 8.10462I$
$u = 0.547424 - 1.120870I$ $a = -0.971274 + 0.813859I$ $b = -1.00000$	$-4.26996 - 7.64338I$	$-8.22401 + 8.10462I$

III. $I_3^u = \langle -4u^{15} + 18u^{14} + \cdots + 33b + 38,\ 29u^{15} - 48u^{14} + \cdots + 33a - 61,\ u^{16} - 2u^{15} + \cdots - 2u + 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.878788u^{15} + 1.45455u^{14} + \cdots - 0.636364u + 1.84848 \\ 0.121212u^{15} - 0.545455u^{14} + \cdots + 0.363636u - 1.15152 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.757576u^{15} + 0.909091u^{14} + \cdots - 0.272727u + 0.696970 \\ 0.121212u^{15} - 0.545455u^{14} + \cdots + 0.363636u - 1.15152 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.27273u^{15} - 2.72727u^{14} + \cdots + 3.81818u - 2.09091 \\ 1.78788u^{15} - 1.54545u^{14} + \cdots + 0.363636u - 1.48485 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.393939u^{15} + 1.27273u^{14} + \cdots - 0.181818u + 1.24242 \\ 1.36364u^{15} - 1.63636u^{14} + \cdots + 2.09091u - 2.45455 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0909091u^{15} - 0.0909091u^{14} + \cdots + 2.72727u + 1.36364 \\ 1.21212u^{15} - 1.45455u^{14} + \cdots + 1.63636u - 2.51515 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.24242u^{15} - 3.09091u^{14} + \cdots + 4.72727u - 3.30303 \\ -2.75758u^{15} + 2.90909u^{14} + \cdots - 3.27273u + 2.69697 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{19}{11}u^{15} + \frac{25}{11}u^{14} - \frac{135}{11}u^{13} + \frac{153}{11}u^{12} - \frac{410}{11}u^{11} + \frac{412}{11}u^{10} - \frac{603}{11}u^9 + \frac{543}{11}u^8 - 29u^7 + \frac{303}{11}u^6 + \frac{127}{11}u^5 + \frac{60}{11}u^4 + \frac{67}{11}u^3 + \frac{56}{11}u^2 - \frac{90}{11}u - \frac{34}{11}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^8 + 16u^7 + 98u^6 + 283u^5 + 381u^4 + 191u^3 - 45u^2 + 10u + 1)^2$
c_2, c_4	$(u^8 - 4u^7 + 13u^5 - 3u^4 - 15u^3 + 3u^2 - 2u - 1)^2$
c_3, c_7	$(u^8 + u^7 - 10u^6 - 7u^5 + 19u^4 - 23u^3 - 12u + 8)^2$
c_5, c_6, c_9 c_{11}	$u^{16} - 2u^{15} + \cdots - 2u + 1$
c_8	$(u^8 - 2u^7 - 7u^6 + 12u^5 + 7u^4 - 2u^3 - 2u^2 + 3u - 1)^2$
c_{10}, c_{12}	$u^{16} + 10u^{15} + \cdots + 14u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^8 - 60y^7 + \cdots - 190y + 1)^2$
c_2, c_4	$(y^8 - 16y^7 + 98y^6 - 283y^5 + 381y^4 - 191y^3 - 45y^2 - 10y + 1)^2$
c_3, c_7	$(y^8 - 21y^7 + 152y^6 - 383y^5 + 79y^4 - 857y^3 - 248y^2 - 144y + 64)^2$
c_5, c_6, c_9 c_{11}	$y^{16} + 10y^{15} + \cdots + 14y^2 + 1$
c_8	$(y^8 - 18y^7 + 111y^6 - 254y^5 + 135y^4 - 90y^3 + 2y^2 - 5y + 1)^2$
c_{10}, c_{12}	$y^{16} - 10y^{15} + \cdots + 28y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.381176+0.988501I$ $a = 0.400335+0.134981I$ $b = 0.202560+0.429200I$	$-0.54882+2.12062I$	$-1.41411-2.85603I$
$u = 0.381176-0.988501I$ $a = 0.400335-0.134981I$ $b = 0.202560-0.429200I$	$-0.54882-2.12062I$	$-1.41411+2.85603I$
$u = -0.175038+1.044950I$ $a = 0.881139+0.709579I$ $b = -0.266855$	-3.96569	$-10.71257+0.I$
$u = -0.175038-1.044950I$ $a = 0.881139-0.709579I$ $b = -0.266855$	-3.96569	$-10.71257+0.I$
$u = 1.097050+0.006514I$ $a = 0.0528548+0.1140410I$ $b = 2.08865-0.23775I$	$-17.5075+5.8605I$	$-7.51154-2.72065I$
$u = 1.097050-0.006514I$ $a = 0.0528548-0.1140410I$ $b = 2.08865+0.23775I$	$-17.5075-5.8605I$	$-7.51154+2.72065I$
$u = -0.087856+1.180370I$ $a = -1.94399+0.56029I$ $b = -1.251300-0.394571I$	$-4.42998-1.32248I$	$-7.15537+1.48485I$
$u = -0.087856-1.180370I$ $a = -1.94399-0.56029I$ $b = -1.251300+0.394571I$	$-4.42998+1.32248I$	$-7.15537-1.48485I$
$u = -0.579676+0.232048I$ $a = 0.915955-0.352378I$ $b = 0.202560+0.429200I$	$-0.54882+2.12062I$	$-1.41411-2.85603I$
$u = -0.579676-0.232048I$ $a = 0.915955+0.352378I$ $b = 0.202560-0.429200I$	$-0.54882-2.12062I$	$-1.41411+2.85603I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.54916 + 1.38012I$ $a = 1.49564 + 1.24562I$ $b = 2.18705$	17.6846	$-10.12539 + 0.I$
$u = 0.54916 - 1.38012I$ $a = 1.49564 - 1.24562I$ $b = 2.18705$	17.6846	$-10.12539 + 0.I$
$u = -0.54464 + 1.38261I$ $a = 1.62067 - 1.13338I$ $b = 2.08865 + 0.23775I$	$-17.5075 - 5.8605I$	$-7.51154 + 2.72065I$
$u = -0.54464 - 1.38261I$ $a = 1.62067 + 1.13338I$ $b = 2.08865 - 0.23775I$	$-17.5075 + 5.8605I$	$-7.51154 - 2.72065I$
$u = 0.359826 + 0.343977I$ $a = 2.07740 - 0.65398I$ $b = -1.251300 + 0.394571I$	$-4.42998 + 1.32248I$	$-7.15537 - 1.48485I$
$u = 0.359826 - 0.343977I$ $a = 2.07740 + 0.65398I$ $b = -1.251300 - 0.394571I$	$-4.42998 - 1.32248I$	$-7.15537 + 1.48485I$

IV.

$\boldsymbol{I_4^u = \langle b+1,\ u^5-u^4+u^3-u^2+a+u,\ u^6-u^5+2u^4-2u^3+2u^2-2u+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= u^5+5u^3-u^2+5u-10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.498832+1.001300I$ $a=-0.767394+0.943705I$ $b=-1.00000$	$-1.91067-2.82812I$	$-6.15260+3.54173I$
$u=-0.498832-1.001300I$ $a=-0.767394-0.943705I$ $b=-1.00000$	$-1.91067+2.82812I$	$-6.15260-3.54173I$
$u=\ \ 0.284920+1.115140I$ $a=-1.37744-1.47725I$ $b=-1.00000$	-6.04826	$-10.69479+0.I$
$u=\ \ 0.284920-1.115140I$ $a=-1.37744+1.47725I$ $b=-1.00000$	-6.04826	$-10.69479+0.I$
$u=\ \ 0.713912+0.305839I$ $a=-0.355167-0.198843I$ $b=-1.00000$	$-1.91067-2.82812I$	$-6.15260+3.54173I$
$u=\ \ 0.713912-0.305839I$ $a=-0.355167+0.198843I$ $b=-1.00000$	$-1.91067+2.82812I$	$-6.15260-3.54173I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^{10}$ $\cdot(u^8+16u^7+98u^6+283u^5+381u^4+191u^3-45u^2+10u+1)^2$ $\cdot(u^{10}+17u^9+\cdots+353u+16)$
c_2	$(u-1)^{10}(u^8-4u^7+13u^5-3u^4-15u^3+3u^2-2u-1)^2$ $\cdot(u^{10}-3u^9-4u^8+13u^7+22u^6-70u^5+56u^4-7u^3-47u^2+27u-4)$
c_3, c_7	$u^{10}(u^8+u^7-10u^6-7u^5+19u^4-23u^3-12u+8)^2$ $\cdot(u^{10}-3u^9+\cdots-48u-64)$
c_4	$(u+1)^{10}(u^8-4u^7+13u^5-3u^4-15u^3+3u^2-2u-1)^2$ $\cdot(u^{10}-3u^9-4u^8+13u^7+22u^6-70u^5+56u^4-7u^3-47u^2+27u-4)$
c_5, c_6	$(u^4+u^2+u+1)(u^6-u^5+2u^4-2u^3+2u^2-2u+1)$ $\cdot(u^{10}+4u^8+2u^7+6u^6+6u^5+3u^4+7u^3-u^2+3u+1)$ $\cdot(u^{16}-2u^{15}+\cdots-2u+1)$
c_8	$(u^3+u^2-1)^2(u^4-3u^3+4u^2-3u+2)$ $\cdot(u^8-2u^7-7u^6+12u^5+7u^4-2u^3-2u^2+3u-1)^2$ $\cdot(u^{10}+6u^9+9u^8-6u^7-21u^6-14u^5+21u^3+13u^2+16u+4)$
c_9, c_{11}	$(u^4+u^2-u+1)(u^6+u^5+2u^4+2u^3+2u^2+2u+1)$ $\cdot(u^{10}+4u^8+2u^7+6u^6+6u^5+3u^4+7u^3-u^2+3u+1)$ $\cdot(u^{16}-2u^{15}+\cdots-2u+1)$
c_{10}, c_{12}	$(u^4+2u^3+3u^2+u+1)(u^6+3u^5+4u^4+2u^3+1)$ $\cdot(u^{10}+8u^9+\cdots-11u+1)(u^{16}+10u^{15}+\cdots+14u^2+1)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{10})(y^8-60y^7+\cdots-190y+1)^2$ $\cdot(y^{10}-13y^9+\cdots-56161y+256)$
c_2, c_4	$(y-1)^{10}$ $\cdot(y^8-16y^7+98y^6-283y^5+381y^4-191y^3-45y^2-10y+1)^2$ $\cdot(y^{10}-17y^9+\cdots-353y+16)$
c_3, c_7	y^{10} $\cdot(y^8-21y^7+152y^6-383y^5+79y^4-857y^3-248y^2-144y+64)^2$ $\cdot(y^{10}-21y^9+\cdots+16128y+4096)$
c_5, c_6, c_9 c_{11}	$(y^4+2y^3+3y^2+y+1)(y^6+3y^5+4y^4+2y^3+1)$ $\cdot(y^{10}+8y^9+\cdots-11y+1)(y^{16}+10y^{15}+\cdots+14y^2+1)$
c_8	$(y^3-y^2+2y-1)^2(y^4-y^3+2y^2+7y+4)$ $\cdot(y^8-18y^7+111y^6-254y^5+135y^4-90y^3+2y^2-5y+1)^2$ $\cdot(y^{10}-18y^9+\cdots-152y+16)$
c_{10}, c_{12}	$(y^4+2y^3+7y^2+5y+1)(y^6-y^5+4y^4-2y^3+8y^2+1)$ $\cdot(y^{10}-8y^9+\cdots-191y+1)(y^{16}-10y^{15}+\cdots+28y+1)$