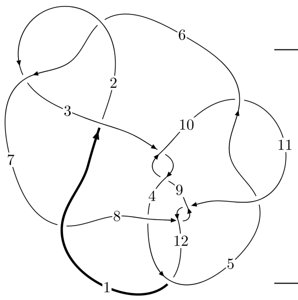
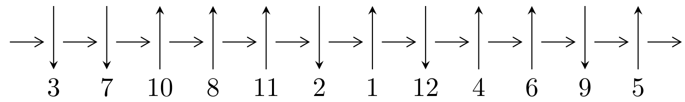
$12a_{0625}$ ($K12a_{0625}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -1457u^{41} - 15255u^{40} + \cdots + 16b - 57360,\ -3585u^{41} - 36521u^{40} + \cdots + 32a - 109328, \\
&\quad u^{42} + 11u^{41} + \cdots + 336u + 32\rangle \\
I_2^u &= \langle 3.42256 \times 10^{57}a^9u^8 - 3.62814 \times 10^{57}a^8u^8 + \cdots + 3.06417 \times 10^{58}a + 2.10624 \times 10^{59}, \\
&\quad -a^9u^8 + 4a^8u^8 + \cdots + 163a + 35,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1\rangle \\
I_3^u &= \langle -2u^{27} - u^{26} + \cdots + b - 6,\ 6u^{27} - 2u^{26} + \cdots + a - 4,\ u^{28} - 8u^{26} + \cdots - 5u^2 + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 160 representations.

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[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. $I^u_1 = \langle -1457u^{41} - 15255u^{40} + \cdots + 16b - 57360,\ -3585u^{41} - 36521u^{40} + \cdots + 32a - 109328,\ u^{42} + 11u^{41} + \cdots + 336u + 32\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}112.031u^{41} + 1141.28u^{40} + \cdots + 33519u + 3416.50\\91.0625u^{41} + 953.438u^{40} + \cdots + 34226u + 3585\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-20u^{41} - 211u^{40} + \cdots - \frac{10527}{2}u - \frac{1023}{2}\\-9u^{41} - \frac{233}{2}u^{40} + \cdots - \frac{12415}{2}u - 640\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2 + 1\\-u^4\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^5 - 2u^3 + u\\u^7 - u^5 + u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}50.5313u^{41} + 542.531u^{40} + \cdots + 19805u + 2046.50\\\frac{473}{16}u^{41} + \frac{5675}{16}u^{40} + \cdots + 20512u + 2215\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-\frac{29}{2}u^{41} - 140u^{40} + \cdots - \frac{6575}{2}u - \frac{671}{2}\\-\frac{51}{2}u^{41} - \frac{469}{2}u^{40} + \cdots - \frac{4687}{2}u - 208\end{pmatrix}$$
$$a_9 = \begin{pmatrix}\frac{455}{8}u^{41} + \frac{9607}{16}u^{40} + \cdots + 21813u + 2262\\\frac{143}{16}u^{41} + \frac{1979}{16}u^{40} + \cdots + 11268u + 1222\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}\frac{75}{4}u^{41} + 193u^{40} + \cdots + \frac{21905}{4}u + 553\\-\frac{9}{4}u^{41} - \frac{27}{2}u^{40} + \cdots + 2904u + 352\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{9}{2}u^{41} - 114u^{40} + \cdots - 16628u - 1806$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{42}+21u^{41}+\cdots-256u+1024$
c_2, c_6	$u^{42}-11u^{41}+\cdots-336u+32$
c_3, c_5, c_9 c_{10}	$u^{42}+17u^{40}+\cdots-u+1$
c_4, c_{12}	$u^{42}-3u^{40}+\cdots+u+1$
c_7	$u^{42}-30u^{41}+\cdots-6179216u+430496$
c_8, c_{11}	$u^{42}-24u^{41}+\cdots-10752u+512$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{42} - y^{41} + \cdots + 9240576y + 1048576$
c_2, c_6	$y^{42} - 21y^{41} + \cdots + 256y + 1024$
c_3, c_5, c_9 c_{10}	$y^{42} + 34y^{41} + \cdots - 7y + 1$
c_4, c_{12}	$y^{42} - 6y^{41} + \cdots - 27y + 1$
c_7	$y^{42} + 20y^{41} + \cdots + 1352203186432y + 185326806016$
c_8, c_{11}	$y^{42} + 24y^{41} + \cdots + 262144y + 262144$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.674235 + 0.795277I$ $a = 0.080408 + 1.328660I$ $b = 1.110860 + 0.831880I$	$0.40327 - 5.88245I$	$2.00000 + 4.81824I$
$u = -0.674235 - 0.795277I$ $a = 0.080408 - 1.328660I$ $b = 1.110860 - 0.831880I$	$0.40327 + 5.88245I$	$2.00000 - 4.81824I$
$u = -0.897205 + 0.535743I$ $a = 1.61355 - 0.35780I$ $b = 1.25600 - 1.18547I$	$3.86650 + 2.93954I$	$6.87204 - 5.52863I$
$u = -0.897205 - 0.535743I$ $a = 1.61355 + 0.35780I$ $b = 1.25600 + 1.18547I$	$3.86650 - 2.93954I$	$6.87204 + 5.52863I$
$u = -0.196032 + 0.924569I$ $a = -0.899740 + 0.858235I$ $b = 0.617120 + 1.000110I$	$-7.95327 - 7.20205I$	$-2.30272 + 4.84345I$
$u = -0.196032 - 0.924569I$ $a = -0.899740 - 0.858235I$ $b = 0.617120 - 1.000110I$	$-7.95327 + 7.20205I$	$-2.30272 - 4.84345I$
$u = -0.513181 + 0.939058I$ $a = 0.000683 - 0.960818I$ $b = -0.901913 - 0.493715I$	$-0.94029 + 1.63835I$	$5.14240 - 3.16816I$
$u = -0.513181 - 0.939058I$ $a = 0.000683 + 0.960818I$ $b = -0.901913 + 0.493715I$	$-0.94029 - 1.63835I$	$5.14240 + 3.16816I$
$u = -0.199922 + 0.890800I$ $a = 1.11885 - 0.92567I$ $b = -0.600904 - 1.181730I$	$-4.7341 - 13.6105I$	$0.87068 + 7.00952I$
$u = -0.199922 - 0.890800I$ $a = 1.11885 + 0.92567I$ $b = -0.600904 + 1.181730I$	$-4.7341 + 13.6105I$	$0.87068 - 7.00952I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.032180 + 0.369212I$ $a = 0.212287 + 0.051646I$ $b = -0.200051 - 0.131687I$	$-1.81583 - 1.72148I$	0
$u = 1.032180 - 0.369212I$ $a = 0.212287 - 0.051646I$ $b = -0.200051 + 0.131687I$	$-1.81583 + 1.72148I$	0
$u = 1.079330 + 0.256072I$ $a = -0.186841 + 0.199670I$ $b = 0.252792 - 0.167664I$	$-0.789550 + 0.559793I$	0
$u = 1.079330 - 0.256072I$ $a = -0.186841 - 0.199670I$ $b = 0.252792 + 0.167664I$	$-0.789550 - 0.559793I$	0
$u = -0.631100 + 0.584325I$ $a = -1.06958 + 1.01232I$ $b = -0.083490 + 1.263860I$	$4.63519 + 1.52738I$	$8.88253 - 1.45936I$
$u = -0.631100 - 0.584325I$ $a = -1.06958 - 1.01232I$ $b = -0.083490 - 1.263860I$	$4.63519 - 1.52738I$	$8.88253 + 1.45936I$
$u = -0.915481 + 0.700428I$ $a = 1.43441 + 0.67283I$ $b = 1.78445 - 0.38874I$	$-0.32564 + 11.42950I$	0
$u = -0.915481 - 0.700428I$ $a = 1.43441 - 0.67283I$ $b = 1.78445 + 0.38874I$	$-0.32564 - 11.42950I$	0
$u = -1.056260 + 0.515954I$ $a = -0.750294 + 0.590460I$ $b = -0.487854 + 1.010800I$	$-0.73191 + 4.82324I$	0
$u = -1.056260 - 0.515954I$ $a = -0.750294 - 0.590460I$ $b = -0.487854 - 1.010800I$	$-0.73191 - 4.82324I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.172613 + 0.773707I$ $a = 0.706336 + 0.041146I$ $b = -0.090088 - 0.553599I$	$0.31212 - 1.94553I$	$1.90117 - 0.77414I$
$u = 0.172613 - 0.773707I$ $a = 0.706336 - 0.041146I$ $b = -0.090088 + 0.553599I$	$0.31212 + 1.94553I$	$1.90117 + 0.77414I$
$u = -0.328546 + 0.702460I$ $a = -0.763896 - 0.602422I$ $b = -0.674152 + 0.338684I$	$3.37169 - 3.11074I$	$7.82977 + 0.59012I$
$u = -0.328546 - 0.702460I$ $a = -0.763896 + 0.602422I$ $b = -0.674152 - 0.338684I$	$3.37169 + 3.11074I$	$7.82977 - 0.59012I$
$u = -1.105800 + 0.547612I$ $a = 0.008344 - 0.999378I$ $b = -0.538045 - 1.109690I$	$1.12490 + 7.89388I$	0
$u = -1.105800 - 0.547612I$ $a = 0.008344 + 0.999378I$ $b = -0.538045 + 1.109690I$	$1.12490 - 7.89388I$	0
$u = -1.034310 + 0.749961I$ $a = -1.035710 - 0.489167I$ $b = -1.43809 + 0.27079I$	$-2.48081 + 4.43896I$	0
$u = -1.034310 - 0.749961I$ $a = -1.035710 + 0.489167I$ $b = -1.43809 - 0.27079I$	$-2.48081 - 4.43896I$	0
$u = 1.273780 + 0.320998I$ $a = 0.339446 + 0.408725I$ $b = -0.301180 - 0.629587I$	$-9.45635 + 9.55250I$	0
$u = 1.273780 - 0.320998I$ $a = 0.339446 - 0.408725I$ $b = -0.301180 + 0.629587I$	$-9.45635 - 9.55250I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.399664 + 0.544104I$ $a = 0.909536 - 0.090667I$ $b = 0.314177 - 0.531118I$	$1.145080 - 0.501768I$	$8.23694 + 2.15140I$
$u = -0.399664 - 0.544104I$ $a = 0.909536 + 0.090667I$ $b = 0.314177 + 0.531118I$	$1.145080 + 0.501768I$	$8.23694 - 2.15140I$
$u = -1.210730 + 0.556462I$ $a = -1.97220 + 0.64883I$ $b = -2.02675 + 1.88302I$	$-7.7808 + 18.8802I$	0
$u = -1.210730 - 0.556462I$ $a = -1.97220 - 0.64883I$ $b = -2.02675 - 1.88302I$	$-7.7808 - 18.8802I$	0
$u = 1.306310 + 0.316617I$ $a = -0.263807 - 0.388277I$ $b = 0.221677 + 0.590735I$	$-12.84150 + 2.96984I$	0
$u = 1.306310 - 0.316617I$ $a = -0.263807 + 0.388277I$ $b = 0.221677 - 0.590735I$	$-12.84150 - 2.96984I$	0
$u = -1.223530 + 0.563220I$ $a = 1.77160 - 0.50494I$ $b = 1.88321 - 1.61561I$	$-11.0732 + 12.5871I$	0
$u = -1.223530 - 0.563220I$ $a = 1.77160 + 0.50494I$ $b = 1.88321 + 1.61561I$	$-11.0732 - 12.5871I$	0
$u = 1.342730 + 0.165815I$ $a = 0.065422 + 0.397087I$ $b = -0.022002 - 0.544029I$	$-7.39787 - 4.96712I$	0
$u = 1.342730 - 0.165815I$ $a = 0.065422 - 0.397087I$ $b = -0.022002 + 0.544029I$	$-7.39787 + 4.96712I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.32094 + 0.50553I$ $a = -1.068810 + 0.664801I$ $b = -1.07576 + 1.41848I$	$-4.11032 + 6.77393I$	0
$u = -1.32094 - 0.50553I$ $a = -1.068810 - 0.664801I$ $b = -1.07576 - 1.41848I$	$-4.11032 - 6.77393I$	0

II. $\boldsymbol{I_2^u = \langle 3.42 \times 10^{57} a^9 u^8 - 3.63 \times 10^{57} a^8 u^8 + \cdots + 3.06 \times 10^{58} a + 2.11 \times 10^{59},\ -a^9 u^8 + 4a^8 u^8 + \cdots + 163a + 35,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} a \\ -0.0712580a^9u^8 + 0.0755383a^8u^8 + \cdots - 0.637963a - 4.38520 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0584008a^9u^8 - 0.0300572a^8u^8 + \cdots - 5.51490a + 0.377013 \\ 0.0549383a^9u^8 - 0.0452833a^8u^8 + \cdots - 7.58208a - 1.17835 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ u^7 - u^5 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.00108894a^9u^8 + 0.0965666a^8u^8 + \cdots - 2.75887a - 0.950595 \\ -0.0701691a^9u^8 + 0.172105a^8u^8 + \cdots - 4.39683a - 5.33580 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.109055a^9u^8 + 0.108963a^8u^8 + \cdots - 2.14889a - 1.68427 \\ 0.0310586a^9u^8 + 0.0638539a^8u^8 + \cdots - 5.80623a - 0.240168 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.00526858a^9u^8 + 0.00207832a^8u^8 + \cdots + 4.33867a + 4.07290 \\ -0.000848598a^9u^8 - 0.0162695a^8u^8 + \cdots + 16.4296a + 6.90589 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.120100a^9u^8 + 0.0400133a^8u^8 + \cdots - 0.561264a - 1.82874 \\ -0.0635614a^9u^8 + 0.00692470a^8u^8 + \cdots - 9.08400a - 5.46049 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0987063a^9u^8 + 0.116009a^8u^8 + \cdots - 19.0748a - 6.36312$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)^{10}$
c_2, c_6	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^{10}$
c_3, c_5, c_9 c_{10}	$u^{90}+u^{89}+\cdots+7431322u+1174423$
c_4, c_{12}	$u^{90}-5u^{89}+\cdots+46u+7$
c_7	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^{10}$
c_8, c_{11}	$(u^5+u^4+2u^3+u^2+u+1)^{18}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)^{10}$
c_2, c_6	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^{10}$
c_3, c_5, c_9 c_{10}	$y^{90} + 75y^{89} + \cdots + 22867447038168y + 1379269382929$
c_4, c_{12}	$y^{90} + 15y^{89} + \cdots + 3680y + 49$
c_7	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^{10}$
c_8, c_{11}	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^{18}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$ $a = 0.522149 + 0.844231I$ $b = 0.17636 + 1.65146I$	$2.72120 + 2.30746I$	$5.25931 + 0.66425I$
$u = 0.772920 + 0.510351I$ $a = 1.114750 + 0.143726I$ $b = 0.522706 + 0.092356I$	$-0.75029 - 2.09337I$	$1.99613 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = 1.317910 + 0.023336I$ $b = 1.42189 + 1.32751I$	$2.72120 - 6.49421I$	$5.25931 + 7.66142I$
$u = 0.772920 + 0.510351I$ $a = -0.525892 + 0.227752I$ $b = -0.788261 - 0.680002I$	$-0.75029 - 2.09337I$	$1.99613 + 4.16283I$
$u = 0.772920 + 0.510351I$ $a = -1.14137 - 1.38302I$ $b = 0.027275 - 0.919003I$	$2.72120 + 2.30746I$	$5.25931 + 0.66425I$
$u = 0.772920 + 0.510351I$ $a = 1.17889 - 1.64289I$ $b = 1.94743 - 0.93765I$	$-2.82227 - 0.56279I$	$1.030106 - 0.267817I$
$u = 0.772920 + 0.510351I$ $a = -1.41315 + 1.50457I$ $b = -2.19306 + 0.41207I$	$-2.82227 - 3.62395I$	$1.03011 + 8.59348I$
$u = 0.772920 + 0.510351I$ $a = -2.07084 - 0.35016I$ $b = -1.006730 - 0.690634I$	$2.72120 - 6.49421I$	$5.25931 + 7.66142I$
$u = 0.772920 + 0.510351I$ $a = -1.19678 + 2.00335I$ $b = -1.74964 + 0.66817I$	$-2.82227 - 0.56279I$	$1.030106 - 0.267817I$
$u = 0.772920 + 0.510351I$ $a = 1.73076 - 1.67594I$ $b = 1.86011 - 0.44171I$	$-2.82227 - 3.62395I$	$1.03011 + 8.59348I$

Solutions to I_2^u		$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.772920 - 0.510351I$		
$a =$	$0.522149 - 0.844231I$	$2.72120 - 2.30746I$	$5.25931 - 0.66425I$
$b =$	$0.17636 - 1.65146I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$1.114750 - 0.143726I$	$-0.75029 + 2.09337I$	$1.99613 - 4.16283I$
$b =$	$0.522706 - 0.092356I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$1.317910 - 0.023336I$	$2.72120 + 6.49421I$	$5.25931 - 7.66142I$
$b =$	$1.42189 - 1.32751I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$-0.525892 - 0.227752I$	$-0.75029 + 2.09337I$	$1.99613 - 4.16283I$
$b =$	$-0.788261 + 0.680002I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$-1.14137 + 1.38302I$	$2.72120 - 2.30746I$	$5.25931 - 0.66425I$
$b =$	$0.027275 + 0.919003I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$1.17889 + 1.64289I$	$-2.82227 + 0.56279I$	$1.030106 + 0.267817I$
$b =$	$1.94743 + 0.93765I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$-1.41315 - 1.50457I$	$-2.82227 + 3.62395I$	$1.03011 - 8.59348I$
$b =$	$-2.19306 - 0.41207I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$-2.07084 + 0.35016I$	$2.72120 + 6.49421I$	$5.25931 - 7.66142I$
$b =$	$-1.006730 + 0.690634I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$-1.19678 - 2.00335I$	$-2.82227 + 0.56279I$	$1.030106 + 0.267817I$
$b =$	$-1.74964 - 0.66817I$		
$u =$	$0.772920 - 0.510351I$		
$a =$	$1.73076 + 1.67594I$	$-2.82227 + 3.62395I$	$1.03011 - 8.59348I$
$b =$	$1.86011 + 0.44171I$		

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.825933$ $a=-0.476007+0.067634I$ $b=-0.51907-1.67449I$	$-5.80415+1.53058I$	$-8.13723-4.43065I$
$u=-0.825933$ $a=-0.476007-0.067634I$ $b=-0.51907+1.67449I$	$-5.80415-1.53058I$	$-8.13723+4.43065I$
$u=-0.825933$ $a=-0.62847+2.02740I$ $b=-0.393149-0.055861I$	$-5.80415-1.53058I$	$-8.13723+4.43065I$
$u=-0.825933$ $a=-0.62847-2.02740I$ $b=-0.393149+0.055861I$	$-5.80415+1.53058I$	$-8.13723-4.43065I$
$u=-0.825933$ $a=\quad 2.19158+0.04238I$ $b=\quad 2.36602-0.68010I$	$-0.26068-4.40083I$	$-3.90804+3.49859I$
$u=-0.825933$ $a=\quad 2.19158-0.04238I$ $b=\quad 2.36602+0.68010I$	$-0.26068+4.40083I$	$-3.90804-3.49859I$
$u=-0.825933$ $a=-2.16987+0.54772I$ $b=-1.79217-0.45238I$	-3.73217	$-7.17121+0.I$
$u=-0.825933$ $a=-2.16987-0.54772I$ $b=-1.79217+0.45238I$	-3.73217	$-7.17121+0.I$
$u=-0.825933$ $a=\quad 2.86466+0.82344I$ $b=\quad 1.81010-0.03500I$	$-0.26068+4.40083I$	$-3.90804-3.49859I$
$u=-0.825933$ $a=\quad 2.86466-0.82344I$ $b=\quad 1.81010+0.03500I$	$-0.26068-4.40083I$	$-3.90804+3.49859I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.173910+0.391555I$ $a=\ \ 0.180120-1.006390I$ $b=-0.882145+0.065167I$	$-8.97705-0.19441I$	$-6.76898+3.72890I$
$u=-1.173910+0.391555I$ $a=\ \ 1.004320-0.370378I$ $b=\ \ 0.532694+0.531817I$	$-8.97705+2.86675I$	$-6.76898-5.13240I$
$u=-1.173910+0.391555I$ $a=\ \ 0.462278-0.785629I$ $b=\ \ 0.75098-1.81026I$	$-6.90507+1.33617I$	$-5.80295-0.70175I$
$u=-1.173910+0.391555I$ $a=-0.301740+1.190390I$ $b=-0.73634+2.05646I$	$-3.43359-3.06466I$	$-2.53978+2.79684I$
$u=-1.173910+0.391555I$ $a=-0.692888-0.175598I$ $b=-0.182613-1.251940I$	$-8.97705-0.19441I$	$-6.76898+3.72890I$
$u=-1.173910+0.391555I$ $a=-0.975268+0.845917I$ $b=-0.85954+1.84219I$	$-3.43359+5.73700I$	$-2.53978-4.20034I$
$u=-1.173910+0.391555I$ $a=\ \ 0.272368+0.543878I$ $b=\ \ 1.033960-0.828037I$	$-8.97705+2.86675I$	$-6.76898-5.13240I$
$u=-1.173910+0.391555I$ $a=\ \ 1.03854-1.19568I$ $b=\ \ 0.235057-1.103270I$	$-6.90507+1.33617I$	$-5.80295-0.70175I$
$u=-1.173910+0.391555I$ $a=-1.12992+1.19239I$ $b=-0.81366+1.37490I$	$-3.43359+5.73700I$	$-2.53978-4.20034I$
$u=-1.173910+0.391555I$ $a=-1.09027+1.38815I$ $b=\ \ 0.11189+1.51556I$	$-3.43359-3.06466I$	$-2.53978+2.79684I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.173910 - 0.391555I$ $a = \quad 0.180120 + 1.006390I$ $b = -0.882145 - 0.065167I$	$-8.97705 + 0.19441I$	$-6.76898 - 3.72890I$
$u = -1.173910 - 0.391555I$ $a = \quad 1.004320 + 0.370378I$ $b = \quad 0.532694 - 0.531817I$	$-8.97705 - 2.86675I$	$-6.76898 + 5.13240I$
$u = -1.173910 - 0.391555I$ $a = \quad 0.462278 + 0.785629I$ $b = \quad 0.75098 + 1.81026I$	$-6.90507 - 1.33617I$	$-5.80295 + 0.70175I$
$u = -1.173910 - 0.391555I$ $a = -0.301740 - 1.190390I$ $b = -0.73634 - 2.05646I$	$-3.43359 + 3.06466I$	$-2.53978 - 2.79684I$
$u = -1.173910 - 0.391555I$ $a = -0.692888 + 0.175598I$ $b = -0.182613 + 1.251940I$	$-8.97705 + 0.19441I$	$-6.76898 - 3.72890I$
$u = -1.173910 - 0.391555I$ $a = -0.975268 - 0.845917I$ $b = -0.85954 - 1.84219I$	$-3.43359 - 5.73700I$	$-2.53978 + 4.20034I$
$u = -1.173910 - 0.391555I$ $a = \quad 0.272368 - 0.543878I$ $b = \quad 1.033960 + 0.828037I$	$-8.97705 - 2.86675I$	$-6.76898 + 5.13240I$
$u = -1.173910 - 0.391555I$ $a = \quad 1.03854 + 1.19568I$ $b = \quad 0.235057 + 1.103270I$	$-6.90507 - 1.33617I$	$-5.80295 + 0.70175I$
$u = -1.173910 - 0.391555I$ $a = -1.12992 - 1.19239I$ $b = -0.81366 - 1.37490I$	$-3.43359 - 5.73700I$	$-2.53978 + 4.20034I$
$u = -1.173910 - 0.391555I$ $a = -1.09027 - 1.38815I$ $b = \quad 0.11189 - 1.51556I$	$-3.43359 + 3.06466I$	$-2.53978 - 2.79684I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.141484+0.739668I$ $a = 0.833321+0.197836I$ $b = -0.148096-0.486452I$	$0.32082-1.94642I$	$2.41639+0.58561I$
$u = 0.141484+0.739668I$ $a = 0.671396-0.071794I$ $b = 0.028431-0.644371I$	$0.32082-1.94642I$	$2.41639+0.58561I$
$u = 0.141484+0.739668I$ $a = -0.568678+0.319831I$ $b = -0.08989-1.48960I$	$0.32082+6.85525I$	$2.41639-6.41156I$
$u = 0.141484+0.739668I$ $a = 1.41403+0.59823I$ $b = -0.68925+1.35493I$	$-5.22264+3.98500I$	$-1.81281-7.34362I$
$u = 0.141484+0.739668I$ $a = 0.342864+0.158229I$ $b = -0.114649+1.239450I$	$-3.15066+2.45442I$	$-0.84678-2.91298I$
$u = 0.141484+0.739668I$ $a = -1.58794-0.45874I$ $b = 0.068527-0.275993I$	$-3.15066+2.45442I$	$-0.84678-2.91298I$
$u = 0.141484+0.739668I$ $a = 1.07862+1.32292I$ $b = -0.402567+1.251020I$	$-5.22264+0.92384I$	$-1.81281+1.51767I$
$u = 0.141484+0.739668I$ $a = -1.53120-0.83714I$ $b = 0.825911-0.984993I$	$-5.22264+0.92384I$	$-1.81281+1.51767I$
$u = 0.141484+0.739668I$ $a = 1.96522+0.25438I$ $b = 0.317028+0.375382I$	$0.32082+6.85525I$	$2.41639-6.41156I$
$u = 0.141484+0.739668I$ $a = -1.59520-1.23697I$ $b = 0.242430-1.130550I$	$-5.22264+3.98500I$	$-1.81281-7.34362I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.141484 - 0.739668I$ $a = 0.833321 - 0.197836I$ $b = -0.148096 + 0.486452I$	$0.32082 + 1.94642I$	$2.41639 - 0.58561I$
$u = 0.141484 - 0.739668I$ $a = 0.671396 + 0.071794I$ $b = 0.028431 + 0.644371I$	$0.32082 + 1.94642I$	$2.41639 - 0.58561I$
$u = 0.141484 - 0.739668I$ $a = -0.568678 - 0.319831I$ $b = -0.08989 + 1.48960I$	$0.32082 - 6.85525I$	$2.41639 + 6.41156I$
$u = 0.141484 - 0.739668I$ $a = 1.41403 - 0.59823I$ $b = -0.68925 - 1.35493I$	$-5.22264 - 3.98500I$	$-1.81281 + 7.34362I$
$u = 0.141484 - 0.739668I$ $a = 0.342864 - 0.158229I$ $b = -0.114649 - 1.239450I$	$-3.15066 - 2.45442I$	$-0.84678 + 2.91298I$
$u = 0.141484 - 0.739668I$ $a = -1.58794 + 0.45874I$ $b = 0.068527 + 0.275993I$	$-3.15066 - 2.45442I$	$-0.84678 + 2.91298I$
$u = 0.141484 - 0.739668I$ $a = 1.07862 - 1.32292I$ $b = -0.402567 - 1.251020I$	$-5.22264 - 0.92384I$	$-1.81281 - 1.51767I$
$u = 0.141484 - 0.739668I$ $a = -1.53120 + 0.83714I$ $b = 0.825911 + 0.984993I$	$-5.22264 - 0.92384I$	$-1.81281 - 1.51767I$
$u = 0.141484 - 0.739668I$ $a = 1.96522 - 0.25438I$ $b = 0.317028 - 0.375382I$	$0.32082 - 6.85525I$	$2.41639 + 6.41156I$
$u = 0.141484 - 0.739668I$ $a = -1.59520 + 1.23697I$ $b = 0.242430 + 1.130550I$	$-5.22264 - 3.98500I$	$-1.81281 + 7.34362I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.172470 + 0.500383I$ $a = 0.792012 + 0.503592I$ $b = 0.162057 + 0.387615I$	$-2.66037 - 2.68409I$	$-0.83249 + 2.41476I$
$u = 1.172470 + 0.500383I$ $a = 0.945073 + 0.712591I$ $b = 1.26045 + 1.74402I$	$-6.13185 - 7.08493I$	$-4.09566 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = -0.80474 - 1.26876I$ $b = -0.98004 - 2.30622I$	$-2.66037 - 11.48580I$	$-0.83249 + 9.41193I$
$u = 1.172470 + 0.500383I$ $a = -0.236274 - 0.229760I$ $b = -0.676624 - 0.986758I$	$-2.66037 - 2.68409I$	$-0.83249 + 2.41476I$
$u = 1.172470 + 0.500383I$ $a = -1.44640 - 0.87018I$ $b = -0.75150 - 1.30839I$	$-6.13185 - 7.08493I$	$-4.09566 + 5.91335I$
$u = 1.172470 + 0.500383I$ $a = 1.41720 + 1.36214I$ $b = 0.30867 + 1.89027I$	$-2.66037 - 11.48580I$	$-0.83249 + 9.41193I$
$u = 1.172470 + 0.500383I$ $a = 2.12983 + 0.34060I$ $b = 2.25954 + 1.80577I$	$-8.20383 - 5.55435I$	$-5.06169 + 1.48270I$
$u = 1.172470 + 0.500383I$ $a = 2.07246 + 0.88521I$ $b = 2.31320 + 1.95595I$	$-8.20383 - 8.61551I$	$-5.06169 + 10.34400I$
$u = 1.172470 + 0.500383I$ $a = -2.18626 - 0.60710I$ $b = -2.32674 - 1.46507I$	$-8.20383 - 5.55435I$	$-5.06169 + 1.48270I$
$u = 1.172470 + 0.500383I$ $a = -2.27121 - 0.69892I$ $b = -1.98696 - 2.07491I$	$-8.20383 - 8.61551I$	$-5.06169 + 10.34400I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.172470 - 0.500383I$ $a = 0.792012 - 0.503592I$ $b = 0.162057 - 0.387615I$	$-2.66037 + 2.68409I$	$-0.83249 - 2.41476I$
$u = 1.172470 - 0.500383I$ $a = 0.945073 - 0.712591I$ $b = 1.26045 - 1.74402I$	$-6.13185 + 7.08493I$	$-4.09566 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = -0.80474 + 1.26876I$ $b = -0.98004 + 2.30622I$	$-2.66037 + 11.48580I$	$-0.83249 - 9.41193I$
$u = 1.172470 - 0.500383I$ $a = -0.236274 + 0.229760I$ $b = -0.676624 + 0.986758I$	$-2.66037 + 2.68409I$	$-0.83249 - 2.41476I$
$u = 1.172470 - 0.500383I$ $a = -1.44640 + 0.87018I$ $b = -0.75150 + 1.30839I$	$-6.13185 + 7.08493I$	$-4.09566 - 5.91335I$
$u = 1.172470 - 0.500383I$ $a = 1.41720 - 1.36214I$ $b = 0.30867 - 1.89027I$	$-2.66037 + 11.48580I$	$-0.83249 - 9.41193I$
$u = 1.172470 - 0.500383I$ $a = 2.12983 - 0.34060I$ $b = 2.25954 - 1.80577I$	$-8.20383 + 5.55435I$	$-5.06169 - 1.48270I$
$u = 1.172470 - 0.500383I$ $a = 2.07246 - 0.88521I$ $b = 2.31320 - 1.95595I$	$-8.20383 + 8.61551I$	$-5.06169 - 10.34400I$
$u = 1.172470 - 0.500383I$ $a = -2.18626 + 0.60710I$ $b = -2.32674 + 1.46507I$	$-8.20383 + 5.55435I$	$-5.06169 - 1.48270I$
$u = 1.172470 - 0.500383I$ $a = -2.27121 + 0.69892I$ $b = -1.98696 + 2.07491I$	$-8.20383 + 8.61551I$	$-5.06169 - 10.34400I$

III.

$$\boldsymbol{I_3^u = \langle -2u^{27}-u^{26}+\cdots+b-6,\ 6u^{27}-2u^{26}+\cdots+a-4,\ u^{28}-8u^{26}+\cdots-5u^2+1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-6u^{27}+2u^{26}+\cdots+17u+4\\2u^{27}+u^{26}+\cdots+4u+6\end{pmatrix}$$
$$a_4 = \begin{pmatrix}2u^{27}+3u^{26}+\cdots-4u-8\\3u^{27}+u^{26}+\cdots-9u-2\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-u^2+1\\-u^4\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u^5-2u^3+u\\u^7-u^5+u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-2u^{27}+u^{26}+\cdots+9u+5\\6u^{27}-42u^{25}+\cdots-4u+7\end{pmatrix}$$
$$a_5 = \begin{pmatrix}2u^{27}+3u^{26}+\cdots-4u-7\\3u^{27}+u^{26}+\cdots+3u^2-9u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-4u^{27}-2u^{26}+\cdots+12u+8\\-7u^{27}+3u^{26}+\cdots+17u-1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-5u^{27}-u^{26}+\cdots+5u+1\\3u^{27}-4u^{26}+\cdots-8u+9\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 15u^{27}+19u^{26}-106u^{25}-149u^{24}+360u^{23}+584u^{22}-700u^{21}-1413u^{20}+765u^{19}+2322u^{18}-199u^{17}-2661u^{16}-746u^{15}+2165u^{14}+1354u^{13}-1227u^{12}-1167u^{11}+506u^{10}+538u^9-188u^8-29u^7+148u^6-106u^5-123u^4+66u^3+77u^2-14u-14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 16u^{27} + \cdots - 10u + 1$
c_2	$u^{28} - 8u^{26} + \cdots - 5u^2 + 1$
c_3, c_{10}	$u^{28} + 14u^{26} + \cdots + u + 1$
c_4, c_{12}	$u^{28} + 2u^{26} + \cdots + 3u + 1$
c_5, c_9	$u^{28} + 14u^{26} + \cdots - u + 1$
c_6	$u^{28} - 8u^{26} + \cdots - 5u^2 + 1$
c_7	$u^{28} - 3u^{27} + \cdots - 9u^2 + 1$
c_8	$u^{28} - 7u^{27} + \cdots - 3u + 1$
c_{11}	$u^{28} + 7u^{27} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 32y^{26} + \cdots - 6y + 1$
c_2, c_6	$y^{28} - 16y^{27} + \cdots - 10y + 1$
c_3, c_5, c_9 c_{10}	$y^{28} + 28y^{27} + \cdots + 17y + 1$
c_4, c_{12}	$y^{28} + 4y^{27} + \cdots + y + 1$
c_7	$y^{28} + 13y^{27} + \cdots - 18y + 1$
c_8, c_{11}	$y^{28} + 21y^{27} + \cdots + 21y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.909624 + 0.399283I$ $a = -1.35681 + 1.21818I$ $b = -1.72058 + 0.56633I$	$-3.24975 - 1.66982I$	$-4.52503 + 3.50835I$
$u = 0.909624 - 0.399283I$ $a = -1.35681 - 1.21818I$ $b = -1.72058 - 0.56633I$	$-3.24975 + 1.66982I$	$-4.52503 - 3.50835I$
$u = -0.381271 + 0.904184I$ $a = 0.465172 - 0.049713I$ $b = -0.132407 + 0.439556I$	$0.60188 + 2.20318I$	$19.4970 - 11.9673I$
$u = -0.381271 - 0.904184I$ $a = 0.465172 + 0.049713I$ $b = -0.132407 - 0.439556I$	$0.60188 - 2.20318I$	$19.4970 + 11.9673I$
$u = 1.024400 + 0.383160I$ $a = 0.61006 - 1.65384I$ $b = 1.25863 - 1.46043I$	$-0.83437 + 2.19030I$	$0.51959 - 1.67301I$
$u = 1.024400 - 0.383160I$ $a = 0.61006 + 1.65384I$ $b = 1.25863 + 1.46043I$	$-0.83437 - 2.19030I$	$0.51959 + 1.67301I$
$u = 0.716573 + 0.538278I$ $a = -1.14819 + 1.73127I$ $b = -1.75466 + 0.62254I$	$-3.06915 - 2.17150I$	$-0.43947 + 3.55816I$
$u = 0.716573 - 0.538278I$ $a = -1.14819 - 1.73127I$ $b = -1.75466 - 0.62254I$	$-3.06915 + 2.17150I$	$-0.43947 - 3.55816I$
$u = -1.113090 + 0.299686I$ $a = 0.273509 - 0.536051I$ $b = -0.143794 + 0.678642I$	$-7.04737 + 3.15969I$	$-2.79688 - 5.16503I$
$u = -1.113090 - 0.299686I$ $a = 0.273509 + 0.536051I$ $b = -0.143794 - 0.678642I$	$-7.04737 - 3.15969I$	$-2.79688 + 5.16503I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.052520 + 0.535447I$ $a = 0.019621 + 0.244212I$ $b = -0.151414 - 0.246532I$	$0.29369 + 8.62276I$	$-1.09109 - 8.86228I$
$u = -1.052520 - 0.535447I$ $a = 0.019621 - 0.244212I$ $b = -0.151414 + 0.246532I$	$0.29369 - 8.62276I$	$-1.09109 + 8.86228I$
$u = -1.155670 + 0.401281I$ $a = -0.434187 + 0.437982I$ $b = 0.326024 - 0.680396I$	$-8.44495 + 0.86552I$	$-1.99597 - 3.31819I$
$u = -1.155670 - 0.401281I$ $a = -0.434187 - 0.437982I$ $b = 0.326024 + 0.680396I$	$-8.44495 - 0.86552I$	$-1.99597 + 3.31819I$
$u = -1.054750 + 0.632515I$ $a = 0.202172 - 0.143686I$ $b = -0.122357 + 0.279430I$	$-1.26603 + 3.39888I$	$3.29789 - 7.55521I$
$u = -1.054750 - 0.632515I$ $a = 0.202172 + 0.143686I$ $b = -0.122357 - 0.279430I$	$-1.26603 - 3.39888I$	$3.29789 + 7.55521I$
$u = -0.500430 + 0.579905I$ $a = -0.501513 - 0.182933I$ $b = 0.357056 - 0.199285I$	$1.96468 - 4.13139I$	$3.07949 + 3.75164I$
$u = -0.500430 - 0.579905I$ $a = -0.501513 + 0.182933I$ $b = 0.357056 + 0.199285I$	$1.96468 + 4.13139I$	$3.07949 - 3.75164I$
$u = 0.719513 + 0.210138I$ $a = 3.01137 - 1.26584I$ $b = 2.43272 - 0.27799I$	$0.49510 - 4.96252I$	$5.23060 + 9.28386I$
$u = 0.719513 - 0.210138I$ $a = 3.01137 + 1.26584I$ $b = 2.43272 + 0.27799I$	$0.49510 + 4.96252I$	$5.23060 - 9.28386I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.158930 + 0.497770I$ $a = 2.26263 + 0.62418I$ $b = 2.31152 + 1.84965I$	$-7.74631 - 7.32565I$	$-1.47863 + 4.71350I$
$u = 1.158930 - 0.497770I$ $a = 2.26263 - 0.62418I$ $b = 2.31152 - 1.84965I$	$-7.74631 + 7.32565I$	$-1.47863 - 4.71350I$
$u = -0.721884 + 0.081239I$ $a = 0.293190 - 1.240550I$ $b = -0.110868 + 0.919351I$	$-5.21361 - 1.26266I$	$6.29853 - 1.62701I$
$u = -0.721884 - 0.081239I$ $a = 0.293190 + 1.240550I$ $b = -0.110868 - 0.919351I$	$-5.21361 + 1.26266I$	$6.29853 + 1.62701I$
$u = 0.155553 + 0.691734I$ $a = -1.57108 - 1.11636I$ $b = 0.527840 - 1.260420I$	$-4.88233 + 2.80056I$	$1.208918 - 0.721960I$
$u = 0.155553 - 0.691734I$ $a = -1.57108 + 1.11636I$ $b = 0.527840 + 1.260420I$	$-4.88233 - 2.80056I$	$1.208918 + 0.721960I$
$u = 1.295040 + 0.446899I$ $a = -1.125940 - 0.851291I$ $b = -1.07770 - 1.60564I$	$-4.36975 - 6.65598I$	$-14.8049 + 6.5840I$
$u = 1.295040 - 0.446899I$ $a = -1.125940 + 0.851291I$ $b = -1.07770 + 1.60564I$	$-4.36975 + 6.65598I$	$-14.8049 - 6.5840I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^9+5u^8+12u^7+15u^6+9u^5-u^4-4u^3-2u^2+u+1)^{10}$ $\cdot(u^{28}-16u^{27}+\cdots-10u+1)(u^{42}+21u^{41}+\cdots-256u+1024)$
c_2	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^{10}$ $\cdot(u^{28}-8u^{26}+\cdots-5u^2+1)(u^{42}-11u^{41}+\cdots-336u+32)$
c_3, c_{10}	$(u^{28}+14u^{26}+\cdots+u+1)(u^{42}+17u^{40}+\cdots-u+1)$ $\cdot(u^{90}+u^{89}+\cdots+7431322u+1174423)$
c_4, c_{12}	$(u^{28}+2u^{26}+\cdots+3u+1)(u^{42}-3u^{40}+\cdots+u+1)$ $\cdot(u^{90}-5u^{89}+\cdots+46u+7)$
c_5, c_9	$(u^{28}+14u^{26}+\cdots-u+1)(u^{42}+17u^{40}+\cdots-u+1)$ $\cdot(u^{90}+u^{89}+\cdots+7431322u+1174423)$
c_6	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^{10}$ $\cdot(u^{28}-8u^{26}+\cdots-5u^2+1)(u^{42}-11u^{41}+\cdots-336u+32)$
c_7	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^{10}$ $\cdot(u^{28}-3u^{27}+\cdots-9u^2+1)(u^{42}-30u^{41}+\cdots-6179216u+430496)$
c_8	$((u^5+u^4+2u^3+u^2+u+1)^{18})(u^{28}-7u^{27}+\cdots-3u+1)$ $\cdot(u^{42}-24u^{41}+\cdots-10752u+512)$
c_{11}	$((u^5+u^4+2u^3+u^2+u+1)^{18})(u^{28}+7u^{27}+\cdots+3u+1)$ $\cdot(u^{42}-24u^{41}+\cdots-10752u+512)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)^{10}$ $\cdot (y^{28} + 32y^{26} + \cdots - 6y + 1)(y^{42} - y^{41} + \cdots + 9240576y + 1048576)$
c_2, c_6	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^{10}$ $\cdot (y^{28} - 16y^{27} + \cdots - 10y + 1)(y^{42} - 21y^{41} + \cdots + 256y + 1024)$
c_3, c_5, c_9 c_{10}	$(y^{28} + 28y^{27} + \cdots + 17y + 1)(y^{42} + 34y^{41} + \cdots - 7y + 1)$ $\cdot (y^{90} + 75y^{89} + \cdots + 22867447038168y + 1379269382929)$
c_4, c_{12}	$(y^{28} + 4y^{27} + \cdots + y + 1)(y^{42} - 6y^{41} + \cdots - 27y + 1)$ $\cdot (y^{90} + 15y^{89} + \cdots + 3680y + 49)$
c_7	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^{10}$ $\cdot (y^{28} + 13y^{27} + \cdots - 18y + 1)$ $\cdot (y^{42} + 20y^{41} + \cdots + 1352203186432y + 185326806016)$
c_8, c_{11}	$((y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^{18})(y^{28} + 21y^{27} + \cdots + 21y + 1)$ $\cdot (y^{42} + 24y^{41} + \cdots + 262144y + 262144)$