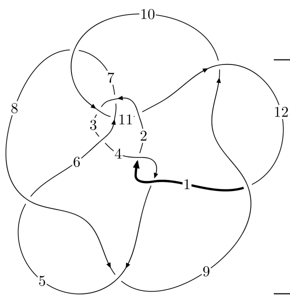
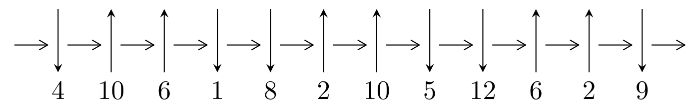
$12n_{0844}$ ($K12n_{0844}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle b+u,\ a-1,\ u^7-2u^6+6u^5-6u^4+7u^3-3u^2-1\rangle\\
I_2^u &= \langle b+u,\ a+1,\ u^6+u^5+3u^4+u^3+2u^2+u+1\rangle\\
I_3^u &= \langle b+u,\ 2u^{13}+u^{12}+14u^{11}+u^{10}+36u^9-14u^8+40u^7-42u^6+19u^5-39u^4+11u^3-8u^2+2a+9u+1,\\
&\quad u^{14}+u^{13}+8u^{12}+5u^{11}+23u^{10}+6u^9+26u^8-7u^7+4u^6-17u^5-6u^4-4u^3+4u^2+4u+1\rangle\\
I_4^u &= \langle u^{13}+2u^{12}+9u^{11}+10u^{10}+26u^9+12u^8+28u^7-11u^6+5u^5-23u^4-u^2+2b+7u+2,\ a-1,\\
&\quad u^{14}+u^{13}+8u^{12}+5u^{11}+23u^{10}+6u^9+26u^8-7u^7+4u^6-17u^5-6u^4-4u^3+4u^2+4u+1\rangle\\
I_5^u &= \langle -27u^{13}+169u^{12}+\cdots+6b+152,\ 38u^{13}-239u^{12}+\cdots+6a-200,\ u^{14}-7u^{13}+\cdots-16u+4\rangle\\
I_6^u &= \langle b+u,\ u^5+3u^3+a+3u,\ u^6+3u^4+u^3+3u^2+2u+1\rangle\\
I_7^u &= \langle -u^3+b-2u-1,\ a+1,\ u^6+3u^4+u^3+3u^2+2u+1\rangle\\
I_8^u &= \langle -u^5-u^4-4u^3-6u^2+4b-7u-6,\ 3u^5+7u^4+16u^3+22u^2+8a+21u+10,\\
&\quad u^6+3u^5+6u^4+10u^3+11u^2+8u+4\rangle\\
I_9^u &= \langle u^5+u^3-2au+2u^2+2b-3u+1,\\
&\quad u^5a+25u^5+3u^3a+20u^4+4u^2a+71u^3+2a^2+au+112u^2+9a+53u+141,\\
&\quad u^6+u^5+3u^4+5u^3+3u^2+6u+1\rangle
\end{aligned}$$

* 9 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 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

I. $I_1^u = \langle b+u,\ a-1,\ u^7-2u^6+6u^5-6u^4+7u^3-3u^2-1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $=3u^6-6u^5+15u^4-18u^3+15u^2-12u+3$

in decimal forms when there is not enough margin.

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_8, c_9, c_{12}	$u^7 - 2u^6 + 6u^5 - 6u^4 + 7u^3 - 3u^2 - 1$
c_2, c_6, c_{10}	$u^7 - 5u^6 + 7u^5 - 3u^3 - 2u^2 + u - 1$
c_3, c_7, c_{11}	$u^7 + 6u^6 + 15u^5 + 17u^4 + 7u^3 - 3u^2 - 2u + 2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8, c_9, c_{12}	$y^7 + 8y^6 + 26y^5 + 36y^4 + 9y^3 - 21y^2 - 6y - 1$
c_2, c_6, c_{10}	$y^7 - 11y^6 + 43y^5 - 60y^4 + 13y^3 - 10y^2 - 3y - 1$
c_3, c_7, c_{11}	$y^7 - 6y^6 + 35y^5 - 47y^4 + 67y^3 - 105y^2 + 16y - 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.820643$ $a = 1.00000$ $b = -0.820643$	4.61500	-1.20760
$u = 0.29696 + 1.40213I$ $a = 1.00000$ $b = -0.29696 - 1.40213I$	$9.73442 - 0.66586I$	$5.31181 - 1.86830I$
$u = 0.29696 - 1.40213I$ $a = 1.00000$ $b = -0.29696 + 1.40213I$	$9.73442 + 0.66586I$	$5.31181 + 1.86830I$
$u = -0.196466 + 0.415967I$ $a = 1.00000$ $b = 0.196466 - 0.415967I$	$0.207126 + 1.131650I$	$1.63683 - 6.29574I$
$u = -0.196466 - 0.415967I$ $a = 1.00000$ $b = 0.196466 + 0.415967I$	$0.207126 - 1.131650I$	$1.63683 + 6.29574I$
$u = 0.48918 + 1.60119I$ $a = 1.00000$ $b = -0.48918 - 1.60119I$	$-19.6512 - 14.5525I$	$7.15517 + 5.93239I$
$u = 0.48918 - 1.60119I$ $a = 1.00000$ $b = -0.48918 + 1.60119I$	$-19.6512 + 14.5525I$	$7.15517 - 5.93239I$

II. $I_2^u = \langle b+u,\ a+1,\ u^6+u^5+3u^4+u^3+2u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -9u^5 - 6u^4 - 21u^3 + 3u^2 - 9u$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8, c_9, c_{12}	$y^6 + 5y^5 + 11y^4 + 11y^3 + 8y^2 + 3y + 1$
c_2, c_6, c_{10}	$y^6 - 6y^5 + 5y^4 + 13y^3 + 14y^2 + 4y + 1$
c_3, c_7, c_{11}	$y^6 - 6y^5 + 15y^4 - 3y^3 - 9y^2 + 3y + 4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.411715 + 0.779640I$ $a = -1.00000$ $b = -0.411715 - 0.779640I$	$10.29080 - 4.97121I$	$7.46638 + 3.54102I$
$u = 0.411715 - 0.779640I$ $a = -1.00000$ $b = -0.411715 + 0.779640I$	$10.29080 + 4.97121I$	$7.46638 - 3.54102I$
$u = -0.459082 + 0.581397I$ $a = -1.00000$ $b = 0.459082 - 0.581397I$	$-0.53119 + 2.71432I$	$-2.78148 - 9.27411I$
$u = -0.459082 - 0.581397I$ $a = -1.00000$ $b = 0.459082 + 0.581397I$	$-0.53119 - 2.71432I$	$-2.78148 + 9.27411I$
$u = -0.45263 + 1.46263I$ $a = -1.00000$ $b = 0.45263 - 1.46263I$	$8.33462 + 8.14586I$	$2.81510 - 6.35297I$
$u = -0.45263 - 1.46263I$ $a = -1.00000$ $b = 0.45263 + 1.46263I$	$8.33462 - 8.14586I$	$2.81510 + 6.35297I$

III. $I_3^u = \langle b+u,\ 2u^{13}+u^{12}+\cdots+2a+1,\ u^{14}+u^{13}+\cdots+4u+1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{13}-\frac{1}{2}u^{12}+\cdots-\frac{9}{2}u-\frac{1}{2} \\ -u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^{13}-\frac{1}{2}u^{12}+\cdots-\frac{11}{2}u-\frac{1}{2} \\ -u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{2}u^{13}-u^{12}+\cdots+\frac{3}{2}u^2-\frac{7}{2}u \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{2}u^{13}-4u^{12}+\cdots-\frac{19}{2}u-2 \\ -\frac{1}{2}u^{13}-\frac{7}{2}u^{12}+\cdots-6u-\frac{3}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{2}u^{13}-\frac{1}{2}u^{12}+\cdots+2u+\frac{5}{2} \\ -\frac{1}{2}u^{13}-\frac{1}{2}u^{12}+\cdots+2u+\frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{13}-\frac{5}{2}u^{12}+\cdots-8u-\frac{5}{2} \\ -u^{13}-\frac{5}{2}u^{12}+\cdots-\frac{11}{2}u-\frac{3}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^{13}-3u^{12}+\cdots-7u-1 \\ -\frac{1}{2}u^{13}-\frac{3}{2}u^{12}+\cdots-3u-\frac{1}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{1}{2}u^{13}+u^{12}+\cdots+\frac{11}{2}u+3 \\ \frac{3}{2}u^{12}+2u^{11}+\cdots+\frac{9}{2}u+\frac{3}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$-3u^{13}-4u^{12}-27u^{11}-21u^{10}-83u^9-23u^8-97u^7+43u^6-14u^5+86u^4+16u^3+12u^2-29u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_5 c_8	$u^{14} + u^{13} + \cdots + 4u + 1$
c_2, c_{10}	$u^{14} + 4u^{13} + \cdots - 3u^2 + 1$
c_3	$u^{14} + 14u^{13} + \cdots + 384u + 64$
c_6	$u^{14} - 8u^{13} + \cdots - 100u + 52$
c_7, c_{11}	$u^{14} - 4u^{13} + \cdots - 27u + 7$
c_9, c_{12}	$u^{14} - 7u^{13} + \cdots - 16u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8	$y^{14} + 15y^{13} + \cdots - 8y + 1$
c_2, c_{10}	$y^{14} - 22y^{13} + \cdots - 6y + 1$
c_3	$y^{14} - 2y^{13} + \cdots + 53248y + 4096$
c_6	$y^{14} - 14y^{13} + \cdots + 6016y + 2704$
c_7, c_{11}	$y^{14} - 16y^{13} + \cdots + 69y + 49$
c_9, c_{12}	$y^{14} + 7y^{13} + \cdots + 80y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.439663 + 0.679978I$ $a = -0.517883 + 0.552774I$ $b = \quad 0.439663 - 0.679978I$	$0.33027 + 1.75564I$	$4.64860 - 3.95549I$
$u = -0.439663 - 0.679978I$ $a = -0.517883 - 0.552774I$ $b = \quad 0.439663 + 0.679978I$	$0.33027 - 1.75564I$	$4.64860 + 3.95549I$
$u = \quad 0.736420 + 0.153256I$ $a = \quad 0.89088 + 1.45567I$ $b = -0.736420 - 0.153256I$	$8.26670 - 4.44391I$	$1.65913 + 3.08844I$
$u = \quad 0.736420 - 0.153256I$ $a = \quad 0.89088 - 1.45567I$ $b = -0.736420 + 0.153256I$	$8.26670 + 4.44391I$	$1.65913 - 3.08844I$
$u = -0.149559 + 1.356980I$ $a = -0.079573 - 0.538803I$ $b = \quad 0.149559 - 1.356980I$	$5.20834 + 3.21642I$	$7.19365 - 4.36535I$
$u = -0.149559 - 1.356980I$ $a = -0.079573 + 0.538803I$ $b = \quad 0.149559 + 1.356980I$	$5.20834 - 3.21642I$	$7.19365 + 4.36535I$
$u = -0.074998 + 1.387310I$ $a = -1.229600 - 0.602077I$ $b = \quad 0.074998 - 1.387310I$	$16.9219 + 0.9403I$	$9.61641 - 0.21990I$
$u = -0.074998 - 1.387310I$ $a = -1.229600 + 0.602077I$ $b = \quad 0.074998 + 1.387310I$	$16.9219 - 0.9403I$	$9.61641 + 0.21990I$
$u = \quad 0.24560 + 1.40926I$ $a = \quad 0.449017 - 0.948524I$ $b = -0.24560 - 1.40926I$	$13.3854 - 7.8624I$	$6.65538 + 4.81795I$
$u = \quad 0.24560 - 1.40926I$ $a = \quad 0.449017 + 0.948524I$ $b = -0.24560 + 1.40926I$	$13.3854 + 7.8624I$	$6.65538 - 4.81795I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.47718 + 1.55138I$ $a = -0.863496 + 0.085310I$ $b = \quad 0.47718 - 1.55138I$	$9.82711 + 6.87495I$	$7.39941 - 2.87557I$
$u = -0.47718 - 1.55138I$ $a = -0.863496 - 0.085310I$ $b = \quad 0.47718 + 1.55138I$	$9.82711 - 6.87495I$	$7.39941 + 2.87557I$
$u = -0.340624 + 0.151528I$ $a = \quad 1.35065 - 1.83502I$ $b = \quad 0.340624 - 0.151528I$	$0.343098 + 1.223190I$	$0.32742 - 6.66845I$
$u = -0.340624 - 0.151528I$ $a = \quad 1.35065 + 1.83502I$ $b = \quad 0.340624 + 0.151528I$	$0.343098 - 1.223190I$	$0.32742 + 6.66845I$

IV. $I_4^u = \langle u^{13} + 2u^{12} + \cdots + 2b + 2,\ a - 1,\ u^{14} + u^{13} + \cdots + 4u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ -\frac{1}{2}u^{13} - u^{12} + \cdots - \frac{7}{2}u - 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^{13} - u^{12} + \cdots + \frac{1}{2}u^2 - \frac{7}{2}u \\ -\frac{1}{2}u^{13} - u^{12} + \cdots - \frac{7}{2}u - 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{2}u^{13} - \frac{1}{2}u^{12} + \cdots - 3u - \frac{1}{2} \\ -u^{13} + \frac{1}{2}u^{12} + \cdots + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{2}u^{13} - \frac{5}{2}u^{11} + \cdots + \frac{5}{2}u + 1 \\ -\frac{1}{2}u^{13} + u^{12} + \cdots + \frac{11}{2}u + 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u \\ -\frac{1}{2}u^{13} - \frac{1}{2}u^{12} + \cdots + 2u + \frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 + 1 \\ -\frac{1}{2}u^{13} + \frac{1}{2}u^{12} + \cdots - u - \frac{1}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{3}{2}u^{13} - \frac{3}{2}u^{12} + \cdots - 6u - \frac{3}{2} \\ -u^{13} - \frac{1}{2}u^{12} + \cdots - \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{3}{2}u^{13} - u^{12} + \cdots - \frac{5}{2}u^2 + \frac{1}{2}u \\ -2u^{13} - u^{12} + \cdots + 3u + 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$-3u^{13}-4u^{12}-27u^{11}-21u^{10}-83u^9-23u^8-97u^7+43u^6-14u^5+86u^4+16u^3+12u^2-29u-10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$u^{14} + u^{13} + \cdots + 4u + 1$
c_2	$u^{14} - 8u^{13} + \cdots - 100u + 52$
c_3, c_7	$u^{14} - 4u^{13} + \cdots - 27u + 7$
c_5, c_8	$u^{14} - 7u^{13} + \cdots - 16u + 4$
c_6, c_{10}	$u^{14} + 4u^{13} + \cdots - 3u^2 + 1$
c_{11}	$u^{14} + 14u^{13} + \cdots + 384u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$y^{14} + 15y^{13} + \cdots - 8y + 1$
c_2	$y^{14} - 14y^{13} + \cdots + 6016y + 2704$
c_3, c_7	$y^{14} - 16y^{13} + \cdots + 69y + 49$
c_5, c_8	$y^{14} + 7y^{13} + \cdots + 80y + 16$
c_6, c_{10}	$y^{14} - 22y^{13} + \cdots - 6y + 1$
c_{11}	$y^{14} - 2y^{13} + \cdots + 53248y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.439663 + 0.679978I$ $a = 1.00000$ $b = 0.148180 + 0.595184I$	$0.33027 + 1.75564I$	$4.64860 - 3.95549I$
$u = -0.439663 - 0.679978I$ $a = 1.00000$ $b = 0.148180 - 0.595184I$	$0.33027 - 1.75564I$	$4.64860 + 3.95549I$
$u = 0.736420 + 0.153256I$ $a = 1.00000$ $b = -0.432968 - 1.208520I$	$8.26670 - 4.44391I$	$1.65913 + 3.08844I$
$u = 0.736420 - 0.153256I$ $a = 1.00000$ $b = -0.432968 + 1.208520I$	$8.26670 + 4.44391I$	$1.65913 - 3.08844I$
$u = -0.149559 + 1.356980I$ $a = 1.00000$ $b = -0.743045 + 0.027396I$	$5.20834 + 3.21642I$	$7.19365 - 4.36535I$
$u = -0.149559 - 1.356980I$ $a = 1.00000$ $b = -0.743045 - 0.027396I$	$5.20834 - 3.21642I$	$7.19365 + 4.36535I$
$u = -0.074998 + 1.387310I$ $a = 1.00000$ $b = -0.92749 + 1.66068I$	$16.9219 + 0.9403I$	$9.61641 - 0.21990I$
$u = -0.074998 - 1.387310I$ $a = 1.00000$ $b = -0.92749 - 1.66068I$	$16.9219 - 0.9403I$	$9.61641 + 0.21990I$
$u = 0.24560 + 1.40926I$ $a = 1.00000$ $b = -1.44700 - 0.39982I$	$13.3854 - 7.8624I$	$6.65538 + 4.81795I$
$u = 0.24560 - 1.40926I$ $a = 1.00000$ $b = -1.44700 + 0.39982I$	$13.3854 + 7.8624I$	$6.65538 - 4.81795I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.47718 + 1.55138I$ $a = 1.00000$ $b = -0.279692 + 1.380320I$	$9.82711 + 6.87495I$	$7.39941 - 2.87557I$
$u = -0.47718 - 1.55138I$ $a = 1.00000$ $b = -0.279692 - 1.380320I$	$9.82711 - 6.87495I$	$7.39941 + 2.87557I$
$u = -0.340624 + 0.151528I$ $a = 1.00000$ $b = 0.182009 - 0.829712I$	$0.343098 + 1.223190I$	$0.32742 - 6.66845I$
$u = -0.340624 - 0.151528I$ $a = 1.00000$ $b = 0.182009 + 0.829712I$	$0.343098 - 1.223190I$	$0.32742 + 6.66845I$

V. $I_5^u = \langle -27u^{13} + 169u^{12} + \cdots + 6b + 152,\ 38u^{13} - 239u^{12} + \cdots + 6a - 200,\ u^{14} - 7u^{13} + \cdots - 16u + 4\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -6.33333u^{13} + 39.8333u^{12} + \cdots - 91.1667u + 33.3333 \\ \frac{9}{2}u^{13} - \frac{169}{6}u^{12} + \cdots + 68u - \frac{76}{3} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{11}{6}u^{13} + \frac{35}{3}u^{12} + \cdots - \frac{139}{6}u + 8 \\ \frac{9}{2}u^{13} - \frac{169}{6}u^{12} + \cdots + 68u - \frac{76}{3} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{11}{12}u^{13} + \frac{73}{12}u^{12} + \cdots - \frac{55}{3}u + 7 \\ \frac{3}{2}u^{13} - \frac{28}{3}u^{12} + \cdots + 23u - \frac{29}{3} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} \frac{8}{3}u^{13} - \frac{101}{6}u^{12} + \cdots + \frac{245}{6}u - 15 \\ -3.66667u^{13} + 23.1667u^{12} + \cdots - 54.3333u + 20.6667 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 2.41667u^{13} - 15.4167u^{12} + \cdots + 41.3333u - 15.6667 \\ -\frac{3}{2}u^{13} + \frac{28}{3}u^{12} + \cdots - 22u + \frac{29}{3} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{55}{12}u^{13} - \frac{341}{12}u^{12} + \cdots + \frac{179}{3}u - 23 \\ -7u^{13} + \frac{131}{3}u^{12} + \cdots - 97u + \frac{109}{3} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -\frac{3}{4}u^{13} + \frac{61}{12}u^{12} + \cdots - 14u + \frac{17}{3} \\ \frac{5}{6}u^{13} - \frac{11}{2}u^{12} + \cdots + \frac{50}{3}u - \frac{23}{3} \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{7}{4}u^{13} - \frac{45}{4}u^{12} + \cdots + 31u - 11 \\ -\frac{1}{6}u^{13} + \frac{4}{3}u^{12} + \cdots - \frac{19}{3}u + 3 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{27}{2}u^{13} - \frac{503}{6}u^{12} + \frac{935}{3}u^{11} - \frac{4757}{6}u^{10} + \frac{4559}{3}u^9 - 2313u^8 + \frac{8509}{3}u^7 - \frac{5779}{2}u^6 + \frac{7508}{3}u^5 - \frac{5368}{3}u^4 + \frac{3413}{3}u^3 - \frac{1574}{3}u^2 + 210u - \frac{224}{3}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{14} - 7u^{13} + \cdots - 16u + 4$
c_2, c_6	$u^{14} + 4u^{13} + \cdots - 3u^2 + 1$
c_3, c_{11}	$u^{14} - 4u^{13} + \cdots - 27u + 7$
c_5, c_8, c_9 c_{12}	$u^{14} + u^{13} + \cdots + 4u + 1$
c_7	$u^{14} + 14u^{13} + \cdots + 384u + 64$
c_{10}	$u^{14} - 8u^{13} + \cdots - 100u + 52$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{14} + 7y^{13} + \cdots + 80y + 16$
c_2, c_6	$y^{14} - 22y^{13} + \cdots - 6y + 1$
c_3, c_{11}	$y^{14} - 16y^{13} + \cdots + 69y + 49$
c_5, c_8, c_9 c_{12}	$y^{14} + 15y^{13} + \cdots - 8y + 1$
c_7	$y^{14} - 2y^{13} + \cdots + 53248y + 4096$
c_{10}	$y^{14} - 14y^{13} + \cdots + 6016y + 2704$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.182009 + 0.829712I$ $a = 0.260164 + 0.353462I$ $b = 0.340624 - 0.151528I$	$0.343098 + 1.223190I$	$0.32742 - 6.66845I$
$u = -0.182009 - 0.829712I$ $a = 0.260164 - 0.353462I$ $b = 0.340624 + 0.151528I$	$0.343098 - 1.223190I$	$0.32742 + 6.66845I$
$u = 0.743045 + 0.027396I$ $a = -0.26825 - 1.81635I$ $b = 0.149559 + 1.356980I$	$5.20834 - 3.21642I$	$7.19365 + 4.36535I$
$u = 0.743045 - 0.027396I$ $a = -0.26825 + 1.81635I$ $b = 0.149559 - 1.356980I$	$5.20834 + 3.21642I$	$7.19365 - 4.36535I$
$u = 0.432968 + 1.208520I$ $a = 0.305865 - 0.499777I$ $b = -0.736420 - 0.153256I$	$8.26670 - 4.44391I$	$1.65913 + 3.08844I$
$u = 0.432968 - 1.208520I$ $a = 0.305865 + 0.499777I$ $b = -0.736420 + 0.153256I$	$8.26670 + 4.44391I$	$1.65913 - 3.08844I$
$u = -0.148180 + 0.595184I$ $a = -0.902610 + 0.963420I$ $b = 0.439663 + 0.679978I$	$0.33027 - 1.75564I$	$4.64860 + 3.95549I$
$u = -0.148180 - 0.595184I$ $a = -0.902610 - 0.963420I$ $b = 0.439663 - 0.679978I$	$0.33027 + 1.75564I$	$4.64860 - 3.95549I$
$u = 0.279692 + 1.380320I$ $a = -1.146890 + 0.113308I$ $b = 0.47718 + 1.55138I$	$9.82711 - 6.87495I$	$7.39941 + 2.87557I$
$u = 0.279692 - 1.380320I$ $a = -1.146890 - 0.113308I$ $b = 0.47718 - 1.55138I$	$9.82711 + 6.87495I$	$7.39941 - 2.87557I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.44700 + 0.39982I$ $a = 0.407711 + 0.861266I$ $b = -0.24560 - 1.40926I$	$13.3854 - 7.8624I$	$6.65538 + 4.81795I$
$u = 1.44700 - 0.39982I$ $a = 0.407711 - 0.861266I$ $b = -0.24560 + 1.40926I$	$13.3854 + 7.8624I$	$6.65538 - 4.81795I$
$u = 0.92749 + 1.66068I$ $a = -0.655993 - 0.321210I$ $b = 0.074998 + 1.387310I$	$16.9219 - 0.9403I$	$9.61641 + 0.21990I$
$u = 0.92749 - 1.66068I$ $a = -0.655993 + 0.321210I$ $b = 0.074998 - 1.387310I$	$16.9219 + 0.9403I$	$9.61641 - 0.21990I$

VI. $\boldsymbol{I_6^u = \langle b + u,\ u^5 + 3u^3 + a + 3u,\ u^6 + 3u^4 + u^3 + 3u^2 + 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^5 - u^4 - 8u^3 - 3u^2 - 7u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8	$y^6 + 6y^5 + 15y^4 + 19y^3 + 11y^2 + 2y + 1$
c_2, c_{10}	$y^6 - 3y^5 - y^4 + 5y^3 + 10y^2 + 4y + 1$
c_3	$y^6 + y^5 + 19y^4 + 45y^3 + 126y^2 + 36y + 25$
c_6	$y^6 - 6y^5 + 15y^4 - 14y^3 + 25y^2 - 12y + 16$
c_7, c_{11}	$y^6 - 4y^5 + 10y^4 - 11y^3 + 11y^2 - 3y + 1$
c_9, c_{12}	$y^6 + 3y^5 - 2y^4 - 8y^3 + 9y^2 + 24y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.490990 + 1.225090I$ $a = 1.022090 + 0.499718I$ $b = -0.490990 - 1.225090I$	$13.51720 - 2.21119I$	$7.59544 + 2.41868I$
$u = 0.490990 - 1.225090I$ $a = 1.022090 - 0.499718I$ $b = -0.490990 + 1.225090I$	$13.51720 + 2.21119I$	$7.59544 - 2.41868I$
$u = -0.087695 + 1.321290I$ $a = 0.211862 - 0.985256I$ $b = 0.087695 - 1.321290I$	$4.04340 + 1.92846I$	$5.16582 - 2.69980I$
$u = -0.087695 - 1.321290I$ $a = 0.211862 + 0.985256I$ $b = 0.087695 + 1.321290I$	$4.04340 - 1.92846I$	$5.16582 + 2.69980I$
$u = -0.403296 + 0.405883I$ $a = 0.76605 - 1.56714I$ $b = 0.403296 - 0.405883I$	$0.533692 - 0.482626I$	$3.73874 - 2.77770I$
$u = -0.403296 - 0.405883I$ $a = 0.76605 + 1.56714I$ $b = 0.403296 + 0.405883I$	$0.533692 + 0.482626I$	$3.73874 + 2.77770I$

VII. $\boldsymbol{I^u_7 = \langle -u^3 + b - 2u - 1,\ a + 1,\ u^6 + 3u^4 + u^3 + 3u^2 + 2u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^5 - u^4 - 8u^3 - 3u^2 - 7u + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_9 c_{12}	$y^6 + 6y^5 + 15y^4 + 19y^3 + 11y^2 + 2y + 1$
c_2	$y^6 - 6y^5 + 15y^4 - 14y^3 + 25y^2 - 12y + 16$
c_3, c_7	$y^6 - 4y^5 + 10y^4 - 11y^3 + 11y^2 - 3y + 1$
c_5, c_8	$y^6 + 3y^5 - 2y^4 - 8y^3 + 9y^2 + 24y + 16$
c_6, c_{10}	$y^6 - 3y^5 - y^4 + 5y^3 + 10y^2 + 4y + 1$
c_{11}	$y^6 + y^5 + 19y^4 + 45y^3 + 126y^2 + 36y + 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_7	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.490990 + 1.225090I$ $a = -1.00000$ $b = -0.11037 + 1.49751I$	$13.51720 - 2.21119I$	$7.59544 + 2.41868I$
$u = 0.490990 - 1.225090I$ $a = -1.00000$ $b = -0.11037 - 1.49751I$	$13.51720 + 2.21119I$	$7.59544 - 2.41868I$
$u = -0.087695 + 1.321290I$ $a = -1.00000$ $b = 1.283230 + 0.366334I$	$4.04340 + 1.92846I$	$5.16582 - 2.69980I$
$u = -0.087695 - 1.321290I$ $a = -1.00000$ $b = 1.283230 - 0.366334I$	$4.04340 - 1.92846I$	$5.16582 + 2.69980I$
$u = -0.403296 + 0.405883I$ $a = -1.00000$ $b = 0.327132 + 0.942948I$	$0.533692 - 0.482626I$	$3.73874 - 2.77770I$
$u = -0.403296 - 0.405883I$ $a = -1.00000$ $b = 0.327132 - 0.942948I$	$0.533692 + 0.482626I$	$3.73874 + 2.77770I$

VIII. $I^u_8 = \langle -u^5 - u^4 - 4u^3 - 6u^2 + 4b - 7u - 6,\ 3u^5 + 7u^4 + 16u^3 + 22u^2 + 8a + 21u + 10,\ u^6 + 3u^5 + 6u^4 + 10u^3 + 11u^2 + 8u + 4\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{3}{8}u^5 - \frac{7}{8}u^4 + \cdots - \frac{21}{8}u - \frac{5}{4} \\ \frac{1}{4}u^5 + \frac{1}{4}u^4 + \cdots + \frac{7}{4}u + \frac{3}{2} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{8}u^5 - \frac{5}{8}u^4 + \cdots - \frac{7}{8}u + \frac{1}{4} \\ \frac{1}{4}u^5 + \frac{1}{4}u^4 + \cdots + \frac{7}{4}u + \frac{3}{2} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{8}u^5 - \frac{1}{8}u^4 + \cdots + \frac{9}{8}u + \frac{7}{4} \\ -\frac{1}{4}u^5 - \frac{1}{4}u^4 + \cdots + \frac{1}{4}u - \frac{1}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -\frac{1}{8}u^5 - \frac{5}{8}u^4 + \cdots - \frac{15}{8}u - \frac{3}{4} \\ -\frac{1}{4}u^5 - \frac{1}{4}u^4 + \cdots + \frac{1}{4}u + \frac{1}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{8}u^5 + \frac{1}{8}u^4 + \cdots + \frac{7}{8}u + \frac{5}{4} \\ -\frac{1}{4}u^5 - \frac{1}{4}u^4 + \cdots + \frac{5}{4}u - \frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{8}u^5 + \frac{1}{8}u^4 + \cdots - \frac{1}{8}u + \frac{1}{4} \\ -\frac{3}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{5}{4}u - \frac{3}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{3}{8}u^5 + \frac{3}{8}u^4 + \cdots + \frac{21}{8}u + \frac{11}{4} \\ -\frac{7}{4}u^5 - \frac{15}{4}u^4 + \cdots - \frac{29}{4}u - \frac{11}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{5}{8}u^5 + \frac{13}{8}u^4 + \cdots + \frac{35}{8}u + \frac{9}{4} \\ -\frac{3}{4}u^5 - \frac{3}{4}u^4 + \cdots - \frac{1}{4}u - \frac{3}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 2u^5 + 5u^4 + 9u^3 + 12u^2 + 11u + 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^6 + 3y^5 - 2y^4 - 8y^3 + 9y^2 + 24y + 16$
c_2, c_6	$y^6 - 3y^5 - y^4 + 5y^3 + 10y^2 + 4y + 1$
c_3, c_{11}	$y^6 - 4y^5 + 10y^4 - 11y^3 + 11y^2 - 3y + 1$
c_5, c_8, c_9 c_{12}	$y^6 + 6y^5 + 15y^4 + 19y^3 + 11y^2 + 2y + 1$
c_7	$y^6 + y^5 + 19y^4 + 45y^3 + 126y^2 + 36y + 25$
c_{10}	$y^6 - 6y^5 + 15y^4 - 14y^3 + 25y^2 - 12y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.327132 + 0.942948I$ $a = 0.251761 - 0.515038I$ $b = 0.403296 + 0.405883I$	$0.533692 + 0.482626I$	$3.73874 + 2.77770I$
$u = -0.327132 - 0.942948I$ $a = 0.251761 + 0.515038I$ $b = 0.403296 - 0.405883I$	$0.533692 - 0.482626I$	$3.73874 - 2.77770I$
$u = -1.283230 + 0.366334I$ $a = 0.208605 - 0.970108I$ $b = 0.087695 + 1.321290I$	$4.04340 - 1.92846I$	$5.16582 + 2.69980I$
$u = -1.283230 - 0.366334I$ $a = 0.208605 + 0.970108I$ $b = 0.087695 - 1.321290I$	$4.04340 + 1.92846I$	$5.16582 - 2.69980I$
$u = 0.11037 + 1.49751I$ $a = 0.789634 + 0.386067I$ $b = -0.490990 + 1.225090I$	$13.51720 + 2.21119I$	$7.59544 - 2.41868I$
$u = 0.11037 - 1.49751I$ $a = 0.789634 - 0.386067I$ $b = -0.490990 - 1.225090I$	$13.51720 - 2.21119I$	$7.59544 + 2.41868I$

IX. $I_9^u = \langle u^5 + u^3 - 2au + 2u^2 + 2b - 3u + 1,\ u^5a + 25u^5 + \cdots + 9a + 141,\ u^6 + u^5 + 3u^4 + 5u^3 + 3u^2 + 6u + 1\rangle$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a \\ -\frac{1}{2}u^5 - \frac{1}{2}u^3 + \cdots + \frac{3}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -\frac{1}{2}u^5 - \frac{1}{2}u^3 + \cdots + a - \frac{1}{2} \\ -\frac{1}{2}u^5 - \frac{1}{2}u^3 + \cdots + \frac{3}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^5a + \frac{5}{2}u^5 + \cdots + \frac{1}{2}a + \frac{25}{2} \\ \frac{1}{2}u^5a + u^4a + \cdots + \frac{1}{2}a - 1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^5a - 2u^5 + \cdots + 2a - 14 \\ u^4a + \frac{1}{2}u^5 + \cdots + \frac{3}{2}u + \frac{1}{2} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{2}u^5a + \frac{5}{2}u^5 + \cdots + \frac{1}{2}a + \frac{25}{2} \\ -\frac{1}{2}u^5 - u^4 + \cdots - \frac{3}{2}u - \frac{5}{2} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4a + \frac{3}{2}u^5 + \cdots + \frac{13}{2}u + \frac{21}{2} \\ -\frac{1}{2}u^5a - \frac{1}{2}u^5 + \cdots + \frac{1}{2}a - \frac{1}{2} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^4a + \frac{5}{2}u^5 + \cdots + \frac{11}{2}u + \frac{25}{2} \\ \frac{1}{2}u^5a - \frac{3}{2}u^3a + \cdots - \frac{1}{2}a - 2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} \frac{1}{2}u^5a + 2u^5 + \cdots + \frac{1}{2}a + 12 \\ u^5a - \frac{1}{2}u^5 + \cdots - \frac{7}{2}u - \frac{5}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8, c_9, c_{12}	$(y^6 + 5y^5 + 5y^4 - 17y^3 - 45y^2 - 30y + 1)^2$
c_2, c_6, c_{10}	$(y^6 - 7y^5 + 13y^4 + 3y^3 + 11y^2 - 110y + 25)^2$
c_3, c_7, c_{11}	$(y^6 - 9y^5 + 38y^4 - 125y^3 + 198y^2 - 169y + 121)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.074296 + 1.332720I$ $a = -0.993804 + 0.111150I$ $b = 1.46944$	4.27683	6.00000
$u = -0.074296 + 1.332720I$ $a = 0.061277 + 1.099180I$ $b = 0.074296 + 1.332720I$	4.27683	6.00000
$u = -0.074296 - 1.332720I$ $a = -0.993804 - 0.111150I$ $b = 1.46944$	4.27683	6.00000
$u = -0.074296 - 1.332720I$ $a = 0.061277 - 1.099180I$ $b = 0.074296 - 1.332720I$	4.27683	6.00000
$u = 0.39818 + 1.40835I$ $a = -0.851965 - 0.523598I$ $b = 0.178322$	12.1725	6.00000
$u = 0.39818 + 1.40835I$ $a = -0.0331482 + 0.1172450I$ $b = -0.39818 + 1.40835I$	12.1725	6.00000
$u = 0.39818 - 1.40835I$ $a = -0.851965 + 0.523598I$ $b = 0.178322$	12.1725	6.00000
$u = 0.39818 - 1.40835I$ $a = -0.0331482 - 0.1172450I$ $b = -0.39818 - 1.40835I$	12.1725	6.00000
$u = -1.46944$ $a = 0.050561 + 0.906954I$ $b = 0.074296 - 1.332720I$	4.27683	6.00000
$u = -1.46944$ $a = 0.050561 - 0.906954I$ $b = 0.074296 + 1.332720I$	4.27683	6.00000

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.178322$ $a=-2.23292+7.89784I$ $b=-0.39818-1.40835I$	12.1725	6.00000
$u=-0.178322$ $a=-2.23292-7.89784I$ $b=-0.39818+1.40835I$	12.1725	6.00000

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_9	$(u^6+3u^4-u^3+3u^2-2u+1)^2$ $\cdot(u^6-3u^5+6u^4-10u^3+11u^2-8u+4)$ $\cdot(u^6-u^5+3u^4-u^3+2u^2-u+1)(u^6+u^5+3u^4+5u^3+3u^2+6u+1)^2$ $\cdot(u^7-2u^6+\cdots-3u^2-1)(u^{14}-7u^{13}+\cdots-16u+4)$ $\cdot(u^{14}+u^{13}+\cdots+4u+1)^2$
c_2, c_6, c_{10}	$(u^6-3u^5+3u^4-3u^3+4u^2-2u+1)^2$ $\cdot(u^6+u^5-3u^4-u^3+u^2-10u-5)^2$ $\cdot(u^6+4u^5+\cdots+6u+4)(u^6+4u^5+5u^4+3u^3+2u^2+1)$ $\cdot(u^7-5u^6+7u^5-3u^3-2u^2+u-1)(u^{14}-8u^{13}+\cdots-100u+52)$ $\cdot(u^{14}+4u^{13}+\cdots-3u^2+1)^2$
c_3, c_7, c_{11}	$(u^6-2u^4-u^3+3u^2+3u+1)^2(u^6-u^5-4u^4+11u^3-13u+11)^2$ $\cdot(u^6-u^5+u^4-u^3+10u^2+8u+5)(u^6+2u^5-u^4-3u^3+u^2-u+2)$ $\cdot(u^7+6u^6+15u^5+17u^4+7u^3-3u^2-2u+2)$ $\cdot((u^{14}-4u^{13}+\cdots-27u+7)^2)(u^{14}+14u^{13}+\cdots+384u+64)$
c_4, c_8, c_{12}	$(u^6+3u^4+u^3+3u^2+2u+1)^2(u^6+u^5+3u^4+u^3+2u^2+u+1)$ $\cdot(u^6+u^5+3u^4+5u^3+3u^2+6u+1)^2$ $\cdot(u^6+3u^5+6u^4+10u^3+11u^2+8u+4)$ $\cdot(u^7-2u^6+\cdots-3u^2-1)(u^{14}-7u^{13}+\cdots-16u+4)$ $\cdot(u^{14}+u^{13}+\cdots+4u+1)^2$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8, c_9, c_{12}	$(y^6+3y^5-2y^4-8y^3+9y^2+24y+16)$ $\cdot (y^6+5y^5+5y^4-17y^3-45y^2-30y+1)^2$ $\cdot (y^6+5y^5+11y^4+11y^3+8y^2+3y+1)$ $\cdot (y^6+6y^5+15y^4+19y^3+11y^2+2y+1)^2$ $\cdot (y^7+8y^6+26y^5+36y^4+9y^3-21y^2-6y-1)$ $\cdot (y^{14}+7y^{13}+\cdots+80y+16)(y^{14}+15y^{13}+\cdots-8y+1)^2$
c_2, c_6, c_{10}	$(y^6-7y^5+13y^4+3y^3+11y^2-110y+25)^2$ $\cdot (y^6-6y^5+5y^4+13y^3+14y^2+4y+1)$ $\cdot (y^6-6y^5+15y^4-14y^3+25y^2-12y+16)$ $\cdot (y^6-3y^5-y^4+5y^3+10y^2+4y+1)^2$ $\cdot (y^7-11y^6+43y^5-60y^4+13y^3-10y^2-3y-1)$ $\cdot ((y^{14}-22y^{13}+\cdots-6y+1)^2)(y^{14}-14y^{13}+\cdots+6016y+2704)$
c_3, c_7, c_{11}	$(y^6-9y^5+38y^4-125y^3+198y^2-169y+121)^2$ $\cdot (y^6-6y^5+15y^4-3y^3-9y^2+3y+4)$ $\cdot (y^6-4y^5+10y^4-11y^3+11y^2-3y+1)^2$ $\cdot (y^6+y^5+19y^4+45y^3+126y^2+36y+25)$ $\cdot (y^7-6y^6+35y^5-47y^4+67y^3-105y^2+16y-4)$ $\cdot ((y^{14}-16y^{13}+\cdots+69y+49)^2)(y^{14}-2y^{13}+\cdots+53248y+4096)$