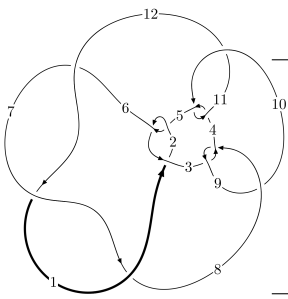
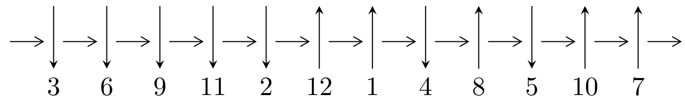
$12a_{0396}$ ($K12a_{0396}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -8u^{32} - 8u^{31} + \cdots + 16b - 30,\ 5u^{32} + 9u^{31} + \cdots + 32a + 50,\ u^{33} + 7u^{31} + \cdots + 6u^2 + 2\rangle$$

$$I_2^u = \langle -2.64825 \times 10^{24}u^{49} - 8.95879 \times 10^{24}u^{48} + \cdots + 5.05220 \times 10^{25}b - 7.19242 \times 10^{25},$$
$$- 1.59826 \times 10^{25}u^{49} - 1.45944 \times 10^{25}u^{48} + \cdots + 5.05220 \times 10^{25}a + 1.62536 \times 10^{26},$$
$$u^{50} + 2u^{49} + \cdots + 44u + 8\rangle$$

$$I_3^u = \langle -u^3a + a^2u - 2u^3 - a^2 - au + 2b - 2a - 2,$$
$$2u^3a^2 - 2a^2u^2 + u^3a + 2a^3 + 4a^2u - 3u^2a + u^3 + 2a^2 - 3u^2 + a + 2u - 1,\ u^4 + u^2 + u + 1\rangle$$

$$I_4^u = \langle b - 1,\ u^2 + 2a + u,\ u^4 + u^2 + 2\rangle$$

$$I_5^u = \langle a^3u + a^3 - a^2u + 2a^2 - 3au + b - 3a - u - 3,\ 2a^4 - 3a^3u + a^3 - 6a^2 + 3au - 5a + u - 1,\ u^2 + 1\rangle$$

$$I_6^u = \langle -u^5a^2 + 2u^5a + \cdots - 4a + 4,$$
$$2u^5a^2 - 2u^5a + 2u^3a^2 + 3u^4a - 2a^2u^2 - 3u^3a + 2u^4 + a^3 + 2a^2u + 2u^2a - 2a^2 - 4au + 2u^2 + 4a - 2u,$$
$$u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$$

$$I_7^u = \langle b + 1,\ u^3 - u^2 + 2a + u + 1,\ u^4 + 1\rangle$$

$$I_1^v = \langle a,\ b + 1,\ v - 1\rangle$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 130 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. $\boldsymbol{I_1^u = \langle -8u^{32} - 8u^{31} + \cdots + 16b - 30,\ 5u^{32} + 9u^{31} + \cdots + 32a + 50,\ u^{33} + 7u^{31} + \cdots + 6u^2 + 2\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.156250u^{32} - 0.281250u^{31} + \cdots + 0.187500u - 1.56250 \\ \frac{1}{2}u^{32} + \frac{1}{2}u^{31} + \cdots + \frac{21}{8}u + \frac{15}{8} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.156250u^{32} - 0.218750u^{31} + \cdots + 1.43750u - 0.562500 \\ 0.687500u^{32} + 0.687500u^{31} + \cdots + 3.25000u + 2.75000 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.281250u^{32} + 0.281250u^{31} + \cdots + 0.812500u + 1.56250 \\ \frac{3}{16}u^{32} - \frac{9}{16}u^{31} + \cdots + \frac{9}{8}u - \frac{11}{8} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^4 - u^2 - 1 \\ -\frac{1}{8}u^{31} - \frac{3}{4}u^{29} + \cdots - \frac{5}{2}u^2 - \frac{1}{4} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.156250u^{32} + 0.218750u^{31} + \cdots - 1.43750u + 0.562500 \\ \frac{1}{4}u^{32} + \frac{3}{16}u^{31} + \cdots + \frac{25}{8}u + \frac{5}{4} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ -\frac{1}{8}u^{32} - \frac{3}{4}u^{30} + \cdots - \frac{5}{2}u^3 + \frac{3}{4}u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ -\frac{1}{8}u^{31} - \frac{3}{4}u^{29} + \cdots - \frac{5}{2}u^2 - \frac{1}{4} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{23}{8}u^{32} + \frac{11}{8}u^{31} + \cdots - \frac{29}{4}u + \frac{17}{4}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{33} + 12u^{32} + \cdots + 521u + 121$
c_2, c_5	$u^{33} + 6u^{32} + \cdots + 31u + 11$
c_3, c_4, c_8 c_{10}	$u^{33} + 7u^{31} + \cdots + 6u^2 + 2$
c_6, c_7, c_{12}	$u^{33} - 6u^{32} + \cdots + 43u + 11$
c_9, c_{11}	$u^{33} - 14u^{32} + \cdots - 24u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{33} + 24y^{32} + \cdots - 121083y - 14641$
c_2, c_5	$y^{33} - 12y^{32} + \cdots + 521y - 121$
c_3, c_4, c_8 c_{10}	$y^{33} + 14y^{32} + \cdots - 24y - 4$
c_6, c_7, c_{12}	$y^{33} - 36y^{32} + \cdots + 441y - 121$
c_9, c_{11}	$y^{33} + 18y^{32} + \cdots + 1024y - 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.915077 + 0.392052I$ $a = 0.964198 - 0.704112I$ $b = 1.39433 - 0.29710I$	$1.39980 - 6.40207I$	$-2.78525 + 3.47464I$
$u = -0.915077 - 0.392052I$ $a = 0.964198 + 0.704112I$ $b = 1.39433 + 0.29710I$	$1.39980 + 6.40207I$	$-2.78525 - 3.47464I$
$u = 0.521343 + 0.878780I$ $a = 0.278469 + 1.164920I$ $b = -1.006190 + 0.409437I$	$1.86625 - 5.18521I$	$2.35796 + 8.34892I$
$u = 0.521343 - 0.878780I$ $a = 0.278469 - 1.164920I$ $b = -1.006190 - 0.409437I$	$1.86625 + 5.18521I$	$2.35796 - 8.34892I$
$u = 0.717553 + 0.749593I$ $a = 0.129136 - 1.144270I$ $b = 0.033872 - 0.657961I$	$-4.49859 - 4.89069I$	$-7.87872 + 6.56643I$
$u = 0.717553 - 0.749593I$ $a = 0.129136 + 1.144270I$ $b = 0.033872 + 0.657961I$	$-4.49859 + 4.89069I$	$-7.87872 - 6.56643I$
$u = 0.347167 + 1.041210I$ $a = -0.857157 - 0.206509I$ $b = 1.59638 + 0.20692I$	$10.63600 + 1.24046I$	$4.58607 + 3.80858I$
$u = 0.347167 - 1.041210I$ $a = -0.857157 + 0.206509I$ $b = 1.59638 - 0.20692I$	$10.63600 - 1.24046I$	$4.58607 - 3.80858I$
$u = 0.762745 + 0.444328I$ $a = -0.56231 - 1.38622I$ $b = -0.196556 - 0.752591I$	$-3.68416 + 2.61049I$	$-7.80738 - 1.77247I$
$u = 0.762745 - 0.444328I$ $a = -0.56231 + 1.38622I$ $b = -0.196556 + 0.752591I$	$-3.68416 - 2.61049I$	$-7.80738 + 1.77247I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.823813 + 0.245550I$ $a = 0.805044 + 0.420154I$ $b = 1.365110 + 0.173472I$	$3.45677 + 1.23306I$	$-0.418871 + 0.738062I$
$u = 0.823813 - 0.245550I$ $a = 0.805044 - 0.420154I$ $b = 1.365110 - 0.173472I$	$3.45677 - 1.23306I$	$-0.418871 - 0.738062I$
$u = -0.473645 + 1.050870I$ $a = -0.268275 + 0.246204I$ $b = -0.657658 + 0.770559I$	$3.04967 + 2.32264I$	$1.80922 - 1.99961I$
$u = -0.473645 - 1.050870I$ $a = -0.268275 - 0.246204I$ $b = -0.657658 - 0.770559I$	$3.04967 - 2.32264I$	$1.80922 + 1.99961I$
$u = -0.396598 + 1.108560I$ $a = -0.883813 + 0.566525I$ $b = 1.61157 - 0.05524I$	$11.59150 + 5.51497I$	$5.96018 - 7.21704I$
$u = -0.396598 - 1.108560I$ $a = -0.883813 - 0.566525I$ $b = 1.61157 + 0.05524I$	$11.59150 - 5.51497I$	$5.96018 + 7.21704I$
$u = -0.835942 + 0.860558I$ $a = -0.692058 - 1.146520I$ $b = -1.296420 - 0.210819I$	$-0.38293 + 7.96970I$	$-0.94048 - 8.93222I$
$u = -0.835942 - 0.860558I$ $a = -0.692058 + 1.146520I$ $b = -1.296420 + 0.210819I$	$-0.38293 - 7.96970I$	$-0.94048 + 8.93222I$
$u = -0.649902 + 1.037910I$ $a = 0.858076 - 0.606711I$ $b = -0.185341 - 0.364626I$	$-2.69171 + 5.74108I$	$-6.75405 - 5.32867I$
$u = -0.649902 - 1.037910I$ $a = 0.858076 + 0.606711I$ $b = -0.185341 + 0.364626I$	$-2.69171 - 5.74108I$	$-6.75405 + 5.32867I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.040993 + 0.770747I$ $a = 1.47224 + 0.23255I$ $b = -1.59948 + 0.10021I$	$9.08975 - 3.34368I$	$-2.92320 + 4.06886I$
$u = 0.040993 - 0.770747I$ $a = 1.47224 - 0.23255I$ $b = -1.59948 - 0.10021I$	$9.08975 + 3.34368I$	$-2.92320 - 4.06886I$
$u = 0.771934 + 1.013930I$ $a = -0.632971 + 0.675979I$ $b = -1.245670 - 0.061329I$	$0.57566 - 4.29905I$	$2.61702 + 1.07304I$
$u = 0.771934 - 1.013930I$ $a = -0.632971 - 0.675979I$ $b = -1.245670 + 0.061329I$	$0.57566 + 4.29905I$	$2.61702 - 1.07304I$
$u = -0.591756 + 1.172490I$ $a = 0.718848 - 1.111970I$ $b = -0.333529 - 0.923419I$	$0.84237 + 13.11040I$	$-0.78548 - 9.94308I$
$u = -0.591756 - 1.172490I$ $a = 0.718848 + 1.111970I$ $b = -0.333529 + 0.923419I$	$0.84237 - 13.11040I$	$-0.78548 + 9.94308I$
$u = -0.564519 + 1.207290I$ $a = -0.64338 + 1.66167I$ $b = 1.51399 + 0.28516I$	$9.1548 + 11.5989I$	$4.91327 - 6.70032I$
$u = -0.564519 - 1.207290I$ $a = -0.64338 - 1.66167I$ $b = 1.51399 - 0.28516I$	$9.1548 - 11.5989I$	$4.91327 + 6.70032I$
$u = 0.609861 + 1.220400I$ $a = -0.47129 - 1.90074I$ $b = 1.47614 - 0.36873I$	$6.6338 - 17.7809I$	$2.21241 + 10.23989I$
$u = 0.609861 - 1.220400I$ $a = -0.47129 + 1.90074I$ $b = 1.47614 + 0.36873I$	$6.6338 + 17.7809I$	$2.21241 - 10.23989I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.028409 + 0.547371I$ $a = -0.373780 + 0.278891I$ $b = 0.692239 + 0.437691I$	$1.18727 + 1.45039I$	$0.42798 - 3.86280I$
$u = 0.028409 - 0.547371I$ $a = -0.373780 - 0.278891I$ $b = 0.692239 - 0.437691I$	$1.18727 - 1.45039I$	$0.42798 + 3.86280I$
$u = -0.392754$ $a = -1.68195$ $b = -0.325593$	-1.04636	-11.1810

II. $\boldsymbol{I_2^u = \langle -2.65 \times 10^{24}u^{49} - 8.96 \times 10^{24}u^{48} + \cdots + 5.05 \times 10^{25}b - 7.19 \times 10^{25},\ -1.60 \times 10^{25}u^{49} - 1.46 \times 10^{25}u^{48} + \cdots + 5.05 \times 10^{25}a + 1.63 \times 10^{26},\ u^{50} + 2u^{49} + \cdots + 44u + 8\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.316348u^{49} + 0.288873u^{48} + \cdots - 5.69866u - 3.21712 \\ 0.0524177u^{49} + 0.177324u^{48} + \cdots + 6.15670u + 1.42362 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.331848u^{49} + 0.381211u^{48} + \cdots + 2.15589u - 1.40233 \\ 0.0642354u^{49} + 0.233571u^{48} + \cdots + 11.1884u + 2.74771 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.396469u^{49} + 0.617854u^{48} + \cdots + 9.00772u + 1.32807 \\ 0.270674u^{49} + 0.480833u^{48} + \cdots + 15.1832u + 3.08494 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0.355248u^{49} + 0.291595u^{48} + \cdots - 0.394990u - 1.10912 \\ 0.0482855u^{49} + 0.111160u^{48} + \cdots + 5.80109u + 2.01284 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.421552u^{49} + 0.618093u^{48} + \cdots + 0.335698u - 2.40068 \\ 0.261028u^{49} + 0.573430u^{48} + \cdots + 19.0608u + 4.00464 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.181884u^{49} + 0.334958u^{48} + \cdots - 4.80912u - 2.81382 \\ 0.306884u^{49} + 0.584958u^{48} + \cdots + 16.4409u + 2.68618 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.335773u^{49} + 0.364661u^{48} + \cdots + 4.62064u - 0.666888 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{1898522637621677506109549}{3157627707198910369381082}u^{49} - \frac{4020305257773637481583771}{6315255414397820738762164}u^{48} + \cdots - \frac{1133527172502157591929938 1}{1578813853599455184690541}u + \frac{1203508006065254918095845}{1578813853599455184690541}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{25}+10u^{24}+\cdots+97u+9)^2$
c_2, c_5	$(u^{25}-2u^{24}+\cdots-u+3)^2$
c_3, c_4, c_8 c_{10}	$u^{50}+2u^{49}+\cdots+44u+8$
c_6, c_7, c_{12}	$(u^{25}+2u^{24}+\cdots-5u+3)^2$
c_9, c_{11}	$u^{50}-28u^{49}+\cdots-784u+64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{25} + 14y^{24} + \cdots + 1561y - 81)^2$
c_2, c_5	$(y^{25} - 10y^{24} + \cdots + 97y - 9)^2$
c_3, c_4, c_8 c_{10}	$y^{50} + 28y^{49} + \cdots + 784y + 64$
c_6, c_7, c_{12}	$(y^{25} - 26y^{24} + \cdots - 47y - 9)^2$
c_9, c_{11}	$y^{50} - 12y^{49} + \cdots + 68864y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.966918 + 0.270016I$ $a = -0.751464 - 0.895075I$ $b = -1.44066 - 0.34360I$	$3.73131 + 12.07650I$	$-0.57661 - 7.22441I$
$u = 0.966918 - 0.270016I$ $a = -0.751464 + 0.895075I$ $b = -1.44066 + 0.34360I$	$3.73131 - 12.07650I$	$-0.57661 + 7.22441I$
$u = -0.775444 + 0.545505I$ $a = -0.414542 - 0.876936I$ $b = 0.066602 - 0.499012I$	$-4.14430 - 0.37131I$	$-8.72924 - 0.01538I$
$u = -0.775444 - 0.545505I$ $a = -0.414542 + 0.876936I$ $b = 0.066602 + 0.499012I$	$-4.14430 + 0.37131I$	$-8.72924 + 0.01538I$
$u = 0.201989 + 1.059430I$ $a = -0.09976 + 1.59657I$ $b = -0.708151$	4.19892	$8.09367 + 0.I$
$u = 0.201989 - 1.059430I$ $a = -0.09976 - 1.59657I$ $b = -0.708151$	4.19892	$8.09367 + 0.I$
$u = -0.869538 + 0.298974I$ $a = 0.334522 - 1.368370I$ $b = 0.281632 - 0.858743I$	$-1.77513 - 7.73599I$	$-4.26723 + 6.67404I$
$u = -0.869538 - 0.298974I$ $a = 0.334522 + 1.368370I$ $b = 0.281632 + 0.858743I$	$-1.77513 + 7.73599I$	$-4.26723 - 6.67404I$
$u = -0.895045 + 0.202572I$ $a = -0.593420 + 0.550719I$ $b = -1.45092 + 0.25712I$	$6.14042 - 6.29490I$	$2.20266 + 3.49250I$
$u = -0.895045 - 0.202572I$ $a = -0.593420 - 0.550719I$ $b = -1.45092 - 0.25712I$	$6.14042 + 6.29490I$	$2.20266 - 3.49250I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.665448 + 0.869585I$ $a = -0.918930 - 0.862702I$ $b = 0.066602 - 0.499012I$	$-4.14430 - 0.37131I$	$-8.72924 + 0.I$
$u = 0.665448 - 0.869585I$ $a = -0.918930 + 0.862702I$ $b = 0.066602 + 0.499012I$	$-4.14430 + 0.37131I$	$-8.72924 + 0.I$
$u = -0.437535 + 1.037370I$ $a = 0.79029 - 1.70199I$ $b = -0.360930 - 0.736826I$	$3.32486 + 4.24383I$	$0.60496 - 6.78537I$
$u = -0.437535 - 1.037370I$ $a = 0.79029 + 1.70199I$ $b = -0.360930 + 0.736826I$	$3.32486 - 4.24383I$	$0.60496 + 6.78537I$
$u = 0.898759 + 0.681190I$ $a = 0.898999 - 0.731480I$ $b = 1.273790 - 0.131362I$	$-0.43185 - 1.83282I$	$0. + 4.01286I$
$u = 0.898759 - 0.681190I$ $a = 0.898999 + 0.731480I$ $b = 1.273790 + 0.131362I$	$-0.43185 + 1.83282I$	$0. - 4.01286I$
$u = -0.024231 + 1.181170I$ $a = 0.523985 + 0.397590I$ $b = 0.276341 + 0.419444I$	$1.76402 + 1.04428I$	$-5.27127 - 1.42914I$
$u = -0.024231 - 1.181170I$ $a = 0.523985 - 0.397590I$ $b = 0.276341 - 0.419444I$	$1.76402 - 1.04428I$	$-5.27127 + 1.42914I$
$u = -0.836400 + 0.845826I$ $a = 0.914347 + 0.357065I$ $b = 1.273790 - 0.131362I$	$-0.43185 - 1.83282I$	$0. + 4.01286I$
$u = -0.836400 - 0.845826I$ $a = 0.914347 - 0.357065I$ $b = 1.273790 + 0.131362I$	$-0.43185 + 1.83282I$	$0. - 4.01286I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.550448 + 1.066430I$ $a = 0.12223 - 2.40447I$ $b = 1.45602 - 0.27617I$	$9.17748 - 7.92352I$	$3.71863 + 6.25521I$
$u = 0.550448 - 1.066430I$ $a = 0.12223 + 2.40447I$ $b = 1.45602 + 0.27617I$	$9.17748 + 7.92352I$	$3.71863 - 6.25521I$
$u = 0.209739 + 0.755305I$ $a = 0.064242 + 0.285254I$ $b = 0.684260 + 0.499844I$	$1.19934 + 1.42730I$	$-0.30682 - 4.01748I$
$u = 0.209739 - 0.755305I$ $a = 0.064242 - 0.285254I$ $b = 0.684260 - 0.499844I$	$1.19934 - 1.42730I$	$-0.30682 + 4.01748I$
$u = -0.486500 + 1.134090I$ $a = -0.31834 + 2.07821I$ $b = 1.46767 + 0.15865I$	$10.93610 + 2.15851I$	$6.42476 + 0.I$
$u = -0.486500 - 1.134090I$ $a = -0.31834 - 2.07821I$ $b = 1.46767 - 0.15865I$	$10.93610 - 2.15851I$	$6.42476 + 0.I$
$u = 0.592659 + 1.085410I$ $a = -0.592610 - 1.250100I$ $b = 0.281632 - 0.858743I$	$-1.77513 - 7.73599I$	$0. + 6.67404I$
$u = 0.592659 - 1.085410I$ $a = -0.592610 + 1.250100I$ $b = 0.281632 + 0.858743I$	$-1.77513 + 7.73599I$	$0. - 6.67404I$
$u = 0.598799 + 0.472548I$ $a = -2.08191 - 0.65289I$ $b = -1.43420 - 0.17935I$	$7.40691 + 3.30443I$	$2.15585 - 1.80924I$
$u = 0.598799 - 0.472548I$ $a = -2.08191 + 0.65289I$ $b = -1.43420 + 0.17935I$	$7.40691 - 3.30443I$	$2.15585 + 1.80924I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.230191 + 1.233540I$ $a = 0.816301 + 0.437714I$ $b = -1.46552 - 0.03322I$	$8.27446 - 2.21818I$	0
$u = 0.230191 - 1.233540I$ $a = 0.816301 - 0.437714I$ $b = -1.46552 + 0.03322I$	$8.27446 + 2.21818I$	0
$u = -0.241098 + 1.258930I$ $a = -0.356897 + 0.269220I$ $b = -0.360930 + 0.736826I$	$3.32486 - 4.24383I$	0
$u = -0.241098 - 1.258930I$ $a = -0.356897 - 0.269220I$ $b = -0.360930 - 0.736826I$	$3.32486 + 4.24383I$	0
$u = -0.221133 + 0.682614I$ $a = 2.02855 - 1.71297I$ $b = 0.276341 - 0.419444I$	$1.76402 - 1.04428I$	$-5.27127 + 1.42914I$
$u = -0.221133 - 0.682614I$ $a = 2.02855 + 1.71297I$ $b = 0.276341 + 0.419444I$	$1.76402 + 1.04428I$	$-5.27127 - 1.42914I$
$u = 0.555645 + 1.156390I$ $a = 0.45124 + 1.69756I$ $b = -1.45092 + 0.25712I$	$6.14042 - 6.29490I$	0
$u = 0.555645 - 1.156390I$ $a = 0.45124 - 1.69756I$ $b = -1.45092 - 0.25712I$	$6.14042 + 6.29490I$	0
$u = -0.100716 + 1.304410I$ $a = 0.719569 + 0.115161I$ $b = -1.43420 + 0.17935I$	$7.40691 - 3.30443I$	0
$u = -0.100716 - 1.304410I$ $a = 0.719569 - 0.115161I$ $b = -1.43420 - 0.17935I$	$7.40691 + 3.30443I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.635007+1.157080I$ $a=\ \ 0.20430-1.91387I$ $b=-1.44066-0.34360I$	$3.73131+12.07650I$	0
$u=-0.635007-1.157080I$ $a=\ \ 0.20430+1.91387I$ $b=-1.44066+0.34360I$	$3.73131-12.07650I$	0
$u=-0.634382+0.206664I$ $a=-1.45945+0.94937I$ $b=-1.46552+0.03322I$	$8.27446+2.21818I$	$3.23817-3.39990I$
$u=-0.634382-0.206664I$ $a=-1.45945-0.94937I$ $b=-1.46552-0.03322I$	$8.27446-2.21818I$	$3.23817+3.39990I$
$u=-0.323168+1.297610I$ $a=-0.805615+0.515870I$ $b=\ \ 1.46767-0.15865I$	$10.93610-2.15851I$	0
$u=-0.323168-1.297610I$ $a=-0.805615-0.515870I$ $b=\ \ 1.46767+0.15865I$	$10.93610+2.15851I$	0
$u=\ \ 0.264445+1.349020I$ $a=-0.653958-0.006935I$ $b=\ \ 1.45602+0.27617I$	$9.17748+7.92352I$	0
$u=\ \ 0.264445-1.349020I$ $a=-0.653958+0.006935I$ $b=\ \ 1.45602-0.27617I$	$9.17748-7.92352I$	0
$u=-0.254843+0.414573I$ $a=-0.821673+0.925690I$ $b=\ \ 0.684260+0.499844I$	$1.19934+1.42730I$	$-0.30682-4.01748I$
$u=-0.254843-0.414573I$ $a=-0.821673-0.925690I$ $b=\ \ 0.684260-0.499844I$	$1.19934-1.42730I$	$-0.30682+4.01748I$

III. $I_3^u =$
$\langle -u^3a+a^2u-2u^3-a^2-au+2b-2a-2,\ 2u^3a^2+u^3a+\cdots+a-1,\ u^4+u^2+u+1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} a \\ \frac{1}{2}u^3a + u^3 + \cdots + a + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{2}u^3a^2 + u^3 + \cdots - \frac{1}{2}au + u \\ -\frac{1}{2}a^2u^2 + 2u^3 + \cdots + \frac{1}{2}a + 1 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u \\ -u^3 - u^2 - u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ u^3 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{12} - 8y^{11} + \cdots - 145y + 16$
c_2, c_5, c_6 c_7, c_{12}	$y^{12} - 8y^{11} + \cdots + 7y + 4$
c_3, c_4, c_8 c_{10}	$(y^4 + 2y^3 + 3y^2 + y + 1)^3$
c_9, c_{11}	$(y^4 + 2y^3 + 7y^2 + 5y + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = -0.379406 + 0.894323I$ $b = -0.065726 + 0.647819I$	$-0.98010 + 1.39709I$	$-3.77019 - 3.86736I$
$u = -0.547424 + 0.585652I$ $a = 0.020994 - 0.913447I$ $b = 1.178420 - 0.296033I$	$-0.98010 + 1.39709I$	$-3.77019 - 3.86736I$
$u = -0.547424 + 0.585652I$ $a = 0.01071 - 2.11902I$ $b = -1.112690 - 0.351786I$	$-0.98010 + 1.39709I$	$-3.77019 - 3.86736I$
$u = -0.547424 - 0.585652I$ $a = -0.379406 - 0.894323I$ $b = -0.065726 - 0.647819I$	$-0.98010 - 1.39709I$	$-3.77019 + 3.86736I$
$u = -0.547424 - 0.585652I$ $a = 0.020994 + 0.913447I$ $b = 1.178420 + 0.296033I$	$-0.98010 - 1.39709I$	$-3.77019 + 3.86736I$
$u = -0.547424 - 0.585652I$ $a = 0.01071 + 2.11902I$ $b = -1.112690 + 0.351786I$	$-0.98010 - 1.39709I$	$-3.77019 + 3.86736I$
$u = 0.547424 + 1.120870I$ $a = 0.622043 + 1.018910I$ $b = -0.501564 + 0.805554I$	$2.62503 - 7.64338I$	$1.77019 + 6.51087I$
$u = 0.547424 + 1.120870I$ $a = -0.424743 - 0.096257I$ $b = -0.917667 - 0.662119I$	$2.62503 - 7.64338I$	$1.77019 + 6.51087I$
$u = 0.547424 + 1.120870I$ $a = -1.34960 - 1.53668I$ $b = 1.41923 - 0.14344I$	$2.62503 - 7.64338I$	$1.77019 + 6.51087I$
$u = 0.547424 - 1.120870I$ $a = 0.622043 - 1.018910I$ $b = -0.501564 - 0.805554I$	$2.62503 + 7.64338I$	$1.77019 - 6.51087I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.547424 - 1.120870I$ $a = -0.424743 + 0.096257I$ $b = -0.917667 + 0.662119I$	$2.62503 + 7.64338I$	$1.77019 - 6.51087I$
$u = 0.547424 - 1.120870I$ $a = -1.34960 + 1.53668I$ $b = 1.41923 + 0.14344I$	$2.62503 + 7.64338I$	$1.77019 - 6.51087I$

IV. $I_4^u = \langle b-1,\ u^2+2a+u,\ u^4+u^2+2\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.676097 + 0.978318I$ $a = -0.088048 - 1.150600I$ $b = 1.00000$	$-0.82247 - 5.33349I$	$-2.00000 + 5.29150I$
$u = 0.676097 - 0.978318I$ $a = -0.088048 + 1.150600I$ $b = 1.00000$	$-0.82247 + 5.33349I$	$-2.00000 - 5.29150I$
$u = -0.676097 + 0.978318I$ $a = 0.588048 + 0.172279I$ $b = 1.00000$	$-0.82247 + 5.33349I$	$-2.00000 - 5.29150I$
$u = -0.676097 - 0.978318I$ $a = 0.588048 - 0.172279I$ $b = 1.00000$	$-0.82247 - 5.33349I$	$-2.00000 + 5.29150I$

V. $I^u_5 = \langle a^3u + a^3 - a^2u + 2a^2 - 3au + b - 3a - u - 3,\ 2a^4 - 3a^3u + a^3 - 6a^2 + 3au - 5a + u - 1,\ u^2 + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4a^3u + 4a^3 - 4a^2u - 8a^2 + 16au - 4a + 4u + 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.620943 + 0.162823I$ $b = 0.506844 + 0.395123I$	$3.07886 + 1.41510I$	$4.17326 - 4.90874I$
$u = 1.000000I$ $a = -1.23497 + 0.98948I$ $b = -0.506844 + 0.395123I$	$3.07886 - 1.41510I$	$4.17326 + 4.90874I$
$u = 1.000000I$ $a = -0.391114 + 0.016070I$ $b = 1.55249 + 0.10488I$	$10.08060 + 3.16396I$	$7.82674 - 2.56480I$
$u = 1.000000I$ $a = 1.74703 + 0.33163I$ $b = -1.55249 + 0.10488I$	$10.08060 - 3.16396I$	$7.82674 + 2.56480I$
$u = -1.000000I$ $a = -0.620943 - 0.162823I$ $b = 0.506844 - 0.395123I$	$3.07886 - 1.41510I$	$4.17326 + 4.90874I$
$u = -1.000000I$ $a = -1.23497 - 0.98948I$ $b = -0.506844 - 0.395123I$	$3.07886 + 1.41510I$	$4.17326 - 4.90874I$
$u = -1.000000I$ $a = -0.391114 - 0.016070I$ $b = 1.55249 - 0.10488I$	$10.08060 - 3.16396I$	$7.82674 + 2.56480I$
$u = -1.000000I$ $a = 1.74703 - 0.33163I$ $b = -1.55249 - 0.10488I$	$10.08060 + 3.16396I$	$7.82674 - 2.56480I$

VI. $I_6^u = \langle -u^5a^2 + 2u^5a + \cdots - 4a + 4,\ 2u^5a^2 - 2u^5a + \cdots - 2a^2 + 4a,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} a \\ \frac{1}{2}u^5a^2 - u^5a + \cdots + 2a - 2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{1}{2}u^5a^2 + \frac{1}{2}u^4a + \cdots + \frac{1}{2}a + u \\ \frac{3}{2}u^5a^2 - \frac{1}{2}u^5a + \cdots + a - 2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^5a^2 - u^5a + \cdots + a - 1 \\ \frac{1}{2}u^4a^2 + \frac{1}{2}u^5a + \cdots - a + 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^5a^2 - \frac{3}{2}u^5a + \cdots + 2a - 2 \\ -0.500000a^2u^5 + 0.500000au^5 + \cdots + 1.50000au + 0.500000a^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^5 + 2u^3 - u^2 + 2u - 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^5 - 2u^3 - u + 1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^9+6u^8+15u^7+21u^6+19u^5+12u^4+7u^3+5u^2+2u+1)^2$
c_2, c_5, c_6 c_7, c_{12}	$(u^9-3u^7+u^6+3u^5-2u^4-u^3+u^2-1)^2$
c_3, c_4, c_8 c_{10}	$(u^6-u^5+2u^4-2u^3+2u^2-2u+1)^3$
c_9, c_{11}	$(u^6-3u^5+4u^4-2u^3+1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^9 - 6y^8 + 11y^7 - y^6 + 11y^5 - 40y^4 - 37y^3 - 21y^2 - 6y - 1)^2$
c_2, c_5, c_6 c_7, c_{12}	$(y^9 - 6y^8 + 15y^7 - 21y^6 + 19y^5 - 12y^4 + 7y^3 - 5y^2 + 2y - 1)^2$
c_3, c_4, c_8 c_{10}	$(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)^3$
c_9, c_{11}	$(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = -0.506833 + 1.063700I$ $b = 0.376870 + 0.700062I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = -0.498832 + 1.001300I$ $a = 0.569605 - 0.236342I$ $b = 0.947946 - 0.524157I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = -0.498832 + 1.001300I$ $a = 1.26195 - 1.95192I$ $b = -1.324820 - 0.175904I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = -0.498832 - 1.001300I$ $a = -0.506833 - 1.063700I$ $b = 0.376870 - 0.700062I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$
$u = -0.498832 - 1.001300I$ $a = 0.569605 + 0.236342I$ $b = 0.947946 + 0.524157I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$
$u = -0.498832 - 1.001300I$ $a = 1.26195 + 1.95192I$ $b = -1.324820 + 0.175904I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$
$u = 0.284920 + 1.115140I$ $a = -0.685507 + 0.356513I$ $b = -0.631920 - 0.444935I$	4.40332	$5.01951 + 0.I$
$u = 0.284920 + 1.115140I$ $a = 0.62905 + 1.51049I$ $b = -0.631920 + 0.444935I$	4.40332	$5.01951 + 0.I$
$u = 0.284920 + 1.115140I$ $a = -2.59298 - 1.86700I$ $b = 1.26384$	4.40332	$5.01951 + 0.I$
$u = 0.284920 - 1.115140I$ $a = -0.685507 - 0.356513I$ $b = -0.631920 + 0.444935I$	4.40332	$5.01951 + 0.I$

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.284920 - 1.115140I$ $a = 0.62905 - 1.51049I$ $b = -0.631920 - 0.444935I$	4.40332	$5.01951 + 0.I$
$u = 0.284920 - 1.115140I$ $a = -2.59298 + 1.86700I$ $b = 1.26384$	4.40332	$5.01951 + 0.I$
$u = 0.713912 + 0.305839I$ $a = 0.448377 + 0.921693I$ $b = 0.376870 + 0.700062I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = 0.713912 + 0.305839I$ $a = 0.514842 - 0.510765I$ $b = -1.324820 - 0.175904I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = 0.713912 + 0.305839I$ $a = 0.36150 - 1.53549I$ $b = 0.947946 - 0.524157I$	$0.26574 + 2.82812I$	$-1.50976 - 2.97945I$
$u = 0.713912 - 0.305839I$ $a = 0.448377 - 0.921693I$ $b = 0.376870 - 0.700062I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$
$u = 0.713912 - 0.305839I$ $a = 0.514842 + 0.510765I$ $b = -1.324820 + 0.175904I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$
$u = 0.713912 - 0.305839I$ $a = 0.36150 + 1.53549I$ $b = 0.947946 + 0.524157I$	$0.26574 - 2.82812I$	$-1.50976 + 2.97945I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.707107 + 0.707107I$ $a = -0.500000 - 0.207107I$ $b = -1.00000$	-1.64493	-4.00000
$u = 0.707107 - 0.707107I$ $a = -0.500000 + 0.207107I$ $b = -1.00000$	-1.64493	-4.00000
$u = -0.707107 + 0.707107I$ $a = -0.500000 - 1.207110I$ $b = -1.00000$	-1.64493	-4.00000
$u = -0.707107 - 0.707107I$ $a = -0.500000 + 1.207110I$ $b = -1.00000$	-1.64493	-4.00000

VIII. $\boldsymbol{I_1^v = \langle a,\ b+1,\ v-1\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_8 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0\\-1\end{pmatrix}$$

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_6 = \begin{pmatrix}0\\1\end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix}1\\0\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_7, c_{12}	$y - 1$
c_3, c_4, c_8 c_9, c_{10}, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -1.00000$	0	0

IX. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^9(u^4-u^3+3u^2-2u+1)^2$ $\cdot(u^9+6u^8+15u^7+21u^6+19u^5+12u^4+7u^3+5u^2+2u+1)^2$ $\cdot(u^{12}+8u^{11}+\cdots-7u+4)(u^{25}+10u^{24}+\cdots+97u+9)^2$ $\cdot(u^{33}+12u^{32}+\cdots+521u+121)$
c_2	$(u-1)^5(u+1)^4(u^8-u^6+3u^4-2u^2+1)$ $\cdot(u^9-3u^7+u^6+3u^5-2u^4-u^3+u^2-1)^2$ $\cdot(u^{12}-4u^{10}-3u^9+6u^8+9u^7-9u^5-7u^4+4u^2+3u+2)$ $\cdot((u^{25}-2u^{24}+\cdots-u+3)^2)(u^{33}+6u^{32}+\cdots+31u+11)$
c_3, c_4, c_8 c_{10}	$u(u^2+1)^4(u^4+1)(u^4+u^2+2)(u^4+u^2+u+1)^3$ $\cdot((u^6-u^5+2u^4-2u^3+2u^2-2u+1)^3)(u^{33}+7u^{31}+\cdots+6u^2+2)$ $\cdot(u^{50}+2u^{49}+\cdots+44u+8)$
c_5	$(u-1)^4(u+1)^5(u^8-u^6+3u^4-2u^2+1)$ $\cdot(u^9-3u^7+u^6+3u^5-2u^4-u^3+u^2-1)^2$ $\cdot(u^{12}-4u^{10}-3u^9+6u^8+9u^7-9u^5-7u^4+4u^2+3u+2)$ $\cdot((u^{25}-2u^{24}+\cdots-u+3)^2)(u^{33}+6u^{32}+\cdots+31u+11)$
c_6, c_7	$(u-1)^4(u+1)^5(u^8-5u^6+7u^4-2u^2+1)$ $\cdot(u^9-3u^7+u^6+3u^5-2u^4-u^3+u^2-1)^2$ $\cdot(u^{12}-4u^{10}-3u^9+6u^8+9u^7-9u^5-7u^4+4u^2+3u+2)$ $\cdot((u^{25}+2u^{24}+\cdots-5u+3)^2)(u^{33}-6u^{32}+\cdots+43u+11)$
c_9, c_{11}	$u(u-1)^8(u^2+1)^2(u^2-u+2)^2(u^4-2u^3+3u^2-u+1)^3$ $\cdot((u^6-3u^5+4u^4-2u^3+1)^3)(u^{33}-14u^{32}+\cdots-24u+4)$ $\cdot(u^{50}-28u^{49}+\cdots-784u+64)$
c_{12}	$(u-1)^5(u+1)^4(u^8-5u^6+7u^4-2u^2+1)$ $\cdot(u^9-3u^7+u^6+3u^5-2u^4-u^3+u^2-1)^2$ $\cdot(u^{12}-4u^{10}-3u^9+6u^8+9u^7-9u^5-7u^4+4u^2+3u+2)$ $\cdot((u^{25}+2u^{24}+\cdots-5u+3)^2)(u^{33}-6u^{32}+\cdots+43u+11)$

X. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^9(y^4+5y^3+7y^2+2y+1)^2$ $\cdot (y^9-6y^8+11y^7-y^6+11y^5-40y^4-37y^3-21y^2-6y-1)^2$ $\cdot (y^{12}-8y^{11}+\cdots-145y+16)(y^{25}+14y^{24}+\cdots+1561y-81)^2$ $\cdot (y^{33}+24y^{32}+\cdots-121083y-14641)$
c_2, c_5	$(y-1)^9(y^4-y^3+3y^2-2y+1)^2$ $\cdot (y^9-6y^8+15y^7-21y^6+19y^5-12y^4+7y^3-5y^2+2y-1)^2$ $\cdot (y^{12}-8y^{11}+\cdots+7y+4)(y^{25}-10y^{24}+\cdots+97y-9)^2$ $\cdot (y^{33}-12y^{32}+\cdots+521y-121)$
c_3, c_4, c_8 c_{10}	$y(y+1)^8(y^2+1)^2(y^2+y+2)^2(y^4+2y^3+3y^2+y+1)^3$ $\cdot ((y^6+3y^5+4y^4+2y^3+1)^3)(y^{33}+14y^{32}+\cdots-24y-4)$ $\cdot (y^{50}+28y^{49}+\cdots+784y+64)$
c_6, c_7, c_{12}	$(y-1)^9(y^4-5y^3+7y^2-2y+1)^2$ $\cdot (y^9-6y^8+15y^7-21y^6+19y^5-12y^4+7y^3-5y^2+2y-1)^2$ $\cdot (y^{12}-8y^{11}+\cdots+7y+4)(y^{25}-26y^{24}+\cdots-47y-9)^2$ $\cdot (y^{33}-36y^{32}+\cdots+441y-121)$
c_9, c_{11}	$y(y-1)^8(y+1)^4(y^2+3y+4)^2(y^4+2y^3+7y^2+5y+1)^3$ $\cdot ((y^6-y^5+4y^4-2y^3+8y^2+1)^3)(y^{33}+18y^{32}+\cdots+1024y-16)$ $\cdot (y^{50}-12y^{49}+\cdots+68864y+4096)$