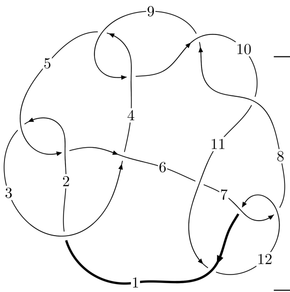
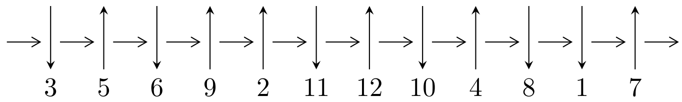
$12a_{0025}$ $(K12a_{0025})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle u^{19} - u^{18} + \cdots - u^2 + b,\ u^{19} - u^{18} + \cdots + a - u,\ u^{22} - u^{21} + \cdots - u + 1\rangle$$
$$I_2^u = \langle u^{73} - 3u^{72} + \cdots + b - 2,\ -2u^{72} - 30u^{70} + \cdots + a - u,\ u^{74} - 2u^{73} + \cdots - 3u + 1\rangle$$
$$I_3^u = \langle b + u + 2,\ a + 2,\ u^2 + u + 1\rangle$$
$$I_4^u = \langle b - 2u - 1,\ a - 2u - 2,\ u^2 + u + 1\rangle$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 100 representations.

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I.

$$\boldsymbol{I_1^u = \langle u^{19} - u^{18} + \cdots - u^2 + b,\ u^{19} - u^{18} + \cdots + a - u,\ u^{22} - u^{21} + \cdots - u + 1\rangle}$$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^{19} + u^{18} + \cdots + u^2 + u \\ -u^{19} + u^{18} + \cdots - 2u^3 + u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^{21} - u^{20} + \cdots - u^3 + u \\ u^{21} - u^{20} + \cdots - u^4 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{19} + u^{18} + \cdots - 3u^3 + u^2 \\ -u^{19} + u^{18} + \cdots - u^3 + u^2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^{20} + u^{19} + \cdots - u^2 + u \\ -u^{20} + u^{19} + \cdots + u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^7 - u^5 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{10} + 3u^8 + 4u^6 + 3u^4 + u^2 + 1 \\ -u^{12} - 2u^{10} - 2u^8 + u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= 4u^{21} - 8u^{20} + 26u^{19} - 42u^{18} + 82u^{17} - 116u^{16} + 164u^{15} - 198u^{14} + 226u^{13} - 232u^{12} + 234u^{11} - 206u^{10} + 198u^9 - 168u^8 + 152u^7 - 132u^6 + 100u^5 - 72u^4 + 50u^3 - 18u^2 + 14u - 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{22} + 11u^{21} + \cdots + 3u + 1$
c_2, c_5, c_7 c_{12}	$u^{22} + u^{21} + \cdots + u + 1$
c_3, c_6	$u^{22} - u^{21} + \cdots - 3u + 1$
c_4, c_9	$u^{22} + 5u^{21} + \cdots + 8u + 4$
c_8, c_{10}	$u^{22} + 5u^{21} + \cdots + 56u^2 + 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{22} + 3y^{21} + \cdots + 11y + 1$
c_2, c_5, c_7 c_{12}	$y^{22} + 11y^{21} + \cdots + 3y + 1$
c_3, c_6	$y^{22} - 5y^{21} + \cdots - 13y + 1$
c_4, c_9	$y^{22} + 5y^{21} + \cdots + 56y^2 + 16$
c_8, c_{10}	$y^{22} + 17y^{21} + \cdots + 1792y + 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.267420 + 0.934374I$ $a = 0.866808 + 0.905520I$ $b = 1.134230 - 0.028854I$	$-2.03960 - 2.30169I$	$-5.11682 + 3.55862I$
$u = -0.267420 - 0.934374I$ $a = 0.866808 - 0.905520I$ $b = 1.134230 + 0.028854I$	$-2.03960 + 2.30169I$	$-5.11682 - 3.55862I$
$u = 0.803411 + 0.448160I$ $a = 1.64165 - 0.62510I$ $b = 0.838235 - 1.073260I$	$6.81231 - 6.24031I$	$5.35592 + 2.94857I$
$u = 0.803411 - 0.448160I$ $a = 1.64165 + 0.62510I$ $b = 0.838235 + 1.073260I$	$6.81231 + 6.24031I$	$5.35592 - 2.94857I$
$u = -0.773574 + 0.483952I$ $a = -1.84656 - 0.54883I$ $b = -1.07298 - 1.03278I$	$7.30323 - 0.05327I$	$6.29197 + 2.01808I$
$u = -0.773574 - 0.483952I$ $a = -1.84656 + 0.54883I$ $b = -1.07298 + 1.03278I$	$7.30323 + 0.05327I$	$6.29197 - 2.01808I$
$u = 0.125921 + 1.085150I$ $a = 0.002278 + 0.829637I$ $b = -0.123644 - 0.255513I$	$-3.59209 - 2.19399I$	$-7.43206 + 2.16700I$
$u = 0.125921 - 1.085150I$ $a = 0.002278 - 0.829637I$ $b = -0.123644 + 0.255513I$	$-3.59209 + 2.19399I$	$-7.43206 - 2.16700I$
$u = -0.469571 + 1.049440I$ $a = -0.16005 - 2.27593I$ $b = 0.30952 - 3.32537I$	$-2.42559 - 6.55386I$	$-3.45447 + 8.04873I$
$u = -0.469571 - 1.049440I$ $a = -0.16005 + 2.27593I$ $b = 0.30952 + 3.32537I$	$-2.42559 + 6.55386I$	$-3.45447 - 8.04873I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.361702 + 1.107050I$ $a = 0.209067 - 0.490062I$ $b = -0.15263 - 1.59711I$	$-7.56344 + 3.87204I$	$-10.26851 - 4.35879I$
$u = 0.361702 - 1.107050I$ $a = 0.209067 + 0.490062I$ $b = -0.15263 + 1.59711I$	$-7.56344 - 3.87204I$	$-10.26851 + 4.35879I$
$u = 0.510802 + 1.115330I$ $a = 1.37025 - 1.89407I$ $b = 0.85945 - 3.00940I$	$-5.48268 + 11.20780I$	$-5.92791 - 10.64614I$
$u = 0.510802 - 1.115330I$ $a = 1.37025 + 1.89407I$ $b = 0.85945 + 3.00940I$	$-5.48268 - 11.20780I$	$-5.92791 + 10.64614I$
$u = -0.611674 + 1.083050I$ $a = -2.45227 - 2.64694I$ $b = -1.84060 - 3.72999I$	$3.70474 - 10.43210I$	$0.79280 + 7.46958I$
$u = -0.611674 - 1.083050I$ $a = -2.45227 + 2.64694I$ $b = -1.84060 + 3.72999I$	$3.70474 + 10.43210I$	$0.79280 - 7.46958I$
$u = 0.620139 + 1.106350I$ $a = 2.54875 - 2.41058I$ $b = 1.92861 - 3.51693I$	$2.8718 + 16.9388I$	$-0.30393 - 11.38128I$
$u = 0.620139 - 1.106350I$ $a = 2.54875 + 2.41058I$ $b = 1.92861 + 3.51693I$	$2.8718 - 16.9388I$	$-0.30393 + 11.38128I$
$u = 0.619109 + 0.241097I$ $a = 1.096950 + 0.038223I$ $b = 0.477839 - 0.202874I$	$-0.59135 - 2.31883I$	$1.12676 + 3.72876I$
$u = 0.619109 - 0.241097I$ $a = 1.096950 - 0.038223I$ $b = 0.477839 + 0.202874I$	$-0.59135 + 2.31883I$	$1.12676 - 3.72876I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.418845 + 0.499289I$ $a = -1.27687 + 1.05838I$ $b = -0.858029 + 0.559094I$	$1.00269 - 1.14066I$	$4.93625 + 3.17573I$
$u = -0.418845 - 0.499289I$ $a = -1.27687 - 1.05838I$ $b = -0.858029 - 0.559094I$	$1.00269 + 1.14066I$	$4.93625 - 3.17573I$

II.

$\boldsymbol{I_2^u = \langle u^{73} - 3u^{72} + \cdots + b - 2,\ -2u^{72} - 30u^{70} + \cdots + a - u,\ u^{74} - 2u^{73} + \cdots - 3u + 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix} 2u^{72} + 30u^{70} + \cdots + 2u^2 + u \\ -u^{73} + 3u^{72} + \cdots - 2u + 2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^{72} - 2u^{71} + \cdots - 6u + 3 \\ -u^{73} + 3u^{72} + \cdots - 5u + 2 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^{73} + 3u^{72} + \cdots - u - 1 \\ -u^{73} - 13u^{71} + \cdots + 3u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^{72} - u^{71} + \cdots - u + 1 \\ u^{73} - 2u^{72} + \cdots + u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^7 - u^5 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^{10} + 3u^8 + 4u^6 + 3u^4 + u^2 + 1 \\ -u^{12} - 2u^{10} - 2u^8 + u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3u^{73} + 8u^{72} + \cdots - 7u + 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$u^{74} + 32u^{73} + \cdots + 5u + 1$
c_2, c_5, c_7 c_{12}	$u^{74} + 2u^{73} + \cdots + 3u + 1$
c_3, c_6	$u^{74} - 2u^{73} + \cdots - 3u + 1$
c_4, c_9	$(u^{37} - 2u^{36} + \cdots - u - 2)^2$
c_8, c_{10}	$(u^{37} + 10u^{36} + \cdots - 39u - 4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$y^{74} + 20y^{73} + \cdots + 37y + 1$
c_2, c_5, c_7 c_{12}	$y^{74} + 32y^{73} + \cdots + 5y + 1$
c_3, c_6	$y^{74} + 8y^{73} + \cdots + 101y + 1$
c_4, c_9	$(y^{37} + 10y^{36} + \cdots - 39y - 4)^2$
c_8, c_{10}	$(y^{37} + 34y^{36} + \cdots - 159y - 16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.639479+0.752607I$ $a=-2.15983+0.09363I$ $b=-1.93455-1.15641I$	$-0.61107-5.41655I$	$0.+9.62417I$
$u=-0.639479-0.752607I$ $a=-2.15983-0.09363I$ $b=-1.93455+1.15641I$	$-0.61107+5.41655I$	$0.-9.62417I$
$u=-0.784429+0.545941I$ $a=-2.03595-0.33437I$ $b=-1.91239-1.94292I$	$5.47701-8.31264I$	$3.19623+7.51099I$
$u=-0.784429-0.545941I$ $a=-2.03595+0.33437I$ $b=-1.91239+1.94292I$	$5.47701+8.31264I$	$3.19623-7.51099I$
$u=-0.047209+1.049760I$ $a=\ 2.14571-0.35342I$ $b=\ 0.925538-1.003280I$	$0.33366+3.54390I$	0
$u=-0.047209-1.049760I$ $a=\ 2.14571+0.35342I$ $b=\ 0.925538+1.003280I$	$0.33366-3.54390I$	0
$u=-0.779819+0.528531I$ $a=\ 0.740110+0.451946I$ $b=\ 0.62798+1.32561I$	$7.26569-3.05590I$	$6.03502+2.77359I$
$u=-0.779819-0.528531I$ $a=\ 0.740110-0.451946I$ $b=\ 0.62798-1.32561I$	$7.26569+3.05590I$	$6.03502-2.77359I$
$u=\ 0.009056+1.063140I$ $a=-1.19514+0.78248I$ $b=-0.491540+1.031220I$	$1.91033-1.51255I$	0
$u=\ 0.009056-1.063140I$ $a=-1.19514-0.78248I$ $b=-0.491540-1.031220I$	$1.91033+1.51255I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.622852 + 0.865244I$ $a = 0.79438 + 2.08172I$ $b = -0.29643 + 1.96964I$	$-0.936846 + 0.485539I$	0
$u = -0.622852 - 0.865244I$ $a = 0.79438 - 2.08172I$ $b = -0.29643 - 1.96964I$	$-0.936846 - 0.485539I$	0
$u = 0.813660 + 0.438643I$ $a = -2.38959 + 1.49627I$ $b = -0.90547 + 2.36932I$	$4.86825 - 11.57530I$	$2.50814 + 7.25667I$
$u = 0.813660 - 0.438643I$ $a = -2.38959 - 1.49627I$ $b = -0.90547 - 2.36932I$	$4.86825 + 11.57530I$	$2.50814 - 7.25667I$
$u = 0.443091 + 0.986263I$ $a = -1.38423 + 1.70607I$ $b = -0.33820 + 1.81029I$	$-0.936846 + 0.485539I$	0
$u = 0.443091 - 0.986263I$ $a = -1.38423 - 1.70607I$ $b = -0.33820 - 1.81029I$	$-0.936846 - 0.485539I$	0
$u = 0.775921 + 0.477218I$ $a = -0.740766 + 0.505518I$ $b = -0.57413 + 1.46540I$	$7.26569 - 3.05590I$	$6.03502 + 2.77359I$
$u = 0.775921 - 0.477218I$ $a = -0.740766 - 0.505518I$ $b = -0.57413 - 1.46540I$	$7.26569 + 3.05590I$	$6.03502 - 2.77359I$
$u = 0.762103 + 0.491833I$ $a = 1.87904 - 0.32585I$ $b = 1.73107 - 1.98585I$	$5.70204 + 2.27936I$	$3.88815 - 2.05007I$
$u = 0.762103 - 0.491833I$ $a = 1.87904 + 0.32585I$ $b = 1.73107 + 1.98585I$	$5.70204 - 2.27936I$	$3.88815 + 2.05007I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.773218 + 0.464058I$ $a = 2.65308 + 1.45047I$ $b = 1.16242 + 2.27131I$	$5.54616 + 5.20107I$	$3.66602 - 2.81386I$
$u = -0.773218 - 0.464058I$ $a = 2.65308 - 1.45047I$ $b = 1.16242 - 2.27131I$	$5.54616 - 5.20107I$	$3.66602 + 2.81386I$
$u = -0.395925 + 1.024370I$ $a = -0.444820 - 1.150880I$ $b = -1.42676 - 1.64270I$	-2.95124	0
$u = -0.395925 - 1.024370I$ $a = -0.444820 + 1.150880I$ $b = -1.42676 + 1.64270I$	-2.95124	0
$u = -0.480742 + 0.988204I$ $a = -0.418583 + 1.307900I$ $b = -0.50569 + 1.47970I$	$-0.32230 - 2.77484I$	0
$u = -0.480742 - 0.988204I$ $a = -0.418583 - 1.307900I$ $b = -0.50569 - 1.47970I$	$-0.32230 + 2.77484I$	0
$u = -0.569891 + 0.939876I$ $a = -1.55469 + 0.28140I$ $b = -1.41271 - 0.18656I$	$0.15880 - 2.93389I$	0
$u = -0.569891 - 0.939876I$ $a = -1.55469 - 0.28140I$ $b = -1.41271 + 0.18656I$	$0.15880 + 2.93389I$	0
$u = -0.725089 + 0.517371I$ $a = -0.05378 + 1.70419I$ $b = -1.09918 + 0.98483I$	$1.91033 - 1.51255I$	$0. + 2.66920I$
$u = -0.725089 - 0.517371I$ $a = -0.05378 - 1.70419I$ $b = -1.09918 - 0.98483I$	$1.91033 + 1.51255I$	$0. - 2.66920I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.324310 + 1.067530I$ $a = 0.368103 + 0.746898I$ $b = 0.134333 + 1.055790I$	$-4.13208 + 0.49053I$	0
$u = 0.324310 - 1.067530I$ $a = 0.368103 - 0.746898I$ $b = 0.134333 - 1.055790I$	$-4.13208 - 0.49053I$	0
$u = 0.771853 + 0.430210I$ $a = 0.12391 + 1.52352I$ $b = 1.27111 + 0.67805I$	$1.41199 - 4.22774I$	$-0.66777 + 2.80088I$
$u = 0.771853 - 0.430210I$ $a = 0.12391 - 1.52352I$ $b = 1.27111 - 0.67805I$	$1.41199 + 4.22774I$	$-0.66777 - 2.80088I$
$u = 0.478382 + 1.012710I$ $a = 1.86046 - 0.41541I$ $b = 1.14344 - 0.90963I$	$-0.61107 + 5.41655I$	0
$u = 0.478382 - 1.012710I$ $a = 1.86046 + 0.41541I$ $b = 1.14344 + 0.90963I$	$-0.61107 - 5.41655I$	0
$u = 0.071006 + 1.119930I$ $a = 1.061640 + 0.567159I$ $b = 0.447863 + 0.894942I$	$1.41199 - 4.22774I$	0
$u = 0.071006 - 1.119930I$ $a = 1.061640 - 0.567159I$ $b = 0.447863 - 0.894942I$	$1.41199 + 4.22774I$	0
$u = -0.552065 + 0.679047I$ $a = 0.318468 + 0.837668I$ $b = -0.026831 + 1.040650I$	$0.94543 - 1.58284I$	$3.46208 + 5.25506I$
$u = -0.552065 - 0.679047I$ $a = 0.318468 - 0.837668I$ $b = -0.026831 - 1.040650I$	$0.94543 + 1.58284I$	$3.46208 - 5.25506I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.083389 + 1.139640I$ $a = -2.01039 - 0.09832I$ $b = -0.804300 - 0.746868I$	$-0.56297 - 9.41729I$	0
$u = \ \ 0.083389 - 1.139640I$ $a = -2.01039 + 0.09832I$ $b = -0.804300 + 0.746868I$	$-0.56297 + 9.41729I$	0
$u = \ \ 0.297227 + 1.107630I$ $a = -0.797728 - 0.282670I$ $b = \ \ 0.300506 - 0.901521I$	$-6.88031 - 3.64383I$	0
$u = \ \ 0.297227 - 1.107630I$ $a = -0.797728 + 0.282670I$ $b = \ \ 0.300506 + 0.901521I$	$-6.88031 + 3.64383I$	0
$u = \ \ 0.501716 + 1.091230I$ $a = -0.270062 + 1.221430I$ $b = -0.17916 + 1.65956I$	$-2.94967 + 6.65921I$	0
$u = \ \ 0.501716 - 1.091230I$ $a = -0.270062 - 1.221430I$ $b = -0.17916 - 1.65956I$	$-2.94967 - 6.65921I$	0
$u = \ \ 0.465718 + 1.108500I$ $a = \ \ 0.766414 + 0.253446I$ $b = \ \ 1.63805 - 0.40742I$	$-6.88031 + 3.64383I$	0
$u = \ \ 0.465718 - 1.108500I$ $a = \ \ 0.766414 - 0.253446I$ $b = \ \ 1.63805 + 0.40742I$	$-6.88031 - 3.64383I$	0
$u = -0.597031 + 1.047020I$ $a = -1.74633 + 0.73819I$ $b = -2.26975 - 0.01372I$	$0.33366 - 3.54390I$	0
$u = -0.597031 - 1.047020I$ $a = -1.74633 - 0.73819I$ $b = -2.26975 + 0.01372I$	$0.33366 + 3.54390I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.644880 + 1.043780I$ $a = 1.37188 + 2.45763I$ $b = 0.13735 + 2.49129I$	$3.99070 + 2.93314I$	0
$u = -0.644880 - 1.043780I$ $a = 1.37188 - 2.45763I$ $b = 0.13735 - 2.49129I$	$3.99070 - 2.93314I$	0
$u = -0.635594 + 1.052450I$ $a = -1.140050 - 0.824434I$ $b = -0.475615 - 0.903685I$	$5.70204 - 2.27936I$	0
$u = -0.635594 - 1.052450I$ $a = -1.140050 + 0.824434I$ $b = -0.475615 + 0.903685I$	$5.70204 + 2.27936I$	0
$u = 0.614101 + 1.066830I$ $a = -1.50588 + 2.36698I$ $b = -0.28505 + 2.43832I$	$3.99070 + 2.93314I$	0
$u = 0.614101 - 1.066830I$ $a = -1.50588 - 2.36698I$ $b = -0.28505 - 2.43832I$	$3.99070 - 2.93314I$	0
$u = -0.617616 + 1.073840I$ $a = 1.01978 + 1.95064I$ $b = 0.67156 + 2.50713I$	$5.54616 - 5.20107I$	0
$u = -0.617616 - 1.073840I$ $a = 1.01978 - 1.95064I$ $b = 0.67156 - 2.50713I$	$5.54616 + 5.20107I$	0
$u = 0.616680 + 1.077750I$ $a = 1.30539 - 0.90429I$ $b = 0.579788 - 1.025090I$	$5.47701 + 8.31264I$	0
$u = 0.616680 - 1.077750I$ $a = 1.30539 + 0.90429I$ $b = 0.579788 + 1.025090I$	$5.47701 - 8.31264I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.602127 + 1.096470I$ $a = 1.58976 + 0.92372I$ $b = 2.22003 + 0.09167I$	$-0.56297 + 9.41729I$	0
$u = 0.602127 - 1.096470I$ $a = 1.58976 - 0.92372I$ $b = 2.22003 - 0.09167I$	$-0.56297 - 9.41729I$	0
$u = 0.619282 + 1.099150I$ $a = -1.12877 + 1.73008I$ $b = -0.81856 + 2.33214I$	$4.86825 + 11.57530I$	0
$u = 0.619282 - 1.099150I$ $a = -1.12877 - 1.73008I$ $b = -0.81856 - 2.33214I$	$4.86825 - 11.57530I$	0
$u = 0.298836 + 0.669488I$ $a = 2.36525 + 0.12741I$ $b = 1.34154 - 1.16389I$	$0.15880 + 2.93389I$	$0.1334486 + 0.0017874I$
$u = 0.298836 - 0.669488I$ $a = 2.36525 - 0.12741I$ $b = 1.34154 + 1.16389I$	$0.15880 - 2.93389I$	$0.1334486 - 0.0017874I$
$u = 0.696387 + 0.229050I$ $a = -2.03826 + 0.21361I$ $b = -0.354754 + 1.232240I$	$-2.94967 - 6.65921I$	$-2.58619 + 7.25641I$
$u = 0.696387 - 0.229050I$ $a = -2.03826 - 0.21361I$ $b = -0.354754 - 1.232240I$	$-2.94967 + 6.65921I$	$-2.58619 - 7.25641I$
$u = 0.647209 + 0.115404I$ $a = -0.845624 + 1.132210I$ $b = 0.518554 - 0.180895I$	$-4.13208 + 0.49053I$	$-5.63239 - 0.25281I$
$u = 0.647209 - 0.115404I$ $a = -0.845624 - 1.132210I$ $b = 0.518554 + 0.180895I$	$-4.13208 - 0.49053I$	$-5.63239 + 0.25281I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.385834 + 0.449069I$ $a = -1.135030 + 0.682969I$ $b = -0.002429 + 1.307960I$	$0.94543 - 1.58284I$	$3.46208 + 5.25506I$
$u = 0.385834 - 0.449069I$ $a = -1.135030 - 0.682969I$ $b = -0.002429 - 1.307960I$	$0.94543 + 1.58284I$	$3.46208 - 5.25506I$
$u = -0.412050 + 0.204676I$ $a = 3.13214 - 0.97399I$ $b = 0.762365 + 0.154767I$	$-0.32230 + 2.77484I$	$2.03391 - 3.58176I$
$u = -0.412050 - 0.204676I$ $a = 3.13214 + 0.97399I$ $b = 0.762365 - 0.154767I$	$-0.32230 - 2.77484I$	$2.03391 + 3.58176I$

III. $I_3^u = \langle b+u+2,\ a+2,\ u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u+4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -2.00000$ $b = -1.50000 - 0.86603I$	$-\,4.05977I$	$0. + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = -2.00000$ $b = -1.50000 + 0.86603I$	$4.05977I$	$0. - 6.92820I$

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

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

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

$$a_2 = \begin{pmatrix} u+2 \\ 2u+2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} u+1 \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u+1 \\ u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.00000 + 1.73205I$ $b = 1.73205I$	0	3.00000
$u = -0.500000 - 0.866025I$ $a = 1.00000 - 1.73205I$ $b = -1.73205I$	0	3.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_{11}	$((u^2-u+1)^2)(u^{22}+11u^{21}+\cdots+3u+1)(u^{74}+32u^{73}+\cdots+5u+1)$
c_2, c_7	$((u^2+u+1)^2)(u^{22}+u^{21}+\cdots+u+1)(u^{74}+2u^{73}+\cdots+3u+1)$
c_3, c_6	$((u^2-u+1)^2)(u^{22}-u^{21}+\cdots-3u+1)(u^{74}-2u^{73}+\cdots-3u+1)$
c_4, c_9	$u^4(u^{22}+5u^{21}+\cdots+8u+4)(u^{37}-2u^{36}+\cdots-u-2)^2$
c_5, c_{12}	$((u^2-u+1)^2)(u^{22}+u^{21}+\cdots+u+1)(u^{74}+2u^{73}+\cdots+3u+1)$
c_8, c_{10}	$u^4(u^{22}+5u^{21}+\cdots+56u^2+16)(u^{37}+10u^{36}+\cdots-39u-4)^2$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_{11}	$((y^2+y+1)^2)(y^{22}+3y^{21}+\cdots+11y+1)(y^{74}+20y^{73}+\cdots+37y+1)$
c_2, c_5, c_7 c_{12}	$((y^2+y+1)^2)(y^{22}+11y^{21}+\cdots+3y+1)(y^{74}+32y^{73}+\cdots+5y+1)$
c_3, c_6	$((y^2+y+1)^2)(y^{22}-5y^{21}+\cdots-13y+1)(y^{74}+8y^{73}+\cdots+101y+1)$
c_4, c_9	$y^4(y^{22}+5y^{21}+\cdots+56y^2+16)(y^{37}+10y^{36}+\cdots-39y-4)^2$
c_8, c_{10}	$y^4(y^{22}+17y^{21}+\cdots+1792y+256)$ $\cdot(y^{37}+34y^{36}+\cdots-159y-16)^2$