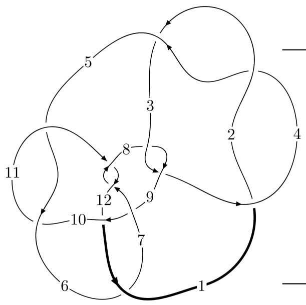
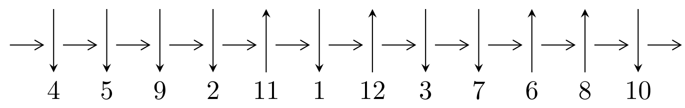
$12a_{0847}$ ($K12a_{0847}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 3.31232\times 10^{25}u^{39} - 1.32076\times 10^{25}u^{38} + \cdots + 2.23057\times 10^{24}b + 8.08236\times 10^{25},\\
& 6.20649\times 10^{25}u^{39} - 3.16207\times 10^{25}u^{38} + \cdots + 4.46114\times 10^{24}a + 1.24112\times 10^{26},\ u^{40} + 16u^{38} + \cdots + 7u +\\
I_2^u = \langle & 1.14706\times 10^{193}u^{65} + 1.22942\times 10^{193}u^{64} + \cdots + 3.43598\times 10^{195}b + 3.53438\times 10^{197},\\
& 2.71067\times 10^{205}u^{65} - 5.82931\times 10^{205}u^{64} + \cdots + 1.90669\times 10^{207}a - 8.28943\times 10^{207},\\
& u^{66} - 2u^{65} + \cdots + 34394u + 12919\rangle\\
I_3^u = \langle & 4u^{19} - 2u^{18} + \cdots + b - 11,\ 3u^{19} + u^{18} + \cdots + a - 7,\ u^{20} + 10u^{18} + \cdots - 3u + 1\rangle\\
I_4^u = \langle & b + 1,\ -u^3 + u^2 + 2a - u + 1,\ u^4 + u^2 + u + 1\rangle\\
I_5^u = \langle & -1211u^{11} - 823u^{10} + \cdots + 3595b - 1417,\ 41974u^{11} + 28420u^{10} + \cdots + 17975a + 80569,\\
& u^{12} + u^{11} + 6u^{10} + 8u^9 + 18u^8 + 22u^7 + 33u^6 + 32u^5 + 40u^4 + 28u^3 + 25u^2 + 8u + 1\rangle\\
I_6^u = \langle & -u^5 + u^4 + u^2 + b - 1,\ -u^5 + u^4 - u^3 + u^2 + a - u,\ u^6 - u^5 + u^4 - 2u^3 + u^2 + 1\rangle\\
I_7^u = \langle & b + 1,\ u^5 + 2u^3 + a + u,\ u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1\rangle
\end{aligned}$$

* 7 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 154 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. $\boldsymbol{I^u_1 =}$
$\boldsymbol{\langle 3.31\times10^{25}u^{39}-1.32\times10^{25}u^{38}+\cdots+2.23\times10^{24}b+8.08\times10^{25},\ 6.21\times10^{25}u^{39}-3.16\times10^{25}u^{38}+\cdots+4.46\times10^{24}a+1.24\times10^{26},\ u^{40}+16u^{38}+\cdots+7u+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-13.9124u^{39}+7.08805u^{38}+\cdots-142.107u-27.8207\\-14.8497u^{39}+5.92119u^{38}+\cdots-166.279u-36.2345\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}20.7647u^{39}-9.52093u^{38}+\cdots+216.317u+47.3812\\16.0965u^{39}-8.17260u^{38}+\cdots+162.898u+33.3163\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-2.26192u^{39}+1.18742u^{38}+\cdots-21.6467u-4.47265\\11.7428u^{39}-6.33020u^{38}+\cdots+113.470u+22.5394\end{pmatrix}$$
$$a_7 = \begin{pmatrix}u^2+1\\-21.3520u^{39}+10.9238u^{38}+\cdots-212.920u-43.0436\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}14.0047u^{39}-7.51762u^{38}+\cdots+135.117u+27.0121\\24.7644u^{39}-11.3372u^{38}+\cdots+260.565u+53.8552\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.937301u^{39}+1.16685u^{38}+\cdots+24.1723u+8.41388\\-14.8497u^{39}+5.92119u^{38}+\cdots-166.279u-36.2345\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\8.66191u^{39}-4.47265u^{38}+\cdots+84.7737u+16.8793\end{pmatrix}$$
$$a_8 = \begin{pmatrix}1\\-16.8793u^{39}+8.66191u^{38}+\cdots-169.166u-34.3817\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $= \frac{5087195625603003885328155543}{892227022735233248307864 8}u^{39} - \frac{2214184396417022817534897 05}{8922270227352332483078648}u^{38} + \cdots + \frac{5435560502953002870748740305}{8922270227352332483078648}u + \frac{1044739494354333632689026635}{8922270227352332483078648}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{40} - 3u^{39} + \cdots + 304u - 64$
c_3, c_8	$u^{40} + 7u^{39} + \cdots - 6912u - 1024$
c_5, c_7, c_{10} c_{11}	$u^{40} + 16u^{38} + \cdots + 7u + 1$
c_6, c_9	$u^{40} - u^{39} + \cdots - 6u^2 + 1$
c_{12}	$u^{40} - 41u^{39} + \cdots - 458752u + 16384$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{40} - 37y^{39} + \cdots - 54528y + 4096$
c_3, c_8	$y^{40} - 21y^{39} + \cdots - 2424832y + 1048576$
c_5, c_7, c_{10} c_{11}	$y^{40} + 32y^{39} + \cdots - 25y + 1$
c_6, c_9	$y^{40} - y^{39} + \cdots - 12y + 1$
c_{12}	$y^{40} - 7y^{39} + \cdots - 7516192768y + 268435456$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.899188 + 0.492178I$ $a = 0.304374 + 0.682153I$ $b = 1.333640 - 0.137059I$	$-1.89685 + 2.95688I$	$-6.78245 - 3.87727I$
$u = 0.899188 - 0.492178I$ $a = 0.304374 - 0.682153I$ $b = 1.333640 + 0.137059I$	$-1.89685 - 2.95688I$	$-6.78245 + 3.87727I$
$u = -0.505765 + 0.977883I$ $a = 0.749759 - 0.348939I$ $b = 1.157940 + 0.190104I$	$-4.44118 - 8.25953I$	$-12.0108 + 13.6205I$
$u = -0.505765 - 0.977883I$ $a = 0.749759 + 0.348939I$ $b = 1.157940 - 0.190104I$	$-4.44118 + 8.25953I$	$-12.0108 - 13.6205I$
$u = -0.153292 + 1.111650I$ $a = 0.349737 - 0.040990I$ $b = 0.240109 - 0.939576I$	$-2.05358 - 4.12454I$	$-6.82065 + 6.66260I$
$u = -0.153292 - 1.111650I$ $a = 0.349737 + 0.040990I$ $b = 0.240109 + 0.939576I$	$-2.05358 + 4.12454I$	$-6.82065 - 6.66260I$
$u = -0.245672 + 1.109570I$ $a = -0.933493 - 0.173368I$ $b = -0.507959 - 1.155590I$	$-4.98920 - 4.83447I$	$-16.1832 + 16.3407I$
$u = -0.245672 - 1.109570I$ $a = -0.933493 + 0.173368I$ $b = -0.507959 + 1.155590I$	$-4.98920 + 4.83447I$	$-16.1832 - 16.3407I$
$u = 0.115716 + 1.177370I$ $a = -2.09154 - 0.45683I$ $b = -1.69077 + 0.33258I$	$-8.23430 + 1.39458I$	$-28.5152 + 0.I$
$u = 0.115716 - 1.177370I$ $a = -2.09154 + 0.45683I$ $b = -1.69077 - 0.33258I$	$-8.23430 - 1.39458I$	$-28.5152 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.007905 + 1.204090I$ $a = -1.073410 + 0.114351I$ $b = -1.22367 + 0.82479I$	$-7.20523 + 2.58935I$	$-15.5309 - 10.4789I$
$u = 0.007905 - 1.204090I$ $a = -1.073410 - 0.114351I$ $b = -1.22367 - 0.82479I$	$-7.20523 - 2.58935I$	$-15.5309 + 10.4789I$
$u = 0.430105 + 0.650761I$ $a = 0.877780 + 0.331031I$ $b = 0.370394 - 0.064690I$	$0.45659 + 1.62282I$	$2.32756 - 4.56782I$
$u = 0.430105 - 0.650761I$ $a = 0.877780 - 0.331031I$ $b = 0.370394 + 0.064690I$	$0.45659 - 1.62282I$	$2.32756 + 4.56782I$
$u = 0.681372 + 0.282436I$ $a = 0.438187 - 0.627394I$ $b = -0.011016 + 0.544192I$	$2.28233 + 0.65151I$	$2.38168 - 2.37217I$
$u = 0.681372 - 0.282436I$ $a = 0.438187 + 0.627394I$ $b = -0.011016 - 0.544192I$	$2.28233 - 0.65151I$	$2.38168 + 2.37217I$
$u = -0.429621 + 1.202460I$ $a = 1.82094 - 1.08033I$ $b = 1.56402 + 0.39727I$	$-11.6215 - 10.3010I$	0
$u = -0.429621 - 1.202460I$ $a = 1.82094 + 1.08033I$ $b = 1.56402 - 0.39727I$	$-11.6215 + 10.3010I$	0
$u = -0.687805 + 0.123786I$ $a = 0.921252 - 0.941879I$ $b = 1.373420 + 0.283320I$	$-3.70989 - 7.46384I$	$-3.38238 + 6.85585I$
$u = -0.687805 - 0.123786I$ $a = 0.921252 + 0.941879I$ $b = 1.373420 - 0.283320I$	$-3.70989 + 7.46384I$	$-3.38238 - 6.85585I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.458954+1.247010I$ $a=\ 0.813390-0.191482I$ $b=\ 0.571932+0.480290I$	$-3.81688-8.54712I$	0
$u=-0.458954-1.247010I$ $a=\ 0.813390+0.191482I$ $b=\ 0.571932-0.480290I$	$-3.81688+8.54712I$	0
$u=-0.666505+0.035654I$ $a=-0.173423-0.645490I$ $b=-0.218557+0.730406I$	$1.33850+3.81150I$	$0.15740-5.31306I$
$u=-0.666505-0.035654I$ $a=-0.173423+0.645490I$ $b=-0.218557-0.730406I$	$1.33850-3.81150I$	$0.15740+5.31306I$
$u=\ 0.583105+0.067597I$ $a=-1.53898+1.40884I$ $b=-1.258620-0.201718I$	$-1.54538-2.08926I$	$-2.89309+1.69264I$
$u=\ 0.583105-0.067597I$ $a=-1.53898-1.40884I$ $b=-1.258620+0.201718I$	$-1.54538+2.08926I$	$-2.89309-1.69264I$
$u=-0.506401+0.183038I$ $a=-0.073289+0.989507I$ $b=-0.953484-0.298364I$	$-0.851728-0.087915I$	$-4.80507-1.55596I$
$u=-0.506401-0.183038I$ $a=-0.073289-0.989507I$ $b=-0.953484+0.298364I$	$-0.851728+0.087915I$	$-4.80507+1.55596I$
$u=\ 0.42754+1.43537I$ $a=-0.526841-0.127695I$ $b=-0.906742-0.781507I$	$-9.12833+7.99600I$	0
$u=\ 0.42754-1.43537I$ $a=-0.526841+0.127695I$ $b=-0.906742+0.781507I$	$-9.12833-7.99600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.20214 + 1.52671I$ $a = 1.87657 + 0.05326I$ $b = 1.68617 + 0.05399I$	$-18.6019 + 4.9632I$	0
$u = 0.20214 - 1.52671I$ $a = 1.87657 - 0.05326I$ $b = 1.68617 - 0.05399I$	$-18.6019 - 4.9632I$	0
$u = -0.48648 + 1.46673I$ $a = -2.04704 + 0.84915I$ $b = -1.50882 - 0.19508I$	$-10.5590 - 11.1934I$	0
$u = -0.48648 - 1.46673I$ $a = -2.04704 - 0.84915I$ $b = -1.50882 + 0.19508I$	$-10.5590 + 11.1934I$	0
$u = -0.444154$ $a = 1.59262$ $b = 1.40375$	-7.48349	-12.7110
$u = 0.54569 + 1.45909I$ $a = -0.713456 - 0.217255I$ $b = -0.393775 + 0.967180I$	$-7.6190 + 13.9228I$	0
$u = 0.54569 - 1.45909I$ $a = -0.713456 + 0.217255I$ $b = -0.393775 - 0.967180I$	$-7.6190 - 13.9228I$	0
$u = 0.62636 + 1.51205I$ $a = 1.58254 + 1.10290I$ $b = 1.51152 - 0.37480I$	$-13.7344 + 18.7811I$	0
$u = 0.62636 - 1.51205I$ $a = 1.58254 - 1.10290I$ $b = 1.51152 + 0.37480I$	$-13.7344 - 18.7811I$	0
$u = -0.313111$ $a = 0.781264$ $b = -0.675226$	-1.07586	-8.30510

II. $I_2^u = \langle 1.15\times10^{193}u^{65} + 1.23\times10^{193}u^{64} + \cdots + 3.44\times10^{195}b + 3.53\times10^{197},\ 2.71\times10^{205}u^{65} - 5.83\times10^{205}u^{64} + \cdots + 1.91\times10^{207}a - 8.29\times10^{207},\ u^{66} - 2u^{65} + \cdots + 34394u + 12919\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-0.0142166u^{65} + 0.0305728u^{64} + \cdots - 124.176u + 4.34754\\-0.00333837u^{65} - 0.00357808u^{64} + \cdots - 293.492u - 102.864\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}0.00674273u^{65} - 0.0145348u^{64} + \cdots + 31.5399u - 9.34998\\0.00726997u^{65} - 0.0175175u^{64} + \cdots + 2.63735u - 25.0305\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-0.0147760u^{65} + 0.0187754u^{64} + \cdots - 487.354u - 129.290\\-0.00486970u^{65} - 0.00338081u^{64} + \cdots - 411.583u - 140.339\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.0107903u^{65} - 0.0413034u^{64} + \cdots - 381.121u - 187.126\\0.00399074u^{65} - 0.00892910u^{64} + \cdots - 2.60791u - 13.3411\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u\\u^3 + u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.0164614u^{65} + 0.0450455u^{64} + \cdots + 97.0027u + 96.4317\\-0.00370284u^{65} + 0.00573036u^{64} + \cdots - 68.3400u - 15.5754\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-0.0108782u^{65} + 0.0341509u^{64} + \cdots + 169.316u + 107.211\\-0.00333837u^{65} - 0.00357808u^{64} + \cdots - 293.492u - 102.864\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-0.0134444u^{65} + 0.0331534u^{64} + \cdots - 34.2797u + 41.8605\\-0.00234103u^{65} - 0.00400860u^{64} + \cdots - 261.336u - 91.3337\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.00944116u^{65} - 0.0162681u^{64} + \cdots + 186.076u + 38.7895\\0.00153644u^{65} - 0.0114564u^{64} + \cdots - 197.120u - 79.6548\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.00422084u^{65} + 0.0288638u^{64} + \cdots + 374.236u + 158.979$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$(u^{11} - 2u^{10} - 4u^9 + 8u^8 + 6u^7 - 8u^6 - 7u^5 - 2u^4 + 7u^3 + 3u^2 - u + 1)^6$
c_3, c_8	$(u^{11} + 2u^{10} - u^9 - 3u^8 + u^7 + 2u^6 + 4u^5 + 11u^4 + 9u^3 + u^2 - 2u - 2)^6$
c_5, c_7, c_{10} c_{11}	$u^{66} - 2u^{65} + \cdots + 34394u + 12919$
c_6, c_9	$u^{66} - 6u^{65} + \cdots - 10740u + 839$
c_{12}	$(u^3 + u^2 - 1)^{22}$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y^{11} - 12y^{10} + \cdots - 5y - 1)^6$
c_3, c_8	$(y^{11} - 6y^{10} + \cdots + 8y - 4)^6$
c_5, c_7, c_{10} c_{11}	$y^{66} + 54y^{65} + \cdots - 70983068y + 166900561$
c_6, c_9	$y^{66} - 18y^{65} + \cdots - 32088596y + 703921$
c_{12}	$(y^3 - y^2 + 2y - 1)^{22}$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.443676 + 0.885304I$ $a = 0.536240 + 0.053539I$ $b = 0.172742 + 0.362556I$	$-0.17973 + 2.08617I$	$0. - 1.86035I$
$u = 0.443676 - 0.885304I$ $a = 0.536240 - 0.053539I$ $b = 0.172742 - 0.362556I$	$-0.17973 - 2.08617I$	$0. + 1.86035I$
$u = -0.375020 + 0.888196I$ $a = -1.50514 + 1.64605I$ $b = -0.780044$	$-3.03685 - 2.82812I$	$-13.9197 + 2.9794I$
$u = -0.375020 - 0.888196I$ $a = -1.50514 - 1.64605I$ $b = -0.780044$	$-3.03685 + 2.82812I$	$-13.9197 - 2.9794I$
$u = -0.940224 + 0.094709I$ $a = 0.246658 + 0.185640I$ $b = 0.172742 - 0.362556I$	$-0.17973 + 3.57008I$	$-0.95097 - 4.09854I$
$u = -0.940224 - 0.094709I$ $a = 0.246658 - 0.185640I$ $b = 0.172742 + 0.362556I$	$-0.17973 - 3.57008I$	$-0.95097 + 4.09854I$
$u = -0.076827 + 1.134660I$ $a = 0.961916 + 0.477898I$ $b = 0.172742 - 0.362556I$	$-4.31731 + 0.74196I$	0
$u = -0.076827 - 1.134660I$ $a = 0.961916 - 0.477898I$ $b = 0.172742 + 0.362556I$	$-4.31731 - 0.74196I$	0
$u = -0.056692 + 1.151960I$ $a = -0.423038 + 0.195770I$ $b = -0.399448 + 0.789847I$	$-2.58191 + 1.86929I$	0
$u = -0.056692 - 1.151960I$ $a = -0.423038 - 0.195770I$ $b = -0.399448 - 0.789847I$	$-2.58191 - 1.86929I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.778393 + 0.258934I$ $a = 0.225557 - 0.154015I$ $b = 1.48612 - 0.29515I$	$-8.68019 + 5.82303I$	$-10.27594 - 2.59947I$
$u = -0.778393 - 0.258934I$ $a = 0.225557 + 0.154015I$ $b = 1.48612 + 0.29515I$	$-8.68019 - 5.82303I$	$-10.27594 + 2.59947I$
$u = 0.220570 + 1.161500I$ $a = -2.83450 - 0.03658I$ $b = -1.379210 - 0.103381I$	$-5.11629 + 0.40920I$	0
$u = 0.220570 - 1.161500I$ $a = -2.83450 + 0.03658I$ $b = -1.379210 + 0.103381I$	$-5.11629 - 0.40920I$	0
$u = 0.439380 + 1.101000I$ $a = 1.072290 + 0.114146I$ $b = 0.172742 - 0.362556I$	$-0.17973 + 3.57008I$	0
$u = 0.439380 - 1.101000I$ $a = 1.072290 - 0.114146I$ $b = 0.172742 + 0.362556I$	$-0.17973 - 3.57008I$	0
$u = -0.308061 + 1.174420I$ $a = 1.52228 - 1.82843I$ $b = 1.48612 + 0.29515I$	$-12.8178 - 8.6511I$	0
$u = -0.308061 - 1.174420I$ $a = 1.52228 + 1.82843I$ $b = 1.48612 - 0.29515I$	$-12.8178 + 8.6511I$	0
$u = -0.180416 + 1.202800I$ $a = -1.038560 + 0.679711I$ $b = -0.399448 - 0.789847I$	$-6.71949 - 4.69742I$	0
$u = -0.180416 - 1.202800I$ $a = -1.038560 - 0.679711I$ $b = -0.399448 + 0.789847I$	$-6.71949 + 4.69742I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.047433 + 1.219130I$ $a = 2.73614 + 0.94411I$ $b = 1.50982 - 0.17565I$	$-10.52640 - 0.24361I$	0
$u = 0.047433 - 1.219130I$ $a = 2.73614 - 0.94411I$ $b = 1.50982 + 0.17565I$	$-10.52640 + 0.24361I$	0
$u = 0.260163 + 1.235840I$ $a = -3.40983 - 0.79732I$ $b = -1.379210 + 0.103381I$	$-5.11629 + 5.24705I$	0
$u = 0.260163 - 1.235840I$ $a = -3.40983 + 0.79732I$ $b = -1.379210 - 0.103381I$	$-5.11629 - 5.24705I$	0
$u = -1.246790 + 0.256999I$ $a = -1.175530 + 0.234212I$ $b = -1.379210 - 0.103381I$	$-5.11629 - 5.24705I$	0
$u = -1.246790 - 0.256999I$ $a = -1.175530 - 0.234212I$ $b = -1.379210 + 0.103381I$	$-5.11629 + 5.24705I$	0
$u = 0.147409 + 1.275360I$ $a = -2.42548 - 1.73360I$ $b = -1.379210 + 0.103381I$	$-9.25387 + 2.41892I$	0
$u = 0.147409 - 1.275360I$ $a = -2.42548 + 1.73360I$ $b = -1.379210 - 0.103381I$	$-9.25387 - 2.41892I$	0
$u = -0.525325 + 0.474288I$ $a = -0.823277 - 0.894645I$ $b = 1.50982 - 0.17565I$	$-10.52640 + 5.41263I$	$-12.68218 - 3.99605I$
$u = -0.525325 - 0.474288I$ $a = -0.823277 + 0.894645I$ $b = 1.50982 + 0.17565I$	$-10.52640 - 5.41263I$	$-12.68218 + 3.99605I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.327359+1.280560I$ $a=-0.931884-0.077016I$ $b=-0.399448-0.789847I$	$-2.58191-7.52554I$	0
$u=-0.327359-1.280560I$ $a=-0.931884+0.077016I$ $b=-0.399448+0.789847I$	$-2.58191+7.52554I$	0
$u=1.316550+0.129461I$ $a=0.096039-0.664759I$ $b=-0.399448+0.789847I$	$-2.58191+7.52554I$	0
$u=1.316550-0.129461I$ $a=0.096039+0.664759I$ $b=-0.399448-0.789847I$	$-2.58191-7.52554I$	0
$u=-0.465671+1.263740I$ $a=0.611659-0.355667I$ $b=0.172742+0.362556I$	$-4.31731-0.74196I$	0
$u=-0.465671-1.263740I$ $a=0.611659+0.355667I$ $b=0.172742-0.362556I$	$-4.31731+0.74196I$	0
$u=0.090743+1.365980I$ $a=1.98628+0.52916I$ $b=1.48612-0.29515I$	$-8.68019+5.82303I$	0
$u=0.090743-1.365980I$ $a=1.98628-0.52916I$ $b=1.48612+0.29515I$	$-8.68019-5.82303I$	0
$u=0.449718+0.434222I$ $a=3.81144+3.91525I$ $b=-0.780044$	$-3.03685+2.82812I$	$-13.9197-2.9794I$
$u=0.449718-0.434222I$ $a=3.81144-3.91525I$ $b=-0.780044$	$-3.03685-2.82812I$	$-13.9197+2.9794I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.511528+0.255393I$ $a=1.068800-0.261235I$ $b=-0.399448+0.789847I$	$-2.58191+1.86929I$	$-7.40900-2.90378I$
$u=-0.511528-0.255393I$ $a=1.068800+0.261235I$ $b=-0.399448-0.789847I$	$-2.58191-1.86929I$	$-7.40900+2.90378I$
$u=-0.35301+1.40034I$ $a=2.24536-1.00339I$ $b=1.48612+0.29515I$	$-8.6802-11.4793I$	0
$u=-0.35301-1.40034I$ $a=2.24536+1.00339I$ $b=1.48612-0.29515I$	$-8.6802+11.4793I$	0
$u=-0.352352+0.407836I$ $a=1.45368+0.28228I$ $b=0.172742+0.362556I$	$-0.17973+2.08617I$	$-0.95097-1.86035I$
$u=-0.352352-0.407836I$ $a=1.45368-0.28228I$ $b=0.172742-0.362556I$	$-0.17973-2.08617I$	$-0.95097+1.86035I$
$u=0.09895+1.48132I$ $a=1.047790+0.860164I$ $b=-0.780044$	-7.17443	0
$u=0.09895-1.48132I$ $a=1.047790-0.860164I$ $b=-0.780044$	-7.17443	0
$u=-0.60128+1.36273I$ $a=1.75565-1.07071I$ $b=1.50982+0.17565I$	$-10.52640-5.41263I$	0
$u=-0.60128-1.36273I$ $a=1.75565+1.07071I$ $b=1.50982-0.17565I$	$-10.52640+5.41263I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.15601+1.48861I$ $a=2.10336-0.53063I$ $b=1.50982-0.17565I$	$-14.6640+2.5845I$	0
$u=-0.15601-1.48861I$ $a=2.10336+0.53063I$ $b=1.50982+0.17565I$	$-14.6640-2.5845I$	0
$u=1.30444+0.73850I$ $a=0.507558-0.152575I$ $b=1.50982+0.17565I$	$-10.52640+0.24361I$	0
$u=1.30444-0.73850I$ $a=0.507558+0.152575I$ $b=1.50982-0.17565I$	$-10.52640-0.24361I$	0
$u=1.52504+0.08143I$ $a=0.668002+0.574978I$ $b=1.48612-0.29515I$	$-8.6802+11.4793I$	0
$u=1.52504-0.08143I$ $a=0.668002-0.574978I$ $b=1.48612+0.29515I$	$-8.6802-11.4793I$	0
$u=0.400408+0.081856I$ $a=0.52657-2.12304I$ $b=-1.379210-0.103381I$	$-5.11629+0.40920I$	$-9.41840-0.08998I$
$u=0.400408-0.081856I$ $a=0.52657+2.12304I$ $b=-1.379210+0.103381I$	$-5.11629-0.40920I$	$-9.41840+0.08998I$
$u=0.73809+1.54227I$ $a=-0.437236-0.561720I$ $b=-0.399448+0.789847I$	$-6.71949+4.69742I$	0
$u=0.73809-1.54227I$ $a=-0.437236+0.561720I$ $b=-0.399448-0.789847I$	$-6.71949-4.69742I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.63179+1.62577I$ $a=-1.96213+0.83870I$ $b=-1.379210-0.103381I$	$-9.25387-2.41892I$	0
$u=-0.63179-1.62577I$ $a=-1.96213-0.83870I$ $b=-1.379210+0.103381I$	$-9.25387+2.41892I$	0
$u=0.94973+1.57978I$ $a=1.18882+1.01732I$ $b=1.48612-0.29515I$	$-12.8178+8.6511I$	0
$u=0.94973-1.57978I$ $a=1.18882-1.01732I$ $b=1.48612+0.29515I$	$-12.8178-8.6511I$	0
$u=0.45443+2.02885I$ $a=1.44690-0.11028I$ $b=1.50982+0.17565I$	$-14.6640-2.5845I$	0
$u=0.45443-2.02885I$ $a=1.44690+0.11028I$ $b=1.50982-0.17565I$	$-14.6640+2.5845I$	0

III.
$\boldsymbol{I_3^u = \langle 4u^{19} - 2u^{18} + \cdots + b - 11,\ 3u^{19} + u^{18} + \cdots + a - 7,\ u^{20} + 10u^{18} + \cdots - 3u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -3u^{19} - u^{18} + \cdots - 18u + 7 \\ -4u^{19} + 2u^{18} + \cdots - 29u + 11 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 7u^{19} - 5u^{18} + \cdots + 53u - 18 \\ 4u^{19} - 4u^{18} + \cdots + 39u - 15 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^{18} - 9u^{16} + \cdots + 5u - 1 \\ u^{19} - u^{18} + \cdots + 14u - 4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^2 - 1 \\ -3u^{19} - u^{18} + \cdots - 14u - 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{19} + 10u^{17} + \cdots + 9u - 3 \\ -3u^{18} - u^{17} + \cdots + 19u - 14 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^{19} - 3u^{18} + \cdots + 11u - 4 \\ -4u^{19} + 2u^{18} + \cdots - 29u + 11 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u^{19} - u^{18} + \cdots + 15u - 4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -1 \\ -4u^{19} - u^{18} + \cdots - 15u - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= 16u^{19} - 19u^{18} + 143u^{17} - 240u^{16} + 582u^{15} - 1165u^{14} + 1560u^{13} - 3036u^{12} + 3081u^{11} - 4937u^{10} + 4305u^9 - 5388u^8 + 3995u^7 - 3982u^6 + 2381u^5 - 1876u^4 + 847u^3 - 535u^2 + 140u - 68$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^{20} + 4u^{19} + \cdots - 5u + 1$
c_3	$u^{20} - 6u^{18} + \cdots - 3u + 1$
c_4	$u^{20} - 4u^{19} + \cdots + 5u + 1$
c_5, c_{11}	$u^{20} + 10u^{18} + \cdots - 3u + 1$
c_6, c_9	$u^{20} + 3u^{19} + \cdots - 5u^3 + 1$
c_7, c_{10}	$u^{20} + 10u^{18} + \cdots + 3u + 1$
c_8	$u^{20} - 6u^{18} + \cdots + 3u + 1$
c_{12}	$u^{20} + 5u^{19} + \cdots - 4u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{20} - 20y^{19} + \cdots - y + 1$
c_3, c_8	$y^{20} - 12y^{19} + \cdots - 9y + 1$
c_5, c_7, c_{10} c_{11}	$y^{20} + 20y^{19} + \cdots + 15y + 1$
c_6, c_9	$y^{20} - 5y^{19} + \cdots + 6y^2 + 1$
c_{12}	$y^{20} - 5y^{19} + \cdots - 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.329203+1.094160I$ $a=-0.962601+0.304522I$ $b=-0.501873-0.929654I$	$-4.82771-4.32358I$	$-9.79873+1.76880I$
$u=-0.329203-1.094160I$ $a=-0.962601-0.304522I$ $b=-0.501873+0.929654I$	$-4.82771+4.32358I$	$-9.79873-1.76880I$
$u=\ \ 0.457051+0.680670I$ $a=\ \ 1.33201+1.28366I$ $b=-0.215636-0.242909I$	$-2.12509+2.39395I$	$-2.67442-1.16946I$
$u=\ \ 0.457051-0.680670I$ $a=\ \ 1.33201-1.28366I$ $b=-0.215636+0.242909I$	$-2.12509-2.39395I$	$-2.67442+1.16946I$
$u=\ \ 0.574386+0.534332I$ $a=-0.016887-0.670126I$ $b=\ \ 1.366330+0.095115I$	$-7.13263+1.04802I$	$-10.45930-4.67117I$
$u=\ \ 0.574386-0.534332I$ $a=-0.016887+0.670126I$ $b=\ \ 1.366330-0.095115I$	$-7.13263-1.04802I$	$-10.45930+4.67117I$
$u=-0.371455+0.685308I$ $a=-6.01012-2.87138I$ $b=-1.027230-0.081684I$	$-3.59078-3.00431I$	$-13.5133-14.5755I$
$u=-0.371455-0.685308I$ $a=-6.01012+2.87138I$ $b=-1.027230+0.081684I$	$-3.59078+3.00431I$	$-13.5133+14.5755I$
$u=\ \ 0.163354+1.255280I$ $a=-1.81612-0.82484I$ $b=-1.44756+0.28033I$	$-7.76209+1.54255I$	$-9.78950-1.62203I$
$u=\ \ 0.163354-1.255280I$ $a=-1.81612+0.82484I$ $b=-1.44756-0.28033I$	$-7.76209-1.54255I$	$-9.78950+1.62203I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.211407 + 0.674773I$ $a = 0.560798 + 0.564369I$ $b = 0.071739 + 0.688234I$	$-0.55610 + 3.43447I$	$-4.09896 - 6.99841I$
$u = 0.211407 - 0.674773I$ $a = 0.560798 - 0.564369I$ $b = 0.071739 - 0.688234I$	$-0.55610 - 3.43447I$	$-4.09896 + 6.99841I$
$u = -0.591819 + 1.167140I$ $a = 1.39061 - 1.42254I$ $b = 1.50968 + 0.30012I$	$-11.3036 - 8.5873I$	$-10.47244 + 4.94316I$
$u = -0.591819 - 1.167140I$ $a = 1.39061 + 1.42254I$ $b = 1.50968 - 0.30012I$	$-11.3036 + 8.5873I$	$-10.47244 - 4.94316I$
$u = 0.220491 + 0.519453I$ $a = 1.49804 - 0.31407I$ $b = 1.295880 - 0.302541I$	$-4.50572 + 7.07402I$	$-11.85478 - 3.67806I$
$u = 0.220491 - 0.519453I$ $a = 1.49804 + 0.31407I$ $b = 1.295880 + 0.302541I$	$-4.50572 - 7.07402I$	$-11.85478 + 3.67806I$
$u = -0.09236 + 1.53921I$ $a = 0.332500 - 0.055199I$ $b = -0.549802 + 0.356787I$	$-7.01159 + 0.64910I$	$-8.38884 - 9.90345I$
$u = -0.09236 - 1.53921I$ $a = 0.332500 + 0.055199I$ $b = -0.549802 - 0.356787I$	$-7.01159 - 0.64910I$	$-8.38884 + 9.90345I$
$u = -0.24185 + 1.69545I$ $a = 1.69176 - 0.16532I$ $b = 1.49847 - 0.16427I$	$-13.69210 + 2.81932I$	$-9.44972 - 3.43141I$
$u = -0.24185 - 1.69545I$ $a = 1.69176 + 0.16532I$ $b = 1.49847 + 0.16427I$	$-13.69210 - 2.81932I$	$-9.44972 + 3.43141I$

IV. $I_4^u = \langle b+1,\ -u^3+u^2+2a-u+1,\ u^4+u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{13}{4}u^3 - \frac{3}{2}u^2 + \frac{5}{2}u - \frac{21}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.547424 + 0.585652I$ $a = -0.552438 + 0.776246I$ $b = -1.00000$	$-0.66484 - 1.39709I$	$-5.25608 + 3.48426I$
$u = -0.547424 - 0.585652I$ $a = -0.552438 - 0.776246I$ $b = -1.00000$	$-0.66484 + 1.39709I$	$-5.25608 - 3.48426I$
$u = 0.547424 + 1.120870I$ $a = -0.697562 - 0.253422I$ $b = -1.00000$	$-4.26996 + 7.64338I$	$-8.61892 - 0.34032I$
$u = 0.547424 - 1.120870I$ $a = -0.697562 + 0.253422I$ $b = -1.00000$	$-4.26996 - 7.64338I$	$-8.61892 + 0.34032I$

V. $I_5^u = \langle -1211u^{11} - 823u^{10} + \cdots + 3595b - 1417,\ 41974u^{11} + 28420u^{10} + \cdots + 17975a + 80569,\ u^{12} + u^{11} + \cdots + 8u + 1\rangle$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} -2.33513u^{11} - 1.58108u^{10} + \cdots - 44.0883u - 4.48228 \\ 0.336857u^{11} + 0.228929u^{10} + \cdots + 5.82253u + 0.394159 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -2.56534u^{11} - 1.99332u^{10} + \cdots - 52.2194u - 8.42904 \\ 0.431711u^{11} + 0.260362u^{10} + \cdots + 8.20278u + 1.34743 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.440779u^{11} + 0.100974u^{10} + \cdots - 1.99866u + 5.07076 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.555271u^{11} - 0.855911u^{10} + \cdots - 16.6424u - 6.84679 \\ 0.118943u^{11} + 0.151321u^{10} + \cdots + 3.89324u + 1.54175 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.106648u^{11} - 0.183310u^{10} + \cdots - 2.30854u - 3.55260 \\ 0.0948540u^{11} + 0.0314325u^{10} + \cdots + 2.38025u + 0.953268 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2.67199u^{11} - 1.81001u^{10} + \cdots - 49.9109u - 4.87644 \\ 0.336857u^{11} + 0.228929u^{10} + \cdots + 5.82253u + 0.394159 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.586871u^{11} - 0.216412u^{10} + \cdots - 5.51394u + 4.56139 \\ 0.0106815u^{11} - 0.0133519u^{10} + \cdots + 1.99883u - 0.661919 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 2.56534u^{11} + 1.99332u^{10} + \cdots + 52.2194u + 8.42904 \\ -0.431711u^{11} - 0.260362u^{10} + \cdots - 8.20278u - 1.34743 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{36624}{17975}u^{11} - \frac{5224}{3595}u^{10} - \frac{196924}{17975}u^9 - \frac{227388}{17975}u^8 - \frac{525084}{17975}u^7 - \frac{576964}{17975}u^6 - \frac{899048}{17975}u^5 - \frac{153372}{3595}u^4 - \frac{42068}{719}u^3 - \frac{582472}{17975}u^2 - \frac{575688}{17975}u - \frac{291894}{17975}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y^3 - 2y^2 + y - 1)^4$
c_3, c_8	$(y-1)^{12}$
c_5, c_7, c_{10} c_{11}	$y^{12} + 11y^{11} + \cdots - 14y + 1$
c_6, c_9	$y^{12} + 4y^{11} + \cdots - 4y + 1$
c_{12}	$(y^3 - y^2 + 2y - 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.385431+1.108730I$ $a=-0.991675+0.538727I$ $b=-0.662359-0.562280I$	$-3.55561-2.82812I$	$-10.49024+2.97945I$
$u=-0.385431-1.108730I$ $a=-0.991675-0.538727I$ $b=-0.662359+0.562280I$	$-3.55561+2.82812I$	$-10.49024-2.97945I$
$u=-0.992399+0.680138I$ $a=\ 0.761675-0.795141I$ $b=\ 1.32472$	$-3.55561+2.82812I$	$-10.49024-2.97945I$
$u=-0.992399-0.680138I$ $a=\ 0.761675+0.795141I$ $b=\ 1.32472$	$-3.55561-2.82812I$	$-10.49024+2.97945I$
$u=\ 0.707479+1.051460I$ $a=\ 0.761004+0.716601I$ $b=\ 1.32472$	$-3.55561+2.82812I$	$-10.49024-2.97945I$
$u=\ 0.707479-1.051460I$ $a=\ 0.761004-0.716601I$ $b=\ 1.32472$	$-3.55561-2.82812I$	$-10.49024+2.97945I$
$u=-0.078903+1.344400I$ $a=\ 0.024791+0.422408I$ $b=-0.662359+0.562280I$	-7.69319	$-17.0195+0.I$
$u=-0.078903-1.344400I$ $a=\ 0.024791-0.422408I$ $b=-0.662359-0.562280I$	-7.69319	$-17.0195+0.I$
$u=\ 0.45634+1.66481I$ $a=-0.087267+0.318365I$ $b=-0.662359-0.562280I$	-7.69319	$-17.0195+0.I$
$u=\ 0.45634-1.66481I$ $a=-0.087267-0.318365I$ $b=-0.662359+0.562280I$	-7.69319	$-17.0195+0.I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.207087+0.121997I$ $a=\ \ 3.53147-4.23160I$ $b=-0.662359+0.562280I$	$-3.55561+2.82812I$	$-10.49024-2.97945I$
$u=-0.207087-0.121997I$ $a=\ \ 3.53147+4.23160I$ $b=-0.662359-0.562280I$	$-3.55561-2.82812I$	$-10.49024+2.97945I$

VI.

$\boldsymbol{I^u_6 = \langle -u^5+u^4+u^2+b-1,\ -u^5+u^4-u^3+u^2+a-u,\ u^6-u^5+u^4-2u^3+u^2+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^5 + 4u^4 - 4u^3 + 4u^2 - 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y^3 - 2y^2 + y - 1)^2$
c_3, c_8	$(y-1)^6$
c_5, c_7, c_{10} c_{11}	$y^6 + y^5 - y^4 + 3y^2 + 2y + 1$
c_6, c_9	$y^6 - 8y^5 + 32y^4 - 75y^3 + 108y^2 - 88y + 49$
c_{12}	$(y^3 - y^2 + 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.206350 + 1.132320I$ $a = -1.083790 + 0.387453I$ $b = -0.662359 + 0.562280I$	$-3.55561 - 2.82812I$	$-10.49024 + 2.97945I$
$u = -0.206350 - 1.132320I$ $a = -1.083790 - 0.387453I$ $b = -0.662359 - 0.562280I$	$-3.55561 + 2.82812I$	$-10.49024 - 2.97945I$
$u = 1.083790 + 0.387453I$ $a = 0.206350 + 1.132320I$ $b = -0.662359 - 0.562280I$	$-3.55561 + 2.82812I$	$-10.49024 - 2.97945I$
$u = 1.083790 - 0.387453I$ $a = 0.206350 - 1.132320I$ $b = -0.662359 + 0.562280I$	$-3.55561 - 2.82812I$	$-10.49024 + 2.97945I$
$u = -0.377439 + 0.653743I$ $a = 0.377439 + 0.653743I$ $b = 1.32472$	-7.69319	$-17.0195 + 0.I$
$u = -0.377439 - 0.653743I$ $a = 0.377439 - 0.653743I$ $b = 1.32472$	-7.69319	$-17.0195 + 0.I$

VII. $\boldsymbol{I^u_7 = \langle b+1,\ u^5+2u^3+a+u,\ u^6-u^5+2u^4-2u^3+2u^2-2u+1\rangle}$

(i) Arc colorings

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

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

$$a_2 = \begin{pmatrix} -u^5-2u^3-u \\ -1 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^5-2u^3-u+1 \\ -1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^5+2u^3+u-1 \\ 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^5-2u^3-u+1 \\ -1 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^4-u^2-1 \\ u^5+2u^3-u^2+2u-1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5+2u^3+u-1 \\ 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.498832 + 1.001300I$ $a = -0.960138 + 0.693124I$ $b = -1.00000$	$-1.91067 - 2.82812I$	$-4.49024 + 2.97945I$
$u = -0.498832 - 1.001300I$ $a = -0.960138 - 0.693124I$ $b = -1.00000$	$-1.91067 + 2.82812I$	$-4.49024 - 2.97945I$
$u = 0.284920 + 1.115140I$ $a = -0.122561 + 0.479689I$ $b = -1.00000$	-6.04826	$-11.01951 + 0.I$
$u = 0.284920 - 1.115140I$ $a = -0.122561 - 0.479689I$ $b = -1.00000$	-6.04826	$-11.01951 + 0.I$
$u = 0.713912 + 0.305839I$ $a = -0.91730 - 1.43799I$ $b = -1.00000$	$-1.91067 - 2.82812I$	$-4.49024 + 2.97945I$
$u = 0.713912 - 0.305839I$ $a = -0.91730 + 1.43799I$ $b = -1.00000$	$-1.91067 + 2.82812I$	$-4.49024 - 2.97945I$

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^{10}(u^3-u-1)^6$ $\cdot(u^{11}-2u^{10}-4u^9+8u^8+6u^7-8u^6-7u^5-2u^4+7u^3+3u^2-u+1)^6$ $\cdot(u^{20}+4u^{19}+\cdots-5u+1)(u^{40}-3u^{39}+\cdots+304u-64)$
c_3	$u^{10}(u-1)^{18}$ $\cdot(u^{11}+2u^{10}-u^9-3u^8+u^7+2u^6+4u^5+11u^4+9u^3+u^2-2u-2)^6$ $\cdot(u^{20}-6u^{18}+\cdots-3u+1)(u^{40}+7u^{39}+\cdots-6912u-1024)$
c_4	$(u+1)^{10}(u^3-u-1)^6$ $\cdot(u^{11}-2u^{10}-4u^9+8u^8+6u^7-8u^6-7u^5-2u^4+7u^3+3u^2-u+1)^6$ $\cdot(u^{20}-4u^{19}+\cdots+5u+1)(u^{40}-3u^{39}+\cdots+304u-64)$
c_5	$(u^4+u^2+u+1)(u^6-u^5+u^4-2u^3+u^2+1)$ $\cdot(u^6-u^5+2u^4-2u^3+2u^2-2u+1)(u^{12}+u^{11}+\cdots+8u+1)$ $\cdot(u^{20}+10u^{18}+\cdots-3u+1)(u^{40}+16u^{38}+\cdots+7u+1)$ $\cdot(u^{66}-2u^{65}+\cdots+34394u+12919)$
c_6	$(u^4-2u^3+3u^2-u+1)(u^6-3u^5+4u^4-2u^3+1)$ $\cdot(u^6+2u^5+\cdots+12u+7)(u^{12}-2u^{11}+\cdots-4u+1)$ $\cdot(u^{20}+3u^{19}+\cdots-5u^3+1)(u^{40}-u^{39}+\cdots-6u^2+1)$ $\cdot(u^{66}-6u^{65}+\cdots-10740u+839)$
c_7	$(u^4+u^2+u+1)(u^6-u^5+u^4-2u^3+u^2+1)$ $\cdot(u^6-u^5+2u^4-2u^3+2u^2-2u+1)(u^{12}+u^{11}+\cdots+8u+1)$ $\cdot(u^{20}+10u^{18}+\cdots+3u+1)(u^{40}+16u^{38}+\cdots+7u+1)$ $\cdot(u^{66}-2u^{65}+\cdots+34394u+12919)$
c_8	$u^{10}(u-1)^{18}$ $\cdot(u^{11}+2u^{10}-u^9-3u^8+u^7+2u^6+4u^5+11u^4+9u^3+u^2-2u-2)^6$ $\cdot(u^{20}-6u^{18}+\cdots+3u+1)(u^{40}+7u^{39}+\cdots-6912u-1024)$
c_9	$(u^4+2u^3+3u^2+u+1)(u^6+2u^5-2u^4-5u^3+4u^2+12u+7)$ $\cdot(u^6+3u^5+4u^4+2u^3+1)(u^{12}-2u^{11}+\cdots-4u+1)$ $\cdot(u^{20}+3u^{19}+\cdots-5u^3+1)(u^{40}-u^{39}+\cdots-6u^2+1)$ $\cdot(u^{66}-6u^{65}+\cdots-10740u+839)$
c_{10}	$(u^4+u^2-u+1)(u^6-u^5+u^4-2u^3+u^2+1)$ $\cdot(u^6+u^5+2u^4+2u^3+2u^2+2u+1)(u^{12}+u^{11}+\cdots+8u+1)$ $\cdot(u^{20}+10u^{18}+\cdots+3u+1)(u^{40}+16u^{38}+\cdots+7u+1)$ $\cdot(u^{66}-2u^{65}+\cdots+34394u+12919)$
c_{11}	$(u^4+u^2-u+1)(u^6-u^5+u^4-2u^3+u^2+1)$ $\cdot(u^6+u^5+2u^4+2u^3+2u^2+2u+1)(u^{12}+u^{11}+\cdots+8u+1)$ $\cdot(u^{20}+10u^{18}+\cdots-3u+1)(u^{40}+16u^{38}+\cdots+7u+1)$ $\cdot(u^{66}-2u^{65}+\cdots+34394u+12919)$
c_{12}	$((u^3+u^2-1)^{30})(u^4-3u^3+\cdots-3u+2)(u^{20}+5u^{19}+\cdots-4u^2+1)$ $\cdot(u^{40}-41u^{39}+\cdots-458752u+16384)$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^{10})(y^3-2y^2+y-1)^6(y^{11}-12y^{10}+\cdots-5y-1)^6$ $\cdot(y^{20}-20y^{19}+\cdots-y+1)(y^{40}-37y^{39}+\cdots-54528y+4096)$
c_3, c_8	$y^{10}(y-1)^{18}(y^{11}-6y^{10}+\cdots+8y-4)^6(y^{20}-12y^{19}+\cdots-9y+1)$ $\cdot(y^{40}-21y^{39}+\cdots-2424832y+1048576)$
c_5, c_7, c_{10} c_{11}	$(y^4+2y^3+3y^2+y+1)(y^6+y^5-y^4+3y^2+2y+1)$ $\cdot(y^6+3y^5+4y^4+2y^3+1)(y^{12}+11y^{11}+\cdots-14y+1)$ $\cdot(y^{20}+20y^{19}+\cdots+15y+1)(y^{40}+32y^{39}+\cdots-25y+1)$ $\cdot(y^{66}+54y^{65}+\cdots-70983068y+166900561)$
c_6, c_9	$(y^4+2y^3+7y^2+5y+1)(y^6-8y^5+\cdots-88y+49)$ $\cdot(y^6-y^5+4y^4-2y^3+8y^2+1)(y^{12}+4y^{11}+\cdots-4y+1)$ $\cdot(y^{20}-5y^{19}+\cdots+6y^2+1)(y^{40}-y^{39}+\cdots-12y+1)$ $\cdot(y^{66}-18y^{65}+\cdots-32088596y+703921)$
c_{12}	$((y^3-y^2+2y-1)^{30})(y^4-y^3+2y^2+7y+4)(y^{20}-5y^{19}+\cdots-8y+1)$ $\cdot(y^{40}-7y^{39}+\cdots-7516192768y+268435456)$