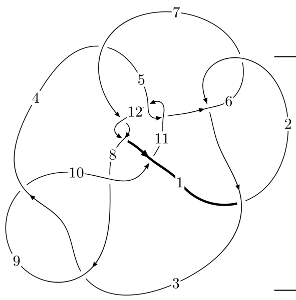
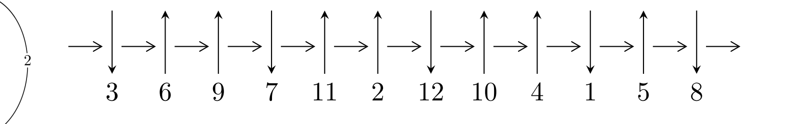
$12a_{0351}$ ($K12a_{0351}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 8.22708 \times 10^{260} u^{115} + 5.90473 \times 10^{259} u^{114} + \cdots + 7.11945 \times 10^{261} b + 7.95379 \times 10^{261},$$
$$5.48204 \times 10^{262} u^{115} + 3.62166 \times 10^{262} u^{114} + \cdots + 9.25529 \times 10^{262} a - 1.21893 \times 10^{263},\ u^{116} + u^{115} + \cdots -$$
$$I_2^u = \langle -3au + 7b + 12a - 5u + 13,\ 18a^2 - 3au + 48a - u + 39,\ u^2 - 2\rangle$$

$$I_1^v = \langle a,\ b - v,\ v^2 + v + 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 122 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. $\boldsymbol{I_1^u = \langle 8.23 \times 10^{260} u^{115} + 5.90 \times 10^{259} u^{114} + \cdots + 7.12 \times 10^{261} b + 7.95 \times 10^{261},\ 5.48 \times 10^{262} u^{115} + 3.62 \times 10^{262} u^{114} + \cdots + 9.26 \times 10^{262} a - 1.22 \times 10^{263},\ u^{116} + u^{115} + \cdots - 12u + 4 \rangle}$

(i) Arc colorings

$$
\begin{aligned}
a_3 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\
a_9 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\
a_4 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\
a_6 &= \begin{pmatrix} -0.592314u^{115} - 0.391307u^{114} + \cdots + 4.00136u + 1.31701 \\ -0.115558u^{115} - 0.00829380u^{114} + \cdots + 6.41816u - 1.11719 \end{pmatrix} \\
a_{10} &= \begin{pmatrix} u \\ -u^3 + u \end{pmatrix} \\
a_2 &= \begin{pmatrix} -0.0576376u^{115} - 0.341529u^{114} + \cdots + 2.70043u + 6.41023 \\ -0.109926u^{115} - 0.000292556u^{114} + \cdots + 5.86706u - 2.13299 \end{pmatrix} \\
a_7 &= \begin{pmatrix} -0.624496u^{115} - 0.335359u^{114} + \cdots + 13.6484u + 4.37568 \\ 0.130256u^{115} + 0.108791u^{114} + \cdots + 2.77584u - 1.42974 \end{pmatrix} \\
a_5 &= \begin{pmatrix} 0.918893u^{115} + 0.826941u^{114} + \cdots + 5.11609u - 0.840015 \\ 0.278228u^{115} + 0.0809501u^{114} + \cdots - 9.46479u + 0.173513 \end{pmatrix} \\
a_1 &= \begin{pmatrix} -0.167564u^{115} - 0.341822u^{114} + \cdots + 8.56749u + 4.27725 \\ -0.109926u^{115} - 0.000292556u^{114} + \cdots + 5.86706u - 2.13299 \end{pmatrix} \\
a_8 &= \begin{pmatrix} -u^3 \\ u^5 - u^3 + u \end{pmatrix} \\
a_{12} &= \begin{pmatrix} -0.105593u^{115} - 0.334986u^{114} + \cdots + 6.85446u + 4.76672 \\ -0.132149u^{115} + 0.0239453u^{114} + \cdots + 5.21273u - 2.20714 \end{pmatrix} \\
a_{11} &= \begin{pmatrix} 0.453168u^{115} + 0.309762u^{114} + \cdots - 5.33012u - 6.99372 \\ -0.199402u^{115} - 0.129061u^{114} + \cdots + 1.83081u + 0.396491 \end{pmatrix}
\end{aligned}
$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.30353u^{115} + 0.380419u^{114} + \cdots - 48.9228u + 9.39672$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{116} + 52u^{115} + \cdots - 5438u + 289$
c_2, c_6	$u^{116} - 2u^{115} + \cdots + 44u + 17$
c_3, c_9	$u^{116} + u^{115} + \cdots - 12u + 4$
c_4	$28561(28561u^{116} - 153790u^{115} + \cdots - 8.25675 \times 10^8 u + 3.49024 \times 10^7)$
c_5, c_{11}	$u^{116} + u^{115} + \cdots + 44u + 4$
c_7, c_{12}	$u^{116} + 3u^{115} + \cdots - 989u + 343$
c_8	$u^{116} - 51u^{115} + \cdots - 304u + 16$
c_{10}	$28561(28561u^{116} + 173563u^{115} + \cdots - 6624257u + 463351)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{116} + 28y^{115} + \cdots - 20164894y + 83521$
c_2, c_6	$y^{116} + 52y^{115} + \cdots - 5438y + 289$
c_3, c_9	$y^{116} - 51y^{115} + \cdots - 304y + 16$
c_4	815730721 $\cdot (8.16 \times 10^8 y^{116} - 2.56 \times 10^{10} y^{115} + \cdots + 3.19 \times 10^{16} y + 1.22 \times 10^{15})$
c_5, c_{11}	$y^{116} + 69y^{115} + \cdots + 80y + 16$
c_7, c_{12}	$y^{116} - 93y^{115} + \cdots - 1659319y + 117649$
c_8	$y^{116} + 33y^{115} + \cdots - 4864y + 256$
c_{10}	815730721 $\cdot (8.16 \times 10^8 y^{116} - 5.43 \times 10^{10} y^{115} + \cdots - 1.02 \times 10^{13} y + 2.15 \times 10^{11})$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.466716 + 0.884426I$ $a = -0.783595 - 0.126337I$ $b = 0.653585 - 0.363267I$	$-2.67219 + 1.89988I$	0
$u = -0.466716 - 0.884426I$ $a = -0.783595 + 0.126337I$ $b = 0.653585 + 0.363267I$	$-2.67219 - 1.89988I$	0
$u = 0.833896 + 0.554451I$ $a = -0.727306 - 0.756093I$ $b = 0.541090 - 1.019580I$	$-2.32060 + 0.05845I$	0
$u = 0.833896 - 0.554451I$ $a = -0.727306 + 0.756093I$ $b = 0.541090 + 1.019580I$	$-2.32060 - 0.05845I$	0
$u = 0.515699 + 0.858960I$ $a = 0.768671 + 0.054540I$ $b = -0.664056 + 0.147665I$	$-6.86951 + 3.26307I$	0
$u = 0.515699 - 0.858960I$ $a = 0.768671 - 0.054540I$ $b = -0.664056 - 0.147665I$	$-6.86951 - 3.26307I$	0
$u = -0.796622 + 0.599234I$ $a = -0.234219 + 0.406414I$ $b = -0.68922 - 1.38197I$	$-5.98756 + 0.45829I$	0
$u = -0.796622 - 0.599234I$ $a = -0.234219 - 0.406414I$ $b = -0.68922 + 1.38197I$	$-5.98756 - 0.45829I$	0
$u = 0.496277 + 0.882378I$ $a = 0.683895 - 0.105274I$ $b = -0.921430 - 0.377905I$	$-6.72237 - 7.44661I$	0
$u = 0.496277 - 0.882378I$ $a = 0.683895 + 0.105274I$ $b = -0.921430 + 0.377905I$	$-6.72237 + 7.44661I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.821230 + 0.618768I$ $a = -0.794720 - 1.140120I$ $b = 0.261743 - 0.895424I$	$-2.04215 - 2.50988I$	0
$u = -0.821230 - 0.618768I$ $a = -0.794720 + 1.140120I$ $b = 0.261743 + 0.895424I$	$-2.04215 + 2.50988I$	0
$u = 0.872725 + 0.555380I$ $a = 2.93230 - 0.92577I$ $b = -0.622964 - 0.983728I$	$-2.19443 + 4.38805I$	0
$u = 0.872725 - 0.555380I$ $a = 2.93230 + 0.92577I$ $b = -0.622964 + 0.983728I$	$-2.19443 - 4.38805I$	0
$u = -0.314014 + 0.987232I$ $a = 0.779419 - 0.361334I$ $b = -0.337968 - 1.111900I$	$-10.48240 + 0.02403I$	0
$u = -0.314014 - 0.987232I$ $a = 0.779419 + 0.361334I$ $b = -0.337968 + 1.111900I$	$-10.48240 - 0.02403I$	0
$u = -0.835930 + 0.617038I$ $a = -0.597118 - 0.860842I$ $b = -0.061420 - 0.822216I$	$-2.00858 - 2.35815I$	0
$u = -0.835930 - 0.617038I$ $a = -0.597118 + 0.860842I$ $b = -0.061420 + 0.822216I$	$-2.00858 + 2.35815I$	0
$u = 0.838690 + 0.617546I$ $a = 1.269560 - 0.256708I$ $b = -0.09071 - 1.52895I$	$-6.41289 + 2.42988I$	0
$u = 0.838690 - 0.617546I$ $a = 1.269560 + 0.256708I$ $b = -0.09071 + 1.52895I$	$-6.41289 - 2.42988I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.041140 + 0.185992I$ $a = -1.83112 - 0.13921I$ $b = 0.815154 + 0.555869I$	$3.19024 - 0.63993I$	0
$u = 1.041140 - 0.185992I$ $a = -1.83112 + 0.13921I$ $b = 0.815154 - 0.555869I$	$3.19024 + 0.63993I$	0
$u = -0.640644 + 0.848844I$ $a = 0.735683 + 0.692782I$ $b = -0.112380 + 1.305980I$	$-12.68570 + 4.21380I$	0
$u = -0.640644 - 0.848844I$ $a = 0.735683 - 0.692782I$ $b = -0.112380 - 1.305980I$	$-12.68570 - 4.21380I$	0
$u = -0.883251 + 0.602570I$ $a = -2.08121 - 0.54168I$ $b = 0.83111 - 1.31723I$	$-5.71767 - 5.21650I$	0
$u = -0.883251 - 0.602570I$ $a = -2.08121 + 0.54168I$ $b = 0.83111 + 1.31723I$	$-5.71767 + 5.21650I$	0
$u = -0.995874 + 0.401809I$ $a = -0.71960 - 2.00101I$ $b = 0.329550 + 0.745071I$	$-1.73973 - 1.33290I$	0
$u = -0.995874 - 0.401809I$ $a = -0.71960 + 2.00101I$ $b = 0.329550 - 0.745071I$	$-1.73973 + 1.33290I$	0
$u = -0.495701 + 0.956635I$ $a = 0.742573 - 0.406437I$ $b = -0.634931 - 1.162860I$	$-9.1087 + 13.1311I$	0
$u = -0.495701 - 0.956635I$ $a = 0.742573 + 0.406437I$ $b = -0.634931 + 1.162860I$	$-9.1087 - 13.1311I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.775905 + 0.497045I$ $a = -0.165278 - 0.775090I$ $b = -0.238451 - 0.070476I$	$-1.78328 - 2.08266I$	0
$u = -0.775905 - 0.497045I$ $a = -0.165278 + 0.775090I$ $b = -0.238451 + 0.070476I$	$-1.78328 + 2.08266I$	0
$u = 0.494221 + 0.759596I$ $a = 0.307685 + 0.600397I$ $b = -0.590578 + 1.186130I$	$-3.60510 - 7.79415I$	0
$u = 0.494221 - 0.759596I$ $a = 0.307685 - 0.600397I$ $b = -0.590578 - 1.186130I$	$-3.60510 + 7.79415I$	0
$u = -0.779427 + 0.450974I$ $a = 0.39113 + 1.97543I$ $b = -0.670300 - 0.709245I$	$-1.32894 + 0.70219I$	0
$u = -0.779427 - 0.450974I$ $a = 0.39113 - 1.97543I$ $b = -0.670300 + 0.709245I$	$-1.32894 - 0.70219I$	0
$u = -0.957835 + 0.541099I$ $a = -0.955456 + 0.073183I$ $b = 0.723527 - 0.452906I$	$-0.57651 - 4.79475I$	0
$u = -0.957835 - 0.541099I$ $a = -0.955456 - 0.073183I$ $b = 0.723527 + 0.452906I$	$-0.57651 + 4.79475I$	0
$u = 0.713321 + 0.547036I$ $a = -0.287533 + 1.169400I$ $b = 1.054150 - 0.828225I$	$-4.19877 - 2.44712I$	0
$u = 0.713321 - 0.547036I$ $a = -0.287533 - 1.169400I$ $b = 1.054150 + 0.828225I$	$-4.19877 + 2.44712I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.943567 + 0.584400I$ $a = 1.68583 - 0.51157I$ $b = -1.159030 - 0.663749I$	$-3.47234 + 7.03624I$	0
$u = 0.943567 - 0.584400I$ $a = 1.68583 + 0.51157I$ $b = -1.159030 + 0.663749I$	$-3.47234 - 7.03624I$	0
$u = 0.942127 + 0.604306I$ $a = 1.162640 - 0.293149I$ $b = 0.439750 - 0.953612I$	$-2.77882 - 0.58975I$	0
$u = 0.942127 - 0.604306I$ $a = 1.162640 + 0.293149I$ $b = 0.439750 + 0.953612I$	$-2.77882 + 0.58975I$	0
$u = -1.117360 + 0.069621I$ $a = -1.28817 - 1.08342I$ $b = 0.642708 + 1.046490I$	$1.70184 + 6.08053I$	0
$u = -1.117360 - 0.069621I$ $a = -1.28817 + 1.08342I$ $b = 0.642708 - 1.046490I$	$1.70184 - 6.08053I$	0
$u = 0.832789 + 0.225789I$ $a = -0.601053 + 0.233524I$ $b = 0.550015 + 0.084883I$	$1.292750 + 0.325346I$	0
$u = 0.832789 - 0.225789I$ $a = -0.601053 - 0.233524I$ $b = 0.550015 - 0.084883I$	$1.292750 - 0.325346I$	0
$u = 0.670876 + 0.535881I$ $a = 0.90736 + 2.57743I$ $b = -0.366397 + 0.954160I$	$-3.79397 - 0.49844I$	0
$u = 0.670876 - 0.535881I$ $a = 0.90736 - 2.57743I$ $b = -0.366397 - 0.954160I$	$-3.79397 + 0.49844I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.484795 + 1.034740I$ $a = -0.722748 - 0.354639I$ $b = 0.551009 - 1.081070I$	$-4.70990 - 6.59407I$	0
$u = 0.484795 - 1.034740I$ $a = -0.722748 + 0.354639I$ $b = 0.551009 + 1.081070I$	$-4.70990 + 6.59407I$	0
$u = 0.555186 + 0.644462I$ $a = 0.004936 - 0.922208I$ $b = -0.449425 - 1.037710I$	$-3.82491 + 5.40390I$	0
$u = 0.555186 - 0.644462I$ $a = 0.004936 + 0.922208I$ $b = -0.449425 + 1.037710I$	$-3.82491 - 5.40390I$	0
$u = 1.016380 + 0.540681I$ $a = -3.12129 + 0.64540I$ $b = 0.461647 + 0.967079I$	$-2.64987 + 4.84972I$	0
$u = 1.016380 - 0.540681I$ $a = -3.12129 - 0.64540I$ $b = 0.461647 - 0.967079I$	$-2.64987 - 4.84972I$	0
$u = -1.024480 + 0.567357I$ $a = -0.768018 - 1.100840I$ $b = 1.056100 + 0.312277I$	$0.82781 - 7.00319I$	0
$u = -1.024480 - 0.567357I$ $a = -0.768018 + 1.100840I$ $b = 1.056100 - 0.312277I$	$0.82781 + 7.00319I$	0
$u = -0.592343 + 1.011110I$ $a = 0.918671 + 0.496773I$ $b = -0.481119 + 1.110180I$	$-9.55063 - 7.53106I$	0
$u = -0.592343 - 1.011110I$ $a = 0.918671 - 0.496773I$ $b = -0.481119 - 1.110180I$	$-9.55063 + 7.53106I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.054510 + 0.527628I$ $a = 0.612085 - 1.147380I$ $b = -0.787200 + 0.516832I$	$3.25793 + 3.13597I$	0
$u = 1.054510 - 0.527628I$ $a = 0.612085 + 1.147380I$ $b = -0.787200 - 0.516832I$	$3.25793 - 3.13597I$	0
$u = -1.151090 + 0.257276I$ $a = 1.87268 - 0.39708I$ $b = -0.691766 + 0.756944I$	$4.99239 - 4.08939I$	0
$u = -1.151090 - 0.257276I$ $a = 1.87268 + 0.39708I$ $b = -0.691766 - 0.756944I$	$4.99239 + 4.08939I$	0
$u = 0.736999 + 0.921312I$ $a = -1.021070 + 0.667460I$ $b = 0.245911 + 1.047670I$	$-6.68894 + 0.36281I$	0
$u = 0.736999 - 0.921312I$ $a = -1.021070 - 0.667460I$ $b = 0.245911 - 1.047670I$	$-6.68894 - 0.36281I$	0
$u = -0.416152 + 0.702982I$ $a = -0.657214 + 0.652284I$ $b = 0.550081 + 1.020460I$	$-0.25960 + 3.42242I$	0
$u = -0.416152 - 0.702982I$ $a = -0.657214 - 0.652284I$ $b = 0.550081 - 1.020460I$	$-0.25960 - 3.42242I$	0
$u = 1.190070 + 0.157741I$ $a = 1.33756 - 0.93877I$ $b = -0.634540 + 0.887405I$	$4.59187 - 1.01993I$	0
$u = 1.190070 - 0.157741I$ $a = 1.33756 + 0.93877I$ $b = -0.634540 - 0.887405I$	$4.59187 + 1.01993I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.075010+0.604590I$ $a=\ \ 2.23506+0.54337I$ $b=-0.625953+1.067030I$	$1.59755-8.45756I$	0
$u=-1.075010-0.604590I$ $a=\ \ 2.23506-0.54337I$ $b=-0.625953-1.067030I$	$1.59755+8.45756I$	0
$u=-0.755200+0.125730I$ $a=\ \ 0.54008+1.48819I$ $b=-0.787063-0.237062I$	$-1.07137+2.52393I$	$3.16937-4.49551I$
$u=-0.755200-0.125730I$ $a=\ \ 0.54008-1.48819I$ $b=-0.787063+0.237062I$	$-1.07137-2.52393I$	$3.16937+4.49551I$
$u=\ \ 1.203200+0.280770I$ $a=-0.617584+0.816387I$ $b=\ \ 0.118500-0.988627I$	$-5.27584+3.81255I$	0
$u=\ \ 1.203200-0.280770I$ $a=-0.617584-0.816387I$ $b=\ \ 0.118500+0.988627I$	$-5.27584-3.81255I$	0
$u=-1.239360+0.011306I$ $a=-1.72127+0.47650I$ $b=\ \ 0.754990-0.485834I$	$-0.39657+5.22699I$	0
$u=-1.239360-0.011306I$ $a=-1.72127-0.47650I$ $b=\ \ 0.754990+0.485834I$	$-0.39657-5.22699I$	0
$u=\ \ 1.067530+0.631606I$ $a=-2.14334+0.54583I$ $b=\ \ 0.656745+1.212430I$	$-1.92381+13.07300I$	0
$u=\ \ 1.067530-0.631606I$ $a=-2.14334-0.54583I$ $b=\ \ 0.656745-1.212430I$	$-1.92381-13.07300I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.985981 + 0.756728I$ $a = -0.260236 + 0.487469I$ $b = -0.096176 + 1.081310I$	$-5.88877 + 5.77264I$	0
$u = 0.985981 - 0.756728I$ $a = -0.260236 - 0.487469I$ $b = -0.096176 - 1.081310I$	$-5.88877 - 5.77264I$	0
$u = -1.031980 + 0.710550I$ $a = 0.884175 + 0.148388I$ $b = 0.038755 + 1.349030I$	$-11.4894 - 10.0129I$	0
$u = -1.031980 - 0.710550I$ $a = 0.884175 - 0.148388I$ $b = 0.038755 - 1.349030I$	$-11.4894 + 10.0129I$	0
$u = 1.092310 + 0.648197I$ $a = -1.064780 + 0.605997I$ $b = 0.519866 - 0.069837I$	$-5.11265 + 2.34089I$	0
$u = 1.092310 - 0.648197I$ $a = -1.064780 - 0.605997I$ $b = 0.519866 + 0.069837I$	$-5.11265 - 2.34089I$	0
$u = 1.110740 + 0.671729I$ $a = -0.748880 + 1.141040I$ $b = 0.972089 - 0.432265I$	$-4.85981 + 13.19030I$	0
$u = 1.110740 - 0.671729I$ $a = -0.748880 - 1.141040I$ $b = 0.972089 + 0.432265I$	$-4.85981 - 13.19030I$	0
$u = -1.121050 + 0.670941I$ $a = 0.699124 + 0.904242I$ $b = -0.783809 - 0.455402I$	$-0.70851 - 7.64661I$	0
$u = -1.121050 - 0.670941I$ $a = 0.699124 - 0.904242I$ $b = -0.783809 + 0.455402I$	$-0.70851 + 7.64661I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.422603+0.538929I$ $a=\ \ 0.225851+0.641616I$ $b=-0.854397+0.188053I$	$-0.74861+2.47173I$	$0.57968-3.86930I$
$u=-0.422603-0.538929I$ $a=\ \ 0.225851-0.641616I$ $b=-0.854397-0.188053I$	$-0.74861-2.47173I$	$0.57968+3.86930I$
$u=-1.139660+0.696578I$ $a=-2.22336-0.45953I$ $b=\ \ 0.671975-1.167110I$	$-7.1260-19.1636I$	0
$u=-1.139660-0.696578I$ $a=-2.22336+0.45953I$ $b=\ \ 0.671975+1.167110I$	$-7.1260+19.1636I$	0
$u=\ \ 1.339520+0.019185I$ $a=-1.53348-0.82587I$ $b=\ \ 0.609430+1.074170I$	$-2.15349+10.41260I$	0
$u=\ \ 1.339520-0.019185I$ $a=-1.53348+0.82587I$ $b=\ \ 0.609430-1.074170I$	$-2.15349-10.41260I$	0
$u=\ \ 1.163830+0.723777I$ $a=\ \ 1.99794-0.40565I$ $b=-0.614263-1.092660I$	$-2.60839+12.91820I$	0
$u=\ \ 1.163830-0.723777I$ $a=\ \ 1.99794+0.40565I$ $b=-0.614263+1.092660I$	$-2.60839-12.91820I$	0
$u=-0.616361+0.117547I$ $a=-0.631662-0.993118I$ $b=\ \ 0.385313-0.950143I$	$-0.95525-2.77494I$	$4.16705+7.27073I$
$u=-0.616361-0.117547I$ $a=-0.631662+0.993118I$ $b=\ \ 0.385313+0.950143I$	$-0.95525+2.77494I$	$4.16705-7.27073I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.108530+0.821412I$ $a=-0.122967-0.159962I$ $b=\ \ 0.396192+1.068680I$	$-7.99961+0.94403I$	0
$u=-1.108530-0.821412I$ $a=-0.122967+0.159962I$ $b=\ \ 0.396192-1.068680I$	$-7.99961-0.94403I$	0
$u=\ \ 0.181878+0.591925I$ $a=-0.490273+0.249127I$ $b=\ \ 0.581289+0.577000I$	$1.10147+1.10758I$	$4.88695-3.86624I$
$u=\ \ 0.181878-0.591925I$ $a=-0.490273-0.249127I$ $b=\ \ 0.581289-0.577000I$	$1.10147-1.10758I$	$4.88695+3.86624I$
$u=-1.24962+0.66959I$ $a=-1.86159-0.03426I$ $b=\ \ 0.450242-1.071500I$	$-7.64422-6.06435I$	0
$u=-1.24962-0.66959I$ $a=-1.86159+0.03426I$ $b=\ \ 0.450242+1.071500I$	$-7.64422+6.06435I$	0
$u=\ \ 1.41551+0.14998I$ $a=\ \ 1.42035+0.40663I$ $b=-0.451135-0.719052I$	$3.52152+1.19712I$	0
$u=\ \ 1.41551-0.14998I$ $a=\ \ 1.42035-0.40663I$ $b=-0.451135+0.719052I$	$3.52152-1.19712I$	0
$u=-0.173548+0.435678I$ $a=-1.77580-0.00885I$ $b=-0.281662-0.593654I$	$-1.84260+1.06316I$	$-2.87257+1.74785I$
$u=-0.173548-0.435678I$ $a=-1.77580+0.00885I$ $b=-0.281662+0.593654I$	$-1.84260-1.06316I$	$-2.87257-1.74785I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.54440 + 0.09700I$ $a = 1.188900 + 0.578674I$ $b = -0.480566 - 0.964286I$	$2.68981 + 2.67919I$	0
$u = -1.54440 - 0.09700I$ $a = 1.188900 - 0.578674I$ $b = -0.480566 + 0.964286I$	$2.68981 - 2.67919I$	0
$u = 0.026779 + 0.320029I$ $a = 1.91460 - 1.84893I$ $b = -0.389926 + 1.065330I$	$-4.03516 - 1.34228I$	$-3.61078 + 0.66174I$
$u = 0.026779 - 0.320029I$ $a = 1.91460 + 1.84893I$ $b = -0.389926 - 1.065330I$	$-4.03516 + 1.34228I$	$-3.61078 - 0.66174I$
$u = 0.221346 + 0.109152I$ $a = 0.17931 - 5.05439I$ $b = 0.706323 + 0.848981I$	$-3.45719 + 2.69856I$	$-2.19132 - 3.25247I$
$u = 0.221346 - 0.109152I$ $a = 0.17931 + 5.05439I$ $b = 0.706323 - 0.848981I$	$-3.45719 - 2.69856I$	$-2.19132 + 3.25247I$

II. $I_2^u = \langle -3au + 7b + 12a - 5u + 13,\ 18a^2 - 3au + 48a - u + 39,\ u^2 - 2 \rangle$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} a \\ \frac{3}{7}au - \frac{12}{7}a + \frac{5}{7}u - \frac{13}{7} \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.714286au + 2.85714a - 1.02381u + 4.76190 \\ \frac{3}{7}au - \frac{12}{7}a + \frac{5}{7}u - \frac{20}{7} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.285714au + 1.14286a - 0.309524u + 1.90476 \\ \frac{3}{7}au - \frac{12}{7}a + \frac{5}{7}u - \frac{20}{7} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{8}{21}au + \frac{1}{7}a + \frac{40}{63}u + \frac{71}{63} \\ -\frac{3}{7}au - \frac{2}{7}a - \frac{5}{7}u - \frac{15}{7} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.285714au + 1.14286a - 0.309524u + 1.90476 \\ \frac{3}{7}au - \frac{12}{7}a + \frac{5}{7}u - \frac{20}{7} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -2u \\ 3u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.285714au + 1.14286a + 1.69048u + 1.90476 \\ \frac{3}{7}au - \frac{12}{7}a - \frac{16}{7}u - \frac{20}{7} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.428571au + 0.380952a + 0.563492u + 0.634921 \\ \frac{5}{7}au - \frac{6}{7}a - \frac{1}{7}u - \frac{10}{7} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{12}{7}au + \frac{48}{7}a - \frac{20}{7}u + \frac{80}{7}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u^2 - u + 1)^2$
c_3, c_5, c_9 c_{11}	$(u^2 - 2)^2$
c_4	$81(81u^4 - 54u^3 - 9u^2 + 6u + 7)$
c_6	$(u^2 + u + 1)^2$
c_7	$(u + 1)^4$
c_8	$(u + 2)^4$
c_{10}	$81(81u^4 - 108u^3 + 72u^2 - 24u + 7)$
c_{12}	$(u - 1)^4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6	$(y^2+y+1)^2$
c_3, c_5, c_9 c_{11}	$(y-2)^4$
c_4	$6561(6561y^4-4374y^3+1863y^2-162y+49)$
c_7, c_{12}	$(y-1)^4$
c_8	$(y-4)^4$
c_{10}	$6561(6561y^4+1134y^2+432y+49)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.41421$ $a = -1.21548 + 0.78147I$ $b = 0.500000 - 0.866025I$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = 1.41421$ $a = -1.21548 - 0.78147I$ $b = 0.500000 + 0.866025I$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$
$u = -1.41421$ $a = -1.45118 + 0.37323I$ $b = 0.500000 - 0.866025I$	$3.28987 - 2.02988I$	$2.00000 + 3.46410I$
$u = -1.41421$ $a = -1.45118 - 0.37323I$ $b = 0.500000 + 0.866025I$	$3.28987 + 2.02988I$	$2.00000 - 3.46410I$

III. $\boldsymbol{I_1^v = \langle a,\ b - v,\ v^2 + v + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v + 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$ $a = 0$ $b = -0.500000 + 0.866025I$	$-1.64493 - 2.02988I$	$0. + 3.46410I$
$v = -0.500000 - 0.866025I$ $a = 0$ $b = -0.500000 - 0.866025I$	$-1.64493 + 2.02988I$	$0. - 3.46410I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^3)(u^{116}+52u^{115}+\cdots-5438u+289)$
c_2	$((u^2-u+1)^2)(u^2+u+1)(u^{116}-2u^{115}+\cdots+44u+17)$
c_3, c_9	$u^2(u^2-2)^2(u^{116}+u^{115}+\cdots-12u+4)$
c_4	$2313441(u^2-u+1)(81u^4-54u^3-9u^2+6u+7)$ $\cdot(28561u^{116}-153790u^{115}+\cdots-825674530u+34902367)$
c_5, c_{11}	$u^2(u^2-2)^2(u^{116}+u^{115}+\cdots+44u+4)$
c_6	$(u^2-u+1)(u^2+u+1)^2(u^{116}-2u^{115}+\cdots+44u+17)$
c_7	$((u-1)^2)(u+1)^4(u^{116}+3u^{115}+\cdots-989u+343)$
c_8	$u^2(u+2)^4(u^{116}-51u^{115}+\cdots-304u+16)$
c_{10}	$2313441(u-1)^2(81u^4-108u^3+72u^2-24u+7)$ $\cdot(28561u^{116}+173563u^{115}+\cdots-6624257u+463351)$
c_{12}	$((u-1)^4)(u+1)^2(u^{116}+3u^{115}+\cdots-989u+343)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^3)(y^{116}+28y^{115}+\cdots-2.01649\times 10^7 y+83521)$
c_2, c_6	$((y^2+y+1)^3)(y^{116}+52y^{115}+\cdots-5438y+289)$
c_3, c_9	$y^2(y-2)^4(y^{116}-51y^{115}+\cdots-304y+16)$
c_4	$5352009260481(y^2+y+1)$ $\cdot\,(6561y^4-4374y^3+1863y^2-162y+49)$ $\cdot\,(8.16\times 10^8 y^{116}-2.56\times 10^{10} y^{115}+\cdots+3.19\times 10^{16} y+1.22\times 10^{15})$
c_5, c_{11}	$y^2(y-2)^4(y^{116}+69y^{115}+\cdots+80y+16)$
c_7, c_{12}	$((y-1)^6)(y^{116}-93y^{115}+\cdots-1659319y+117649)$
c_8	$y^2(y-4)^4(y^{116}+33y^{115}+\cdots-4864y+256)$
c_{10}	$5352009260481(y-1)^2(6561y^4+1134y^2+432y+49)$ $\cdot\,(8.16\times 10^8 y^{116}-5.43\times 10^{10} y^{115}+\cdots-1.02\times 10^{13} y+2.15\times 10^{11})$