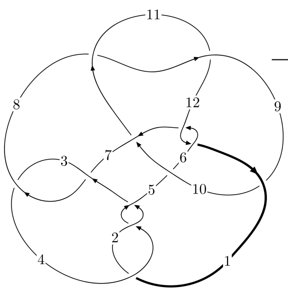
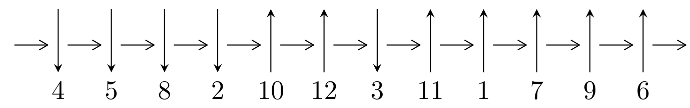
$12a_{0830}$ ($K12a_{0830}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle &-1.45248 \times 10^{403} u^{112} + 2.57534 \times 10^{403} u^{111} + \cdots + 7.60655 \times 10^{404} b - 1.41148 \times 10^{405}, \\
&- 3.58295 \times 10^{402} u^{112} + 6.66928 \times 10^{402} u^{111} + \cdots + 8.94888 \times 10^{403} a - 1.02347 \times 10^{405}, \\
&u^{113} - 2u^{112} + \cdots + 896u - 256\rangle \\
I_2^u = \langle &-22u^2 + 17b + 15u - 40,\ -u^2 + a + u - 2,\ u^3 - u^2 + 2u - 1\rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v = \langle &a,\ 72v^7 - 466v^6 - 1954v^5 + 4124v^4 + 13122v^3 - 3530v^2 + 887b - 5049v + 2666, \\
&v^8 + 3v^7 - 7v^6 - 28v^5 - 13v^4 + 8v^3 - 2v + 1\rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 124 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. $\boldsymbol{I_1^u = \langle -1.45 \times 10^{403} u^{112} + 2.58 \times 10^{403} u^{111} + \cdots + 7.61 \times 10^{404} b - 1.41 \times 10^{405},\ -3.58 \times 10^{402} u^{112} + 6.67 \times 10^{402} u^{111} + \cdots + 8.95 \times 10^{403} a - 1.02 \times 10^{405},\ u^{113} - 2u^{112} + \cdots + 896u - 256 \rangle}$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} 0.0400380u^{112} - 0.0745263u^{111} + \cdots + 1.44165u + 11.4369 \\ 0.0190951u^{112} - 0.0338568u^{111} + \cdots + 5.71448u + 1.85561 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.00768519u^{112} + 0.0258094u^{111} + \cdots - 28.2706u + 7.32413 \\ 0.0215710u^{112} - 0.0343632u^{111} + \cdots - 2.70707u + 4.95920 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0166558u^{112} - 0.0116771u^{111} + \cdots - 31.1306u + 11.0180 \\ -0.00139532u^{112} + 0.00197886u^{111} + \cdots + 4.41793u - 1.91206 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.0623893u^{112} + 0.0719018u^{111} + \cdots + 82.4207u - 33.2834 \\ -0.0116805u^{112} + 0.0134724u^{111} + \cdots + 15.8056u - 5.85623 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0408769u^{112} - 0.0373320u^{111} + \cdots - 84.9975u + 34.3053 \\ 0.0107707u^{112} - 0.0171522u^{111} + \cdots - 3.86228u + 2.98419 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0397259u^{112} - 0.0772883u^{111} + \cdots + 5.71328u + 11.7482 \\ 0.0187830u^{112} - 0.0366188u^{111} + \cdots + 9.98611u + 2.16697 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0428338u^{112} + 0.0321310u^{111} + \cdots + 110.473u - 42.6931 \\ -0.00195693u^{112} - 0.00520094u^{111} + \cdots + 25.4752u - 8.38781 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0428338u^{112} - 0.0321310u^{111} + \cdots - 110.473u + 42.6931 \\ 0.00867147u^{112} - 0.0107891u^{111} + \cdots - 11.5282u + 5.31757 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.146247u^{112} - 0.233542u^{111} + \cdots - 65.9092u + 69.0820$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_4	$u^{113} - 10u^{112} + \cdots + u - 1$
c_3, c_7	$u^{113} - 2u^{112} + \cdots + 896u - 256$
c_5	$u^{113} + 2u^{112} + \cdots - 41820u - 2312$
c_6, c_{12}	$u^{113} + 3u^{112} + \cdots + 3u + 1$
c_8, c_{11}	$u^{113} + 5u^{112} + \cdots - 1158u + 289$
c_9	$17(17u^{113} + 219u^{112} + \cdots + 16199u + 2539)$
c_{10}	$17(17u^{113} + 212u^{112} + \cdots - 115224u - 34421)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^{113} - 100y^{112} + \cdots - 13y - 1$
c_3, c_7	$y^{113} - 48y^{112} + \cdots + 1425408y - 65536$
c_5	$y^{113} + 18y^{112} + \cdots + 117380240y - 5345344$
c_6, c_{12}	$y^{113} + 61y^{112} + \cdots + 19y - 1$
c_8, c_{11}	$y^{113} - 69y^{112} + \cdots + 10227136y - 83521$
c_9	$289(289y^{113} + 6473y^{112} + \cdots - 3.80828 \times 10^8 y - 6446521)$
c_{10}	$289(289y^{113} - 1016y^{112} + \cdots - 6.58097 \times 10^9 y - 1.18481 \times 10^9)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.838996 + 0.519691I$ $a = -1.00735 - 0.99352I$ $b = -0.72221 - 1.67273I$	$2.81518 + 2.25501I$	0
$u = -0.838996 - 0.519691I$ $a = -1.00735 + 0.99352I$ $b = -0.72221 + 1.67273I$	$2.81518 - 2.25501I$	0
$u = -0.408038 + 0.896770I$ $a = 1.006650 + 0.985618I$ $b = -0.287546 + 0.217220I$	$2.05403 - 8.53878I$	0
$u = -0.408038 - 0.896770I$ $a = 1.006650 - 0.985618I$ $b = -0.287546 - 0.217220I$	$2.05403 + 8.53878I$	0
$u = 0.991916 + 0.215082I$ $a = -0.462328 - 0.945148I$ $b = -0.14976 - 2.01843I$	$-5.58135 - 3.04071I$	0
$u = 0.991916 - 0.215082I$ $a = -0.462328 + 0.945148I$ $b = -0.14976 + 2.01843I$	$-5.58135 + 3.04071I$	0
$u = 0.866741 + 0.411780I$ $a = -0.140138 + 0.673956I$ $b = 0.45614 + 1.69373I$	$-4.97488 + 1.61721I$	0
$u = 0.866741 - 0.411780I$ $a = -0.140138 - 0.673956I$ $b = 0.45614 - 1.69373I$	$-4.97488 - 1.61721I$	0
$u = 0.882043 + 0.367780I$ $a = 0.916925 - 0.363319I$ $b = 5.05394 - 4.27372I$	$-0.45862 - 1.47435I$	0
$u = 0.882043 - 0.367780I$ $a = 0.916925 + 0.363319I$ $b = 5.05394 + 4.27372I$	$-0.45862 + 1.47435I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.950581+0.000527I$ $a=\ \ 0.174135-0.403894I$ $b=-0.251243-0.903353I$	$-1.61934-0.33597I$	0
$u=-0.950581-0.000527I$ $a=\ \ 0.174135+0.403894I$ $b=-0.251243+0.903353I$	$-1.61934+0.33597I$	0
$u=-0.264647+1.026570I$ $a=-0.547724+0.190022I$ $b=\ \ 0.072210+0.674929I$	$-3.04736-1.94290I$	0
$u=-0.264647-1.026570I$ $a=-0.547724-0.190022I$ $b=\ \ 0.072210-0.674929I$	$-3.04736+1.94290I$	0
$u=-0.770530+0.533723I$ $a=-1.34205-0.86042I$ $b=-0.491734-0.873041I$	$3.01974+2.02401I$	0
$u=-0.770530-0.533723I$ $a=-1.34205+0.86042I$ $b=-0.491734+0.873041I$	$3.01974-2.02401I$	0
$u=\ \ 0.916425+0.542126I$ $a=\ \ 0.543187-1.265160I$ $b=\ \ 1.04849-2.00825I$	$1.51696-5.57365I$	0
$u=\ \ 0.916425-0.542126I$ $a=\ \ 0.543187+1.265160I$ $b=\ \ 1.04849+2.00825I$	$1.51696+5.57365I$	0
$u=-0.412108+0.839424I$ $a=-1.25948-0.65985I$ $b=-0.650987+0.011237I$	$-1.33451-3.90121I$	0
$u=-0.412108-0.839424I$ $a=-1.25948+0.65985I$ $b=-0.650987-0.011237I$	$-1.33451+3.90121I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.421431 + 0.994250I$ $a = -0.613154 + 0.932683I$ $b = 0.151544 + 0.326452I$	$5.67260 + 2.25032I$	0
$u = 0.421431 - 0.994250I$ $a = -0.613154 - 0.932683I$ $b = 0.151544 - 0.326452I$	$5.67260 - 2.25032I$	0
$u = 1.059570 + 0.262581I$ $a = 0.712742 + 0.963156I$ $b = 0.482469 + 1.082270I$	$-6.01723 + 1.75193I$	0
$u = 1.059570 - 0.262581I$ $a = 0.712742 - 0.963156I$ $b = 0.482469 - 1.082270I$	$-6.01723 - 1.75193I$	0
$u = -0.178317 + 0.889819I$ $a = -0.102170 + 1.311780I$ $b = 0.091301 + 0.336535I$	$1.40611 + 4.98571I$	0
$u = -0.178317 - 0.889819I$ $a = -0.102170 - 1.311780I$ $b = 0.091301 - 0.336535I$	$1.40611 - 4.98571I$	0
$u = 1.026740 + 0.452876I$ $a = -0.206733 - 0.619596I$ $b = 0.322496 - 1.288060I$	$-0.43516 - 3.99400I$	0
$u = 1.026740 - 0.452876I$ $a = -0.206733 + 0.619596I$ $b = 0.322496 + 1.288060I$	$-0.43516 + 3.99400I$	0
$u = -0.147482 + 0.860639I$ $a = -0.078885 - 0.997481I$ $b = 2.01220 + 1.74431I$	$-2.76031 + 0.24285I$	0
$u = -0.147482 - 0.860639I$ $a = -0.078885 + 0.997481I$ $b = 2.01220 - 1.74431I$	$-2.76031 - 0.24285I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.663375 + 0.552902I$ $a = 1.62689 - 0.44683I$ $b = 0.440564 + 0.189870I$	$2.27246 + 1.15394I$	0
$u = 0.663375 - 0.552902I$ $a = 1.62689 + 0.44683I$ $b = 0.440564 - 0.189870I$	$2.27246 - 1.15394I$	0
$u = -1.049270 + 0.438478I$ $a = -1.48445 - 0.07161I$ $b = -0.283300 + 0.241625I$	$-2.25009 + 1.62166I$	0
$u = -1.049270 - 0.438478I$ $a = -1.48445 + 0.07161I$ $b = -0.283300 - 0.241625I$	$-2.25009 - 1.62166I$	0
$u = 0.372291 + 1.075220I$ $a = 0.893472 + 0.533881I$ $b = -0.100674 + 0.838595I$	$-6.75012 + 5.58489I$	0
$u = 0.372291 - 1.075220I$ $a = 0.893472 - 0.533881I$ $b = -0.100674 - 0.838595I$	$-6.75012 - 5.58489I$	0
$u = 0.585401 + 0.984534I$ $a = -0.589549 + 0.283157I$ $b = 0.310277 + 0.798211I$	$-5.62759 + 0.96807I$	0
$u = 0.585401 - 0.984534I$ $a = -0.589549 - 0.283157I$ $b = 0.310277 - 0.798211I$	$-5.62759 - 0.96807I$	0
$u = -1.092830 + 0.345580I$ $a = -0.898356 + 0.425627I$ $b = -0.256094 + 1.082330I$	$-3.59891 + 1.83803I$	0
$u = -1.092830 - 0.345580I$ $a = -0.898356 - 0.425627I$ $b = -0.256094 - 1.082330I$	$-3.59891 - 1.83803I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.077910 + 0.497831I$ $a = 1.29175 - 0.59886I$ $b = 0.269810 - 0.726531I$	$-1.75667 - 5.14933I$	0
$u = 1.077910 - 0.497831I$ $a = 1.29175 + 0.59886I$ $b = 0.269810 + 0.726531I$	$-1.75667 + 5.14933I$	0
$u = -1.071000 + 0.514282I$ $a = 0.588970 - 0.871405I$ $b = 0.29900 - 1.80560I$	$-3.93453 + 7.72346I$	0
$u = -1.071000 - 0.514282I$ $a = 0.588970 + 0.871405I$ $b = 0.29900 + 1.80560I$	$-3.93453 - 7.72346I$	0
$u = 1.152530 + 0.421776I$ $a = -0.792525 + 0.804291I$ $b = -1.29757 + 1.95478I$	$-2.42982 - 8.85973I$	0
$u = 1.152530 - 0.421776I$ $a = -0.792525 - 0.804291I$ $b = -1.29757 - 1.95478I$	$-2.42982 + 8.85973I$	0
$u = 1.179560 + 0.366055I$ $a = 0.424815 - 0.004211I$ $b = 0.93785 + 1.68595I$	$-6.91302 - 4.04376I$	0
$u = 1.179560 - 0.366055I$ $a = 0.424815 + 0.004211I$ $b = 0.93785 - 1.68595I$	$-6.91302 + 4.04376I$	0
$u = -0.760448 + 0.076801I$ $a = -0.979441 - 0.447379I$ $b = -2.82256 + 0.44048I$	$-1.24671 + 2.00627I$	$-2.16610 - 1.88869I$
$u = -0.760448 - 0.076801I$ $a = -0.979441 + 0.447379I$ $b = -2.82256 - 0.44048I$	$-1.24671 - 2.00627I$	$-2.16610 + 1.88869I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.352613 + 0.677464I$ $a = 0.98942 - 1.25670I$ $b = 0.48534 - 1.56031I$	$0.082157 + 0.857061I$	$4.36317 + 3.16404I$
$u = 0.352613 - 0.677464I$ $a = 0.98942 + 1.25670I$ $b = 0.48534 + 1.56031I$	$0.082157 - 0.857061I$	$4.36317 - 3.16404I$
$u = 1.117590 + 0.540514I$ $a = 0.869855 - 0.865186I$ $b = 0.48115 - 1.63610I$	$-2.18494 - 5.60549I$	0
$u = 1.117590 - 0.540514I$ $a = 0.869855 + 0.865186I$ $b = 0.48115 + 1.63610I$	$-2.18494 + 5.60549I$	0
$u = 1.243700 + 0.167299I$ $a = -0.804444 - 0.252706I$ $b = -1.132900 - 0.688108I$	$-3.48666 + 5.58470I$	0
$u = 1.243700 - 0.167299I$ $a = -0.804444 + 0.252706I$ $b = -1.132900 + 0.688108I$	$-3.48666 - 5.58470I$	0
$u = -1.025570 + 0.733588I$ $a = 0.377118 + 0.557696I$ $b = -0.047638 + 1.359340I$	$-2.30731 + 2.91239I$	0
$u = -1.025570 - 0.733588I$ $a = 0.377118 - 0.557696I$ $b = -0.047638 - 1.359340I$	$-2.30731 - 2.91239I$	0
$u = -0.538375 + 0.490828I$ $a = 0.305851 - 0.417522I$ $b = -0.655309 + 0.569308I$	$-1.71164 + 2.03068I$	$0.92011 - 3.46679I$
$u = -0.538375 - 0.490828I$ $a = 0.305851 + 0.417522I$ $b = -0.655309 - 0.569308I$	$-1.71164 - 2.03068I$	$0.92011 + 3.46679I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.174490 + 0.500259I$ $a = 0.691504 + 0.602228I$ $b = 0.98748 + 1.40959I$	$1.01629 + 2.81685I$	0
$u = -1.174490 - 0.500259I$ $a = 0.691504 - 0.602228I$ $b = 0.98748 - 1.40959I$	$1.01629 - 2.81685I$	0
$u = -0.628169 + 0.354556I$ $a = -0.91755 - 1.42631I$ $b = -2.09261 - 2.20942I$	$-0.69818 + 1.82820I$	$-0.75026 - 6.85666I$
$u = -0.628169 - 0.354556I$ $a = -0.91755 + 1.42631I$ $b = -2.09261 + 2.20942I$	$-0.69818 - 1.82820I$	$-0.75026 + 6.85666I$
$u = -0.393726 + 0.603689I$ $a = -1.172020 + 0.730642I$ $b = -0.069889 + 0.668919I$	$-1.96447 - 3.28364I$	$2.37619 + 3.75916I$
$u = -0.393726 - 0.603689I$ $a = -1.172020 - 0.730642I$ $b = -0.069889 - 0.668919I$	$-1.96447 + 3.28364I$	$2.37619 - 3.75916I$
$u = -1.136990 + 0.588943I$ $a = -0.473097 - 1.163410I$ $b = -0.77465 - 1.90044I$	$-3.58758 + 9.21705I$	0
$u = -1.136990 - 0.588943I$ $a = -0.473097 + 1.163410I$ $b = -0.77465 + 1.90044I$	$-3.58758 - 9.21705I$	0
$u = -1.188380 + 0.493141I$ $a = -0.665288 - 0.342230I$ $b = -1.18550 - 5.40864I$	$-5.96934 + 4.58071I$	0
$u = -1.188380 - 0.493141I$ $a = -0.665288 + 0.342230I$ $b = -1.18550 + 5.40864I$	$-5.96934 - 4.58071I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.428007 + 0.568291I$ $a = 1.14591 - 1.49846I$ $b = 1.44499 - 2.08811I$	$0.221092 + 0.868785I$	$3.26350 + 0.49101I$
$u = 0.428007 - 0.568291I$ $a = 1.14591 + 1.49846I$ $b = 1.44499 + 2.08811I$	$0.221092 - 0.868785I$	$3.26350 - 0.49101I$
$u = 0.532178 + 1.192600I$ $a = -0.840676 + 0.705816I$ $b = 0.384689 + 0.273579I$	$-3.41637 + 11.84470I$	0
$u = 0.532178 - 1.192600I$ $a = -0.840676 - 0.705816I$ $b = 0.384689 - 0.273579I$	$-3.41637 - 11.84470I$	0
$u = -1.253190 + 0.373770I$ $a = 0.622945 - 0.059145I$ $b = 0.673230 - 0.199297I$	$-2.38708 - 0.06669I$	0
$u = -1.253190 - 0.373770I$ $a = 0.622945 + 0.059145I$ $b = 0.673230 + 0.199297I$	$-2.38708 + 0.06669I$	0
$u = 0.280215 + 1.284960I$ $a = 0.169447 + 0.698452I$ $b = -0.149528 + 0.537782I$	$-5.00665 - 2.66992I$	0
$u = 0.280215 - 1.284960I$ $a = 0.169447 - 0.698452I$ $b = -0.149528 - 0.537782I$	$-5.00665 + 2.66992I$	0
$u = -1.164980 + 0.632243I$ $a = 0.656464 + 0.897532I$ $b = 1.06785 + 2.19969I$	$-0.2735 + 14.1974I$	0
$u = -1.164980 - 0.632243I$ $a = 0.656464 - 0.897532I$ $b = 1.06785 - 2.19969I$	$-0.2735 - 14.1974I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.585287+1.198570I$ $a=0.668125+0.647488I$ $b=-0.242657+0.388280I$	$0.12401-5.89051I$	0
$u=-0.585287-1.198570I$ $a=0.668125-0.647488I$ $b=-0.242657-0.388280I$	$0.12401+5.89051I$	0
$u=1.170540+0.666864I$ $a=-0.638274+0.732254I$ $b=-0.91202+1.72998I$	$3.36185-8.25297I$	0
$u=1.170540-0.666864I$ $a=-0.638274-0.732254I$ $b=-0.91202-1.72998I$	$3.36185+8.25297I$	0
$u=0.640997+0.067594I$ $a=-2.23021-0.24695I$ $b=0.221114-0.075686I$	$0.26523+6.30460I$	$-7.61159-2.58041I$
$u=0.640997-0.067594I$ $a=-2.23021+0.24695I$ $b=0.221114+0.075686I$	$0.26523-6.30460I$	$-7.61159+2.58041I$
$u=-0.270401+1.329930I$ $a=0.171409+0.708922I$ $b=-0.022723+0.428452I$	$4.65181+2.75031I$	0
$u=-0.270401-1.329930I$ $a=0.171409-0.708922I$ $b=-0.022723-0.428452I$	$4.65181-2.75031I$	0
$u=0.482922+0.420367I$ $a=0.970792-0.026578I$ $b=0.261684+0.632534I$	$1.156200+0.168786I$	$8.35325-0.17221I$
$u=0.482922-0.420367I$ $a=0.970792+0.026578I$ $b=0.261684-0.632534I$	$1.156200-0.168786I$	$8.35325+0.17221I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.237220+0.608323I$ $a=\ \ 0.276300-0.630774I$ $b=-0.250998-1.370000I$	$-6.08574+7.79317I$	0
$u=-1.237220-0.608323I$ $a=\ \ 0.276300+0.630774I$ $b=-0.250998+1.370000I$	$-6.08574-7.79317I$	0
$u=-1.379630+0.084770I$ $a=\ \ 0.402989+0.769939I$ $b=-0.02163+1.80379I$	$-13.43700-1.72652I$	0
$u=-1.379630-0.084770I$ $a=\ \ 0.402989-0.769939I$ $b=-0.02163-1.80379I$	$-13.43700+1.72652I$	0
$u=-0.609244$ $a=\ \ 2.37723$ $b=-0.188207$	4.44175	−5.34930
$u=\ \ 1.235000+0.654046I$ $a=-0.597436-0.798836I$ $b=-0.23923-1.68266I$	$-9.5150-11.7864I$	0
$u=\ \ 1.235000-0.654046I$ $a=-0.597436+0.798836I$ $b=-0.23923+1.68266I$	$-9.5150+11.7864I$	0
$u=\ \ 1.164930+0.796752I$ $a=-0.423703+0.632145I$ $b=-0.12702+1.53085I$	$-7.26453-7.54102I$	0
$u=\ \ 1.164930-0.796752I$ $a=-0.423703-0.632145I$ $b=-0.12702-1.53085I$	$-7.26453+7.54102I$	0
$u=\ \ 1.42862+0.18571I$ $a=-0.404911+0.514718I$ $b=-0.224979+1.250580I$	$-8.98195-2.48583I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.42862 - 0.18571I$ $a = -0.404911 - 0.514718I$ $b = -0.224979 - 1.250580I$	$-8.98195 + 2.48583I$	0
$u = 1.33882 + 0.58562I$ $a = -0.417414 - 0.152829I$ $b = -0.077466 - 0.395061I$	$-8.77346 - 3.93861I$	0
$u = 1.33882 - 0.58562I$ $a = -0.417414 + 0.152829I$ $b = -0.077466 + 0.395061I$	$-8.77346 + 3.93861I$	0
$u = 1.24766 + 0.76806I$ $a = -0.556399 + 0.887270I$ $b = -0.87508 + 2.22966I$	$-5.7644 - 18.8401I$	0
$u = 1.24766 - 0.76806I$ $a = -0.556399 - 0.887270I$ $b = -0.87508 - 2.22966I$	$-5.7644 + 18.8401I$	0
$u = -1.23715 + 0.78781I$ $a = 0.561204 + 0.768188I$ $b = 0.75706 + 1.84911I$	$-2.05065 + 12.98760I$	0
$u = -1.23715 - 0.78781I$ $a = 0.561204 - 0.768188I$ $b = 0.75706 - 1.84911I$	$-2.05065 - 12.98760I$	0
$u = -1.51232 + 0.11748I$ $a = 0.647377 + 0.511295I$ $b = 0.83008 + 1.38338I$	$-12.0123 + 7.8686I$	0
$u = -1.51232 - 0.11748I$ $a = 0.647377 - 0.511295I$ $b = 0.83008 - 1.38338I$	$-12.0123 - 7.8686I$	0
$u = -0.459816$ $a = -0.203477$ $b = -0.818968$	-1.22815	-10.8100

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	0.438051		
$a=$	1.77546	1.05923	11.4410
$b=$	0.974038		
$u=$	$0.125896+0.299594I$		
$a=$	$0.71491-3.49069I$	$0.958085-1.026070I$	$4.35276-0.71517I$
$b=$	$0.271476+0.589526I$		
$u=$	$0.125896-0.299594I$		
$a=$	$0.71491+3.49069I$	$0.958085+1.026070I$	$4.35276+0.71517I$
$b=$	$0.271476-0.589526I$		

II. $\boldsymbol{I_2^u = \langle -22u^2 + 17b + 15u - 40,\ -u^2 + a + u - 2,\ u^3 - u^2 + 2u - 1 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^2 - u + 2 \\ \frac{22}{17}u^2 - \frac{15}{17}u + \frac{40}{17} \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 - u + 2 \\ \frac{22}{17}u^2 + \frac{2}{17}u + \frac{40}{17} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u \\ u^2 - u + 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -u^2 + 2u - 1 \\ u^2 - 2u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{14}{17}u^2 - \frac{8}{17}u + \frac{27}{17} \\ \frac{19}{17}u^2 - \frac{6}{17}u + \frac{33}{17} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u \\ u^2 - u + 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{4979}{289}u^2 + \frac{13237}{289}u - \frac{8501}{289}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$u^3 + u^2 - 1$
c_3	$u^3 - u^2 + 2u - 1$
c_4	$u^3 - u^2 + 1$
c_5	u^3
c_6	$u^3 - 3u^2 + 2u + 1$
c_7	$u^3 + u^2 + 2u + 1$
c_8	$(u+1)^3$
c_9	$17(17u^3 + 23u^2 + 8u + 1)$
c_{10}	$17(17u^3 - 10u^2 - u + 1)$
c_{11}	$(u-1)^3$
c_{12}	$u^3 + 3u^2 + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$y^3 - y^2 + 2y - 1$
c_3, c_7	$y^3 + 3y^2 + 2y - 1$
c_5	y^3
c_6, c_{12}	$y^3 - 5y^2 + 10y - 1$
c_8, c_{11}	$(y-1)^3$
c_9	$289(289y^3 - 257y^2 + 18y - 1)$
c_{10}	$289(289y^3 - 134y^2 + 21y - 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.215080 + 1.307140I$		
$a =$	$0.122561 - 0.744862I$	$4.66906 - 2.82812I$	$9.0758 + 50.1835I$
$b =$	$0.011877 - 0.425704I$		
$u =$	$0.215080 - 1.307140I$		
$a =$	$0.122561 + 0.744862I$	$4.66906 + 2.82812I$	$9.0758 - 50.1835I$
$b =$	$0.011877 + 0.425704I$		
$u =$	0.569840		
$a =$	1.75488	0.531480	-8.90930
$b =$	2.27036		

III. $\boldsymbol{I_1^v =}$
$\boldsymbol{\langle a,\ 72v^7-466v^6+\cdots+887b+2666,\ v^8+3v^7-7v^6-28v^5-13v^4+8v^3-2v+1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -0.0811725v^7 + 0.525366v^6 + \cdots + 5.69222v - 3.00564 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v \\ 0.590755v^7 + 2.06539v^6 + \cdots + 5.07328v - 2.23675 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.671928v^7 - 1.54002v^6 + \cdots + 1.61894v - 0.768884 \\ -1.56483v^7 - 3.76099v^6 + \cdots + 2.23337v - 1.83089 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.311161v^7 + 0.652762v^6 + \cdots - 0.320180v + 0.188275 \\ 1.06201v^7 + 2.29312v^6 + \cdots - 4.22322v + 0.490417 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.768884v^7 - 1.63472v^6 + \cdots + 3.16798v - 1.08117 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.671928v^7 + 1.54002v^6 + \cdots - 1.61894v + 0.768884 \\ -0.0811725v^7 + 0.525366v^6 + \cdots + 5.69222v - 3.00564 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.768884v^7 + 1.63472v^6 + \cdots - 3.16798v + 1.08117 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.768884v^7 - 1.63472v^6 + \cdots + 3.16798v - 0.0811725 \\ -1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= \frac{430}{887}v^7 - \frac{2241}{887}v^6 - \frac{11719}{887}v^5 + \frac{16745}{887}v^4 + \frac{76150}{887}v^3 + \frac{12082}{887}v^2 - \frac{15740}{887}v + \frac{7594}{887}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^8$
c_3, c_7	y^8
c_5, c_9	$y^8 - 3y^7 + 7y^6 - 10y^5 + 11y^4 - 10y^3 + 6y^2 - 4y + 1$
c_6, c_{12}	$y^8 + 5y^7 + 11y^6 + 6y^5 - 17y^4 - 34y^3 - 22y^2 - 4y + 1$
c_8, c_{10}, c_{11}	$y^8 - 7y^7 + 19y^6 - 22y^5 + 3y^4 + 14y^3 - 6y^2 - 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.809031 + 0.055172I$ $a = 0$ $b = 0.195703 - 0.910609I$	$-3.80435 - 2.57849I$	$-1.56478 + 3.68514I$
$v = -0.809031 - 0.055172I$ $a = 0$ $b = 0.195703 + 0.910609I$	$-3.80435 + 2.57849I$	$-1.56478 - 3.68514I$
$v = 0.217262 + 0.361920I$ $a = 0$ $b = -0.89335 + 2.72444I$	$-0.604279 - 1.131230I$	$-3.30729 - 4.28492I$
$v = 0.217262 - 0.361920I$ $a = 0$ $b = -0.89335 - 2.72444I$	$-0.604279 + 1.131230I$	$-3.30729 + 4.28492I$
$v = 0.412194$ $a = 0$ $b = -1.12481$	-0.799899	9.95010
$v = -2.59435 + 0.51399I$ $a = 0$ $b = -0.471534 - 0.216354I$	$0.73474 + 6.44354I$	$8.02705 - 7.90662I$
$v = -2.59435 - 0.51399I$ $a = 0$ $b = -0.471534 + 0.216354I$	$0.73474 - 6.44354I$	$8.02705 + 7.90662I$
$v = 2.96004$ $a = 0$ $b = 0.463171$	4.85780	14.7400

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_2	$((u-1)^8)(u^3+u^2-1)(u^{113}-10u^{112}+\cdots+u-1)$
c_3	$u^8(u^3-u^2+2u-1)(u^{113}-2u^{112}+\cdots+896u-256)$
c_4	$((u+1)^8)(u^3-u^2+1)(u^{113}-10u^{112}+\cdots+u-1)$
c_5	$u^3(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot\,(u^{113}+2u^{112}+\cdots-41820u-2312)$
c_6	$(u^3-3u^2+2u+1)(u^8+3u^7+\cdots+4u+1)$ $\cdot\,(u^{113}+3u^{112}+\cdots+3u+1)$
c_7	$u^8(u^3+u^2+2u+1)(u^{113}-2u^{112}+\cdots+896u-256)$
c_8	$(u+1)^3(u^8-u^7-3u^6+2u^5+3u^4-2u-1)$ $\cdot\,(u^{113}+5u^{112}+\cdots-1158u+289)$
c_9	$289(17u^3+23u^2+8u+1)(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot\,(17u^{113}+219u^{112}+\cdots+16199u+2539)$
c_{10}	$289(17u^3-10u^2-u+1)(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot\,(17u^{113}+212u^{112}+\cdots-115224u-34421)$
c_{11}	$(u-1)^3(u^8+u^7-3u^6-2u^5+3u^4+2u-1)$ $\cdot\,(u^{113}+5u^{112}+\cdots-1158u+289)$
c_{12}	$(u^3+3u^2+2u-1)(u^8-3u^7+\cdots-4u+1)$ $\cdot\,(u^{113}+3u^{112}+\cdots+3u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$((y-1)^8)(y^3-y^2+2y-1)(y^{113}-100y^{112}+\cdots-13y-1)$
c_3, c_7	$y^8(y^3+3y^2+2y-1)(y^{113}-48y^{112}+\cdots+1425408y-65536)$
c_5	$y^3(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{113}+18y^{112}+\cdots+117380240y-5345344)$
c_6, c_{12}	$(y^3-5y^2+10y-1)$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{113}+61y^{112}+\cdots+19y-1)$
c_8, c_{11}	$(y-1)^3(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{113}-69y^{112}+\cdots+10227136y-83521)$
c_9	$83521(289y^3-257y^2+18y-1)$ $\cdot(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(289y^{113}+6473y^{112}+\cdots-380827737y-6446521)$
c_{10}	$83521(289y^3-134y^2+21y-1)$ $\cdot(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(289y^{113}-1016y^{112}+\cdots-6580973566y-1184805241)$