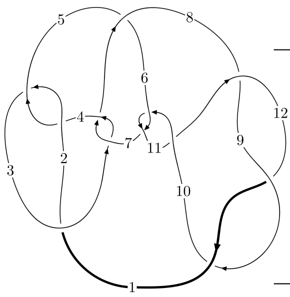
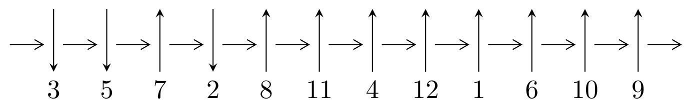
$12a_{0041}$ ($K12a_{0041}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.44805 \times 10^{35} u^{105} + 9.77658 \times 10^{35} u^{104} + \cdots + 1.67026 \times 10^{34} b + 1.04667 \times 10^{35},$$
$$- 3.36641 \times 10^{36} u^{105} + 2.29468 \times 10^{37} u^{104} + \cdots + 1.67026 \times 10^{34} a + 2.84093 \times 10^{36},$$
$$u^{106} - 8u^{105} + \cdots - 8u + 1 \rangle$$
$$I_2^u = \langle b,\ u^7 - 2u^6 - 2u^5 + 4u^4 + 2u^3 - u^2 + a - u - 3,\ u^8 - u^7 - 3u^6 + 2u^5 + 3u^4 - 2u - 1 \rangle$$
$$I_3^u = \langle -a^5 + a^4 - 2a^2 + b + a + 1,\ a^6 - a^5 + 2a^3 - a^2 - a + 1,\ u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 120 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. $\boldsymbol{I^u_1 = \langle -1.45 \times 10^{35} u^{105} + 9.78 \times 10^{35} u^{104} + \cdots + 1.67 \times 10^{34} b + 1.05 \times 10^{35},\ -3.37 \times 10^{36} u^{105} + 2.29 \times 10^{37} u^{104} + \cdots + 1.67 \times 10^{34} a + 2.84 \times 10^{36},\ u^{106} - 8u^{105} + \cdots - 8u + 1 \rangle}$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 201.551u^{105} - 1373.85u^{104} + \cdots + 1189.54u - 170.089 \\ 8.66963u^{105} - 58.5334u^{104} + \cdots + 49.7451u - 6.26650 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -89.0641u^{105} + 593.235u^{104} + \cdots - 494.775u + 66.5949 \\ 144.038u^{105} - 1011.28u^{104} + \cdots + 967.142u - 136.266 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 173.819u^{105} - 1206.87u^{104} + \cdots + 1110.50u - 161.594 \\ 68.8034u^{105} - 417.555u^{104} + \cdots + 217.759u - 26.4940 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^5 + 2u^3 - u \\ u^7 - 3u^5 + 2u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 31.9491u^{105} - 240.754u^{104} + \cdots + 266.507u - 40.0703 \\ 48.9374u^{105} - 391.734u^{104} + \cdots + 508.341u - 73.9905 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -16.9883u^{105} + 150.980u^{104} + \cdots - 241.834u + 33.9202 \\ 48.9374u^{105} - 391.734u^{104} + \cdots + 508.341u - 73.9905 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 193.608u^{105} - 1303.08u^{104} + \cdots + 1072.35u - 154.685 \\ 51.6786u^{105} - 376.900u^{104} + \cdots + 402.827u - 56.7005 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 187.107u^{105} - 1299.22u^{104} + \cdots + 1186.54u - 169.352$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{106} + 50u^{105} + \cdots + 115u + 1$
c_2, c_4	$u^{106} - 10u^{105} + \cdots - 11u + 1$
c_3, c_7	$u^{106} - 2u^{105} + \cdots - 2176u + 256$
c_5	$u^{106} + 3u^{105} + \cdots + 3191795u + 338425$
c_6, c_{10}	$u^{106} + 2u^{105} + \cdots + 128u + 64$
c_8, c_9, c_{12}	$u^{106} + 8u^{105} + \cdots + 8u + 1$
c_{11}	$u^{106} - 42u^{105} + \cdots - 40960u + 4096$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{106} + 22y^{105} + \cdots - 9623y + 1$
c_2, c_4	$y^{106} - 50y^{105} + \cdots - 115y + 1$
c_3, c_7	$y^{106} - 54y^{105} + \cdots - 2015232y + 65536$
c_5	$y^{106} - 25y^{105} + \cdots - 3787599470175y + 114531480625$
c_6, c_{10}	$y^{106} - 42y^{105} + \cdots - 40960y + 4096$
c_8, c_9, c_{12}	$y^{106} - 92y^{105} + \cdots - 20y + 1$
c_{11}	$y^{106} + 34y^{105} + \cdots - 511705088y + 16777216$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.975597 + 0.332760I$ $a = 1.66268 - 0.43076I$ $b = -0.719953 - 0.291088I$	$-0.664937 + 0.060812I$	0
$u = -0.975597 - 0.332760I$ $a = 1.66268 + 0.43076I$ $b = -0.719953 + 0.291088I$	$-0.664937 - 0.060812I$	0
$u = -0.787729 + 0.530832I$ $a = -1.025870 - 0.880599I$ $b = 1.235030 - 0.231770I$	$5.70804 - 0.97860I$	0
$u = -0.787729 - 0.530832I$ $a = -1.025870 + 0.880599I$ $b = 1.235030 + 0.231770I$	$5.70804 + 0.97860I$	0
$u = -0.971534 + 0.424156I$ $a = 0.554238 + 0.741710I$ $b = -0.381199 + 0.952283I$	$0.22721 + 2.28278I$	0
$u = -0.971534 - 0.424156I$ $a = 0.554238 - 0.741710I$ $b = -0.381199 - 0.952283I$	$0.22721 - 2.28278I$	0
$u = -0.719478 + 0.572631I$ $a = 0.97434 + 1.13046I$ $b = -1.226880 + 0.499611I$	$4.23697 - 6.46219I$	0
$u = -0.719478 - 0.572631I$ $a = 0.97434 - 1.13046I$ $b = -1.226880 - 0.499611I$	$4.23697 + 6.46219I$	0
$u = -0.965180 + 0.494632I$ $a = -0.734599 - 0.110481I$ $b = 1.206320 + 0.413402I$	$4.90799 + 2.58638I$	0
$u = -0.965180 - 0.494632I$ $a = -0.734599 + 0.110481I$ $b = 1.206320 - 0.413402I$	$4.90799 - 2.58638I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.220211 + 0.865620I$ $a = \quad 0.41270 + 1.60488I$ $b = -1.216810 + 0.674505I$	$0.38915 - 12.96150I$	0
$u = -0.220211 - 0.865620I$ $a = \quad 0.41270 - 1.60488I$ $b = -1.216810 - 0.674505I$	$0.38915 + 12.96150I$	0
$u = -0.239845 + 0.842650I$ $a = -0.49567 - 1.38558I$ $b = \quad 1.227260 - 0.486133I$	$2.68174 - 7.33219I$	0
$u = -0.239845 - 0.842650I$ $a = -0.49567 + 1.38558I$ $b = \quad 1.227260 + 0.486133I$	$2.68174 + 7.33219I$	0
$u = -1.014630 + 0.504575I$ $a = \quad 0.488720 - 0.061862I$ $b = -1.206960 - 0.630482I$	$2.81598 + 8.10504I$	0
$u = -1.014630 - 0.504575I$ $a = \quad 0.488720 + 0.061862I$ $b = -1.206960 + 0.630482I$	$2.81598 - 8.10504I$	0
$u = -1.125830 + 0.181268I$ $a = -0.899054 - 0.314000I$ $b = \quad 0.196548 - 0.484159I$	$1.40723 - 0.85274I$	0
$u = -1.125830 - 0.181268I$ $a = -0.899054 + 0.314000I$ $b = \quad 0.196548 + 0.484159I$	$1.40723 + 0.85274I$	0
$u = -0.755747 + 0.391839I$ $a = -0.452972 - 0.622080I$ $b = -0.159790 - 0.860727I$	$0.91081 - 1.47380I$	0
$u = -0.755747 - 0.391839I$ $a = -0.452972 + 0.622080I$ $b = -0.159790 + 0.860727I$	$0.91081 + 1.47380I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.217080+0.816392I$ $a=-0.723684-0.838932I$ $b=-0.435106-1.030610I$	$-2.10087-6.75943I$	0
$u=-0.217080-0.816392I$ $a=-0.723684+0.838932I$ $b=-0.435106+1.030610I$	$-2.10087+6.75943I$	0
$u=-0.332885+0.758781I$ $a=-0.328189-0.525794I$ $b=\ \ 1.268420+0.119140I$	$4.32160-3.56949I$	0
$u=-0.332885-0.758781I$ $a=-0.328189+0.525794I$ $b=\ \ 1.268420-0.119140I$	$4.32160+3.56949I$	0
$u=-0.100955+0.814954I$ $a=-0.779621-0.254715I$ $b=-0.776258-0.307494I$	$-3.44339-1.35942I$	0
$u=-0.100955-0.814954I$ $a=-0.779621+0.254715I$ $b=-0.776258+0.307494I$	$-3.44339+1.35942I$	0
$u=-0.396637+0.712421I$ $a=\ \ 0.088469+0.208203I$ $b=-1.226060-0.398992I$	$3.29218+1.91305I$	0
$u=-0.396637-0.712421I$ $a=\ \ 0.088469-0.208203I$ $b=-1.226060+0.398992I$	$3.29218-1.91305I$	0
$u=-0.204708+0.788783I$ $a=\ \ 1.15366+1.32172I$ $b=-0.897435+0.329928I$	$-3.03362-4.24411I$	0
$u=-0.204708-0.788783I$ $a=\ \ 1.15366-1.32172I$ $b=-0.897435-0.329928I$	$-3.03362+4.24411I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.779771$ $a=3.27362$ $b=-0.476085$	-0.441751	0
$u=-1.159330+0.387775I$ $a=0.269576+0.833513I$ $b=-0.867224+0.343872I$	$-0.21010-2.97299I$	0
$u=-1.159330-0.387775I$ $a=0.269576-0.833513I$ $b=-0.867224-0.343872I$	$-0.21010+2.97299I$	0
$u=-0.226322+0.738094I$ $a=0.435071+0.984632I$ $b=0.071439+0.904117I$	$-0.86368-2.44093I$	0
$u=-0.226322-0.738094I$ $a=0.435071-0.984632I$ $b=0.071439-0.904117I$	$-0.86368+2.44093I$	0
$u=1.216950+0.180245I$ $a=-0.520675-0.270816I$ $b=1.071960-0.662084I$	$2.00198-4.54056I$	0
$u=1.216950-0.180245I$ $a=-0.520675+0.270816I$ $b=1.071960+0.662084I$	$2.00198+4.54056I$	0
$u=-0.014428+0.766161I$ $a=0.931288-0.294098I$ $b=0.836190-0.399287I$	$-3.81217-4.28264I$	0
$u=-0.014428-0.766161I$ $a=0.931288+0.294098I$ $b=0.836190+0.399287I$	$-3.81217+4.28264I$	0
$u=1.274170+0.165295I$ $a=0.704589+0.152345I$ $b=-0.963662+0.557506I$	$4.57161+0.34047I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.274170 - 0.165295I$ $a = 0.704589 - 0.152345I$ $b = -0.963662 - 0.557506I$	$4.57161 - 0.34047I$	0
$u = -1.242310 + 0.335443I$ $a = 0.137119 - 0.855612I$ $b = 0.830272 + 0.297989I$	$-0.019244 + 0.300241I$	0
$u = -1.242310 - 0.335443I$ $a = 0.137119 + 0.855612I$ $b = 0.830272 - 0.297989I$	$-0.019244 - 0.300241I$	0
$u = -1.276760 + 0.174071I$ $a = -1.067710 + 0.598894I$ $b = 0.026372 - 0.883725I$	$1.95886 - 0.66619I$	0
$u = -1.276760 - 0.174071I$ $a = -1.067710 - 0.598894I$ $b = 0.026372 + 0.883725I$	$1.95886 + 0.66619I$	0
$u = 1.279740 + 0.211946I$ $a = -0.686542 + 0.674004I$ $b = 0.612218 + 0.892040I$	$0.504812 + 1.217070I$	0
$u = 1.279740 - 0.211946I$ $a = -0.686542 - 0.674004I$ $b = 0.612218 - 0.892040I$	$0.504812 - 1.217070I$	0
$u = -1.283730 + 0.231052I$ $a = -2.85407 - 1.47162I$ $b = 0.849304 - 0.283050I$	$0.00191 - 2.41011I$	0
$u = -1.283730 - 0.231052I$ $a = -2.85407 + 1.47162I$ $b = 0.849304 + 0.283050I$	$0.00191 + 2.41011I$	0
$u = 1.273370 + 0.311313I$ $a = -0.325712 + 0.595994I$ $b = 0.837898 + 0.492250I$	$0.18004 + 8.16321I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.273370 - 0.311313I$ $a = -0.325712 - 0.595994I$ $b = 0.837898 - 0.492250I$	$0.18004 - 8.16321I$	0
$u = 1.293690 + 0.236811I$ $a = -1.038820 - 0.511092I$ $b = 0.818163 - 0.593568I$	$0.11121 + 3.81256I$	0
$u = 1.293690 - 0.236811I$ $a = -1.038820 + 0.511092I$ $b = 0.818163 + 0.593568I$	$0.11121 - 3.81256I$	0
$u = 1.32993$ $a = 0.358643$ $b = -0.620045$	5.73362	0
$u = 0.137302 + 0.654097I$ $a = -0.53263 + 2.08724I$ $b = 1.162830 + 0.643339I$	$-1.12935 + 7.49600I$	$3.17543 - 5.19190I$
$u = 0.137302 - 0.654097I$ $a = -0.53263 - 2.08724I$ $b = 1.162830 - 0.643339I$	$-1.12935 - 7.49600I$	$3.17543 + 5.19190I$
$u = -1.312530 + 0.242030I$ $a = 0.769040 - 0.906565I$ $b = 0.399807 + 1.008790I$	$0.97390 - 4.81466I$	0
$u = -1.312530 - 0.242030I$ $a = 0.769040 + 0.906565I$ $b = 0.399807 - 1.008790I$	$0.97390 + 4.81466I$	0
$u = 1.328650 + 0.255478I$ $a = 0.673459 - 0.353384I$ $b = -0.450231 - 0.779449I$	$3.07140 + 5.25471I$	0
$u = 1.328650 - 0.255478I$ $a = 0.673459 + 0.353384I$ $b = -0.450231 + 0.779449I$	$3.07140 - 5.25471I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.347830+0.147998I$ $a=\ \ 2.48621+1.07165I$ $b=-1.264040-0.176666I$	$6.98793-1.47827I$	0
$u=-1.347830-0.147998I$ $a=\ \ 2.48621-1.07165I$ $b=-1.264040+0.176666I$	$6.98793+1.47827I$	0
$u=-0.110509+0.632808I$ $a=-0.386174+1.058420I$ $b=-0.269146+0.693777I$	$-1.45150-2.00619I$	$4.67683+5.18706I$
$u=-0.110509-0.632808I$ $a=-0.386174-1.058420I$ $b=-0.269146-0.693777I$	$-1.45150+2.00619I$	$4.67683-5.18706I$
$u=-1.354850+0.102000I$ $a=-2.35075-0.99307I$ $b=\ \ 1.238120+0.451792I$	$5.73583+4.04891I$	0
$u=-1.354850-0.102000I$ $a=-2.35075+0.99307I$ $b=\ \ 1.238120-0.451792I$	$5.73583-4.04891I$	0
$u=-1.344860+0.242958I$ $a=\ \ 2.49790+1.35461I$ $b=-1.229600+0.451056I$	$5.76007-5.25979I$	0
$u=-1.344860-0.242958I$ $a=\ \ 2.49790-1.35461I$ $b=-1.229600-0.451056I$	$5.76007+5.25979I$	0
$u=-0.009420+0.629939I$ $a=-0.99744+1.99085I$ $b=\ \ 0.779932+0.446948I$	$-3.95789-0.68802I$	$1.63493-0.69608I$
$u=-0.009420-0.629939I$ $a=-0.99744-1.99085I$ $b=\ \ 0.779932-0.446948I$	$-3.95789+0.68802I$	$1.63493+0.69608I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.348810 + 0.269511I$ $a = -2.40893 - 1.39590I$ $b = 1.220420 - 0.653105I$	$3.57407 - 10.87410I$	0
$u = -1.348810 - 0.269511I$ $a = -2.40893 + 1.39590I$ $b = 1.220420 + 0.653105I$	$3.57407 + 10.87410I$	0
$u = 1.332360 + 0.348313I$ $a = -0.133187 - 0.496674I$ $b = -0.707308 + 0.275029I$	$1.05711 + 5.54164I$	0
$u = 1.332360 - 0.348313I$ $a = -0.133187 + 0.496674I$ $b = -0.707308 - 0.275029I$	$1.05711 - 5.54164I$	0
$u = 0.047760 + 0.612339I$ $a = 1.12247 - 0.95080I$ $b = 0.476521 - 0.921710I$	$-3.31230 + 1.70372I$	$0.96529 - 1.53746I$
$u = 0.047760 - 0.612339I$ $a = 1.12247 + 0.95080I$ $b = 0.476521 + 0.921710I$	$-3.31230 - 1.70372I$	$0.96529 + 1.53746I$
$u = 0.123677 + 0.589119I$ $a = 0.59271 - 1.97345I$ $b = -1.124350 - 0.445004I$	$1.10125 + 2.18817I$	$6.14918 - 1.16320I$
$u = 0.123677 - 0.589119I$ $a = 0.59271 + 1.97345I$ $b = -1.124350 + 0.445004I$	$1.10125 - 2.18817I$	$6.14918 + 1.16320I$
$u = 1.38946 + 0.30667I$ $a = 0.725871 + 0.247775I$ $b = 0.100534 - 1.013670I$	$4.25836 + 6.24602I$	0
$u = 1.38946 - 0.30667I$ $a = 0.725871 - 0.247775I$ $b = 0.100534 + 1.013670I$	$4.25836 - 6.24602I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.38676 + 0.32750I$ $a = 2.22145 - 1.24393I$ $b = -0.979090 - 0.325843I$	$2.01147 + 8.28093I$	0
$u = 1.38676 - 0.32750I$ $a = 2.22145 + 1.24393I$ $b = -0.979090 + 0.325843I$	$2.01147 - 8.28093I$	0
$u = 1.39547 + 0.33838I$ $a = -0.661353 - 0.483166I$ $b = -0.445124 + 1.086220I$	$3.01346 + 10.92650I$	0
$u = 1.39547 - 0.33838I$ $a = -0.661353 + 0.483166I$ $b = -0.445124 - 1.086220I$	$3.01346 - 10.92650I$	0
$u = 1.44467$ $a = 2.73857$ $b = -0.965678$	6.54061	0
$u = 1.40543 + 0.36177I$ $a = 1.88322 - 1.36604I$ $b = -1.23603 - 0.69987I$	$5.5453 + 17.3785I$	0
$u = 1.40543 - 0.36177I$ $a = 1.88322 + 1.36604I$ $b = -1.23603 + 0.69987I$	$5.5453 - 17.3785I$	0
$u = 1.41017 + 0.34686I$ $a = -1.92773 + 1.29284I$ $b = 1.264080 + 0.521279I$	$7.92299 + 11.61900I$	0
$u = 1.41017 - 0.34686I$ $a = -1.92773 - 1.29284I$ $b = 1.264080 - 0.521279I$	$7.92299 - 11.61900I$	0
$u = 1.43097 + 0.25547I$ $a = 1.54652 - 0.79475I$ $b = -1.317580 + 0.343849I$	$9.11890 + 1.51931I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43097 - 0.25547I$ $a = 1.54652 + 0.79475I$ $b = -1.317580 - 0.343849I$	$9.11890 - 1.51931I$	0
$u = 1.42784 + 0.28880I$ $a = -1.75788 + 0.93117I$ $b = 1.354820 - 0.083923I$	$9.93949 + 7.33761I$	0
$u = 1.42784 - 0.28880I$ $a = -1.75788 - 0.93117I$ $b = 1.354820 + 0.083923I$	$9.93949 - 7.33761I$	0
$u = 1.45803 + 0.02469I$ $a = 0.144641 - 0.749887I$ $b = -0.202758 + 1.076270I$	$8.08502 + 2.33225I$	0
$u = 1.45803 - 0.02469I$ $a = 0.144641 + 0.749887I$ $b = -0.202758 - 1.076270I$	$8.08502 - 2.33225I$	0
$u = 1.49012 + 0.06818I$ $a = 2.23140 - 0.17523I$ $b = -1.30879 - 0.56563I$	$11.6664 + 8.2496I$	0
$u = 1.49012 - 0.06818I$ $a = 2.23140 + 0.17523I$ $b = -1.30879 + 0.56563I$	$11.6664 - 8.2496I$	0
$u = 1.49130 + 0.03892I$ $a = -2.34660 + 0.12553I$ $b = 1.343590 + 0.329120I$	$13.37820 + 2.34517I$	0
$u = 1.49130 - 0.03892I$ $a = -2.34660 - 0.12553I$ $b = 1.343590 - 0.329120I$	$13.37820 - 2.34517I$	0
$u = 0.328828 + 0.206242I$ $a = -1.19831 + 1.44333I$ $b = 1.113270 - 0.511888I$	$0.55693 - 5.26669I$	$2.17022 + 4.89770I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.328828 - 0.206242I$ $a = -1.19831 - 1.44333I$ $b = 1.113270 + 0.511888I$	$0.55693 + 5.26669I$	$2.17022 - 4.89770I$
$u = 0.216080 + 0.303403I$ $a = 0.86930 - 1.86344I$ $b = -1.080150 + 0.204268I$	$2.12093 - 0.33420I$	$5.91854 - 0.05388I$
$u = 0.216080 - 0.303403I$ $a = 0.86930 + 1.86344I$ $b = -1.080150 - 0.204268I$	$2.12093 + 0.33420I$	$5.91854 + 0.05388I$
$u = -0.363030$ $a = -0.676170$ $b = -0.314526$	0.730740	14.1320
$u = 0.1057060 + 0.0875681I$ $a = -4.78981 + 0.25440I$ $b = 0.338389 + 0.624293I$	$-1.73093 - 0.78651I$	$-2.83553 + 1.26176I$
$u = 0.1057060 - 0.0875681I$ $a = -4.78981 - 0.25440I$ $b = 0.338389 - 0.624293I$	$-1.73093 + 0.78651I$	$-2.83553 - 1.26176I$

II. $\boldsymbol{I_2^u =}$
$\boldsymbol{\langle b,\ u^7-2u^6-2u^5+4u^4+2u^3-u^2+a-u-3,\ u^8-u^7-3u^6+2u^5+3u^4-2u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^7-2u^6-7u^5+u^4+u^3+4u^2+8u+3$

(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	$u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1$
c_6	$u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1$
c_8, c_9	$u^8-u^7-3u^6+2u^5+3u^4-2u-1$
c_{10}	$u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1$
c_{11}	$u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1$
c_{12}	$u^8+u^7-3u^6-2u^5+3u^4+2u-1$

(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_{11}	$y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1$
c_6, c_{10}	$y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1$
c_8, c_9, c_{12}	$y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.180120 + 0.268597I$ $a = -0.281371 - 1.128550I$ $b = 0$	$-0.604279 - 1.131230I$	$5.26238 + 0.22273I$
$u = -1.180120 - 0.268597I$ $a = -0.281371 + 1.128550I$ $b = 0$	$-0.604279 + 1.131230I$	$5.26238 - 0.22273I$
$u = -0.108090 + 0.747508I$ $a = 0.208670 + 0.825203I$ $b = 0$	$-3.80435 - 2.57849I$	$2.12884 + 3.87967I$
$u = -0.108090 - 0.747508I$ $a = 0.208670 - 0.825203I$ $b = 0$	$-3.80435 + 2.57849I$	$2.12884 - 3.87967I$
$u = 1.37100$ $a = 0.829189$ $b = 0$	4.85780	7.72210
$u = 1.334530 + 0.318930I$ $a = 0.284386 - 0.605794I$ $b = 0$	$0.73474 + 6.44354I$	$7.14098 - 6.66742I$
$u = 1.334530 - 0.318930I$ $a = 0.284386 + 0.605794I$ $b = 0$	$0.73474 - 6.44354I$	$7.14098 + 6.66742I$
$u = -0.463640$ $a = 2.74744$ $b = 0$	-0.799899	0.213560

III. $\boldsymbol{I_3^u = \langle -a^5 + a^4 - 2a^2 + b + a + 1,\ a^6 - a^5 + 2a^3 - a^2 - a + 1,\ u + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 5a^5 - a^3 + 10a^2 + 2a + 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -0.917982 + 0.270708I$ $b = 1.002190 + 0.295542I$	$3.53554 + 0.92430I$	$10.88169 - 1.11590I$
$u = -1.00000$ $a = -0.917982 - 0.270708I$ $b = 1.002190 - 0.295542I$	$3.53554 - 0.92430I$	$10.88169 + 1.11590I$
$u = -1.00000$ $a = 0.732786 + 0.381252I$ $b = -1.073950 + 0.558752I$	$1.64493 - 5.69302I$	$8.89162 + 7.09196I$
$u = -1.00000$ $a = 0.732786 - 0.381252I$ $b = -1.073950 - 0.558752I$	$1.64493 + 5.69302I$	$8.89162 - 7.09196I$
$u = -1.00000$ $a = 0.685196 + 1.063260I$ $b = -0.428243 + 0.664531I$	$-0.245672 + 0.924305I$	$6.22669 + 0.83820I$
$u = -1.00000$ $a = 0.685196 - 1.063260I$ $b = -0.428243 - 0.664531I$	$-0.245672 - 0.924305I$	$6.22669 - 0.83820I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^8(u^6-3u^5+5u^4-4u^3+2u^2-u+1)$ $\cdot(u^{106}+50u^{105}+\cdots+115u+1)$
c_2	$((u-1)^8)(u^6+u^5+\cdots+u+1)(u^{106}-10u^{105}+\cdots-11u+1)$
c_3	$u^8(u^6-u^5+\cdots-u+1)(u^{106}-2u^{105}+\cdots-2176u+256)$
c_4	$((u+1)^8)(u^6-u^5+\cdots-u+1)(u^{106}-10u^{105}+\cdots-11u+1)$
c_5	$(u^6+3u^5+5u^4+4u^3+2u^2+u+1)$ $\cdot(u^8+3u^7+7u^6+10u^5+11u^4+10u^3+6u^2+4u+1)$ $\cdot(u^{106}+3u^{105}+\cdots+3191795u+338425)$
c_6	$u^6(u^8+u^7-u^6-2u^5+u^4+2u^3-2u-1)$ $\cdot(u^{106}+2u^{105}+\cdots+128u+64)$
c_7	$u^8(u^6+u^5+\cdots+u+1)(u^{106}-2u^{105}+\cdots-2176u+256)$
c_8, c_9	$((u+1)^6)(u^8-u^7+\cdots-2u-1)(u^{106}+8u^{105}+\cdots+8u+1)$
c_{10}	$u^6(u^8-u^7-u^6+2u^5+u^4-2u^3+2u-1)$ $\cdot(u^{106}+2u^{105}+\cdots+128u+64)$
c_{11}	$u^6(u^8-3u^7+7u^6-10u^5+11u^4-10u^3+6u^2-4u+1)$ $\cdot(u^{106}-42u^{105}+\cdots-40960u+4096)$
c_{12}	$((u-1)^6)(u^8+u^7+\cdots+2u-1)(u^{106}+8u^{105}+\cdots+8u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^8)(y^6+y^5+\cdots+3y+1)(y^{106}+22y^{105}+\cdots-9623y+1)$
c_2, c_4	$(y-1)^8(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{106}-50y^{105}+\cdots-115y+1)$
c_3, c_7	$y^8(y^6-3y^5+5y^4-4y^3+2y^2-y+1)$ $\cdot(y^{106}-54y^{105}+\cdots-2015232y+65536)$
c_5	$(y^6+y^5+5y^4+6y^2+3y+1)$ $\cdot(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{106}-25y^{105}+\cdots-3787599470175y+114531480625)$
c_6, c_{10}	$y^6(y^8-3y^7+7y^6-10y^5+11y^4-10y^3+6y^2-4y+1)$ $\cdot(y^{106}-42y^{105}+\cdots-40960y+4096)$
c_8, c_9, c_{12}	$(y-1)^6(y^8-7y^7+19y^6-22y^5+3y^4+14y^3-6y^2-4y+1)$ $\cdot(y^{106}-92y^{105}+\cdots-20y+1)$
c_{11}	$y^6(y^8+5y^7+11y^6+6y^5-17y^4-34y^3-22y^2-4y+1)$ $\cdot(y^{106}+34y^{105}+\cdots-511705088y+16777216)$