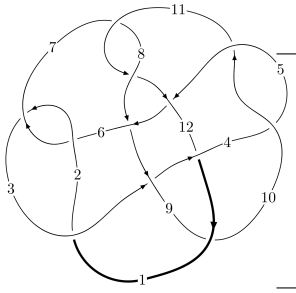
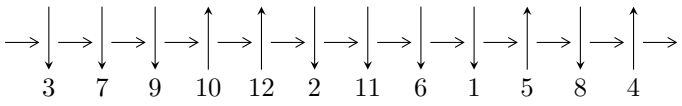
$12a_{0588}$ $(K12a_{0588})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -7.06111 \times 10^{773} u^{166} + 1.98874 \times 10^{774} u^{165} + \cdots + 4.70005 \times 10^{772} b - 5.06349 \times 10^{777},$$
$$- 2.89028 \times 10^{777} u^{166} + 8.09192 \times 10^{777} u^{165} + \cdots + 2.74812 \times 10^{776} a - 2.11200 \times 10^{781},$$
$$u^{167} - 2u^{166} + \cdots + 46140u + 5847 \rangle$$

$$I_2^u = \langle 9.18102 \times 10^{17} u^{38} - 1.34409 \times 10^{19} u^{37} + \cdots + 9.06237 \times 10^{15} b - 3.91149 \times 10^{19},$$
$$- 1.28417 \times 10^{19} u^{38} + 4.98704 \times 10^{19} u^{37} + \cdots + 9.06237 \times 10^{15} a - 3.71425 \times 10^{18},\ u^{39} - 5u^{38} + \cdots - 9u +$$

$$I_3^u = \langle b - a - 1,\ a^2 - 3a + 1,\ u + 1 \rangle$$

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 209 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. $\boldsymbol{I_1^u = \langle -7.06 \times 10^{773} u^{166} + 1.99 \times 10^{774} u^{165} + \cdots + 4.70 \times 10^{772} b - 5.06 \times 10^{777},\ -2.89 \times 10^{777} u^{166} + 8.09 \times 10^{777} u^{165} + \cdots + 2.75 \times 10^{776} a - 2.11 \times 10^{781},\ u^{167} - 2u^{166} + \cdots + 46140u + 5847 \rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 10.5173u^{166} - 29.4453u^{165} + \cdots + 510485.u + 76852.5 \\ 15.0235u^{166} - 42.3132u^{165} + \cdots + 717941.u + 107733. \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 7.22247u^{166} - 20.0391u^{165} + \cdots + 358938.u + 54309.3 \\ 11.7287u^{166} - 32.9070u^{165} + \cdots + 566395.u + 85189.5 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 39.2230u^{166} - 111.042u^{165} + \cdots + 1.84559 \times 10^6 u + 275964. \\ 18.7469u^{166} - 53.1149u^{165} + \cdots + 880172.u + 131530. \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.661216u^{166} - 2.29430u^{165} + \cdots + 11316.9u + 1043.92 \\ -12.4536u^{166} + 34.9983u^{165} + \cdots - 598548.u - 89946.7 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -79.9532u^{166} + 226.459u^{165} + \cdots - 3.75759 \times 10^6 u - 561688. \\ -57.9512u^{166} + 164.085u^{165} + \cdots - 2.72593 \times 10^6 u - 407523. \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 14.2566u^{166} - 40.7929u^{165} + \cdots + 650841.u + 96673.1 \\ -3.04496u^{166} + 8.35531u^{165} + \cdots - 156295.u - 23829.6 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -53.0429u^{166} + 150.311u^{165} + \cdots - 2.48802 \times 10^6 u - 371738. \\ -51.4081u^{166} + 145.510u^{165} + \cdots - 2.41953 \times 10^6 u - 361765. \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -6.89637u^{166} + 16.0888u^{165} + \cdots - 483395.u - 77477.5 \\ 6.82176u^{166} - 21.7442u^{165} + \cdots + 209405.u + 27717.5 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -1337.96u^{166} + 3790.87u^{165} + \cdots - 6.28006 \times 10^7 u - 9.38419 \times 10^6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{167} + 71u^{166} + \cdots + 2794905u + 88209$
c_2, c_6	$u^{167} - 3u^{166} + \cdots - 1611u - 297$
c_3	$u^{167} - u^{166} + \cdots + 9u - 1$
c_4, c_{10}	$u^{167} + u^{166} + \cdots + 286094u + 26963$
c_5	$u^{167} - 4u^{166} + \cdots - 98117u + 118061$
c_7, c_{11}	$u^{167} - 2u^{166} + \cdots + 46140u + 5847$
c_8	$u^{167} - 5u^{166} + \cdots - 30593750u + 2687500$
c_9	$u^{167} + 9u^{166} + \cdots - 1286138u - 711596$
c_{12}	$u^{167} + 17u^{166} + \cdots - 36u - 12$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{167} + 53y^{166} + \cdots - 16946980639767y - 7780827681$
c_2, c_6	$y^{167} - 71y^{166} + \cdots + 2794905y - 88209$
c_3	$y^{167} + 19y^{166} + \cdots + 903y - 1$
c_4, c_{10}	$y^{167} - 109y^{166} + \cdots + 67092980862y - 727003369$
c_5	$y^{167} + 16y^{166} + \cdots - 734586387985y - 13938399721$
c_7, c_{11}	$y^{167} - 86y^{166} + \cdots + 1156461642y - 34187409$
c_8	$y^{167} - 17y^{166} + \cdots + 606399335937500y - 7222656250000$
c_9	$y^{167} + 55y^{166} + \cdots - 11009677597860y - 506368867216$
c_{12}	$y^{167} - 29y^{166} + \cdots + 6408y - 144$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.972662+0.230057I$ $a=-0.714704+0.054338I$ $b=-0.629457+0.206535I$	$-1.74998+0.43329I$	0
$u=-0.972662-0.230057I$ $a=-0.714704-0.054338I$ $b=-0.629457-0.206535I$	$-1.74998-0.43329I$	0
$u=0.821125+0.560089I$ $a=0.457294-0.470633I$ $b=1.66147-0.32360I$	$4.79609-5.26583I$	0
$u=0.821125-0.560089I$ $a=0.457294+0.470633I$ $b=1.66147+0.32360I$	$4.79609+5.26583I$	0
$u=0.039794+0.986024I$ $a=0.18398-1.64651I$ $b=0.817154-0.578261I$	$0.11929+8.53958I$	0
$u=0.039794-0.986024I$ $a=0.18398+1.64651I$ $b=0.817154+0.578261I$	$0.11929-8.53958I$	0
$u=-0.894406+0.414575I$ $a=-0.467639+0.689638I$ $b=0.505608+0.092764I$	$5.21083-0.90333I$	0
$u=-0.894406-0.414575I$ $a=-0.467639-0.689638I$ $b=0.505608-0.092764I$	$5.21083+0.90333I$	0
$u=0.801414+0.625750I$ $a=-0.474913+0.949506I$ $b=-0.261128-0.222516I$	$4.85064+0.68988I$	0
$u=0.801414-0.625750I$ $a=-0.474913-0.949506I$ $b=-0.261128+0.222516I$	$4.85064-0.68988I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.942240+0.252531I$ $a=-1.13569-1.23380I$ $b=-2.34372-0.69387I$	$2.20316+4.25845I$	0
$u=-0.942240-0.252531I$ $a=-1.13569+1.23380I$ $b=-2.34372+0.69387I$	$2.20316-4.25845I$	0
$u=0.864699+0.448507I$ $a=0.57238+1.37555I$ $b=-0.606818+1.182450I$	$4.25327-10.46020I$	0
$u=0.864699-0.448507I$ $a=0.57238-1.37555I$ $b=-0.606818-1.182450I$	$4.25327+10.46020I$	0
$u=0.872923+0.539032I$ $a=-0.028634-0.661713I$ $b=-0.814435-0.686233I$	$-2.00357-3.87173I$	0
$u=0.872923-0.539032I$ $a=-0.028634+0.661713I$ $b=-0.814435+0.686233I$	$-2.00357+3.87173I$	0
$u=0.764718+0.593333I$ $a=-0.224352+0.611378I$ $b=0.003174-0.502837I$	$4.86027+0.57727I$	0
$u=0.764718-0.593333I$ $a=-0.224352-0.611378I$ $b=0.003174+0.502837I$	$4.86027-0.57727I$	0
$u=0.807662+0.525764I$ $a=-0.109429-0.467702I$ $b=1.103770-0.284116I$	$4.72818-5.02734I$	0
$u=0.807662-0.525764I$ $a=-0.109429+0.467702I$ $b=1.103770+0.284116I$	$4.72818+5.02734I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.03726$ $a=\ \ 3.68109$ $b=\ \ 4.54373$	-3.13749	0
$u=-0.897317+0.347194I$ $a=\ \ 1.41904-0.00440I$ $b=\ \ 2.79934-0.20867I$	$3.47117+10.13850I$	0
$u=-0.897317-0.347194I$ $a=\ \ 1.41904+0.00440I$ $b=\ \ 2.79934+0.20867I$	$3.47117-10.13850I$	0
$u=\ \ 1.018550+0.259841I$ $a=\ \ 0.071552+0.245607I$ $b=-0.609424-0.451865I$	$-2.58602-3.93355I$	0
$u=\ \ 1.018550-0.259841I$ $a=\ \ 0.071552-0.245607I$ $b=-0.609424+0.451865I$	$-2.58602+3.93355I$	0
$u=\ \ 0.878831+0.341393I$ $a=\ \ 1.05330-2.00228I$ $b=\ \ 0.565038-0.965512I$	$4.72304-4.97410I$	0
$u=\ \ 0.878831-0.341393I$ $a=\ \ 1.05330+2.00228I$ $b=\ \ 0.565038+0.965512I$	$4.72304+4.97410I$	0
$u=-1.025650+0.269556I$ $a=-2.30755+0.91685I$ $b=-3.16643+0.41485I$	$-5.43574+0.32299I$	0
$u=-1.025650-0.269556I$ $a=-2.30755-0.91685I$ $b=-3.16643-0.41485I$	$-5.43574-0.32299I$	0
$u=\ \ 0.777394+0.493312I$ $a=\ \ 0.720123+0.423177I$ $b=\ \ 0.20264+1.47698I$	$4.51945+6.57191I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.777394 - 0.493312I$ $a = 0.720123 - 0.423177I$ $b = 0.20264 - 1.47698I$	$4.51945 - 6.57191I$	0
$u = 0.187205 + 0.889090I$ $a = 0.03570 + 2.05620I$ $b = -0.330273 + 0.835028I$	$0.92581 + 6.07862I$	0
$u = 0.187205 - 0.889090I$ $a = 0.03570 - 2.05620I$ $b = -0.330273 - 0.835028I$	$0.92581 - 6.07862I$	0
$u = -0.021949 + 1.093140I$ $a = 0.26200 - 1.66572I$ $b = 0.270816 - 0.551047I$	$-0.45503 - 6.15957I$	0
$u = -0.021949 - 1.093140I$ $a = 0.26200 + 1.66572I$ $b = 0.270816 + 0.551047I$	$-0.45503 + 6.15957I$	0
$u = 0.765199 + 0.480119I$ $a = -0.33579 + 1.43118I$ $b = -0.005294 + 0.173701I$	$4.82252 + 0.90757I$	0
$u = 0.765199 - 0.480119I$ $a = -0.33579 - 1.43118I$ $b = -0.005294 - 0.173701I$	$4.82252 - 0.90757I$	0
$u = -1.016800 + 0.443199I$ $a = -0.644176 + 0.375189I$ $b = -0.369034 + 1.056070I$	$-2.16138 + 1.67808I$	0
$u = -1.016800 - 0.443199I$ $a = -0.644176 - 0.375189I$ $b = -0.369034 - 1.056070I$	$-2.16138 - 1.67808I$	0
$u = -0.351162 + 1.053340I$ $a = -0.0276257 + 0.1218040I$ $b = -0.935297 - 0.078163I$	$6.01572 - 8.10134I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.351162-1.053340I$ $a=-0.0276257-0.1218040I$ $b=-0.935297+0.078163I$	$6.01572+8.10134I$	0
$u=-0.852820+0.226205I$ $a=1.019270+0.598571I$ $b=0.292599-0.596293I$	$2.55823-2.10130I$	0
$u=-0.852820-0.226205I$ $a=1.019270-0.598571I$ $b=0.292599+0.596293I$	$2.55823+2.10130I$	0
$u=1.122420+0.040813I$ $a=-1.050590-0.673726I$ $b=-2.09129-0.10135I$	$-4.84462+2.01205I$	0
$u=1.122420-0.040813I$ $a=-1.050590+0.673726I$ $b=-2.09129+0.10135I$	$-4.84462-2.01205I$	0
$u=0.398803+0.780172I$ $a=-0.676907+0.558220I$ $b=-0.0453966-0.1333240I$	$2.71184+2.00711I$	0
$u=0.398803-0.780172I$ $a=-0.676907-0.558220I$ $b=-0.0453966+0.1333240I$	$2.71184-2.00711I$	0
$u=0.824347+0.289882I$ $a=-2.62081+0.89290I$ $b=-3.67138+0.60920I$	$4.99211+2.13455I$	0
$u=0.824347-0.289882I$ $a=-2.62081-0.89290I$ $b=-3.67138-0.60920I$	$4.99211-2.13455I$	0
$u=0.092978+0.867549I$ $a=0.314473-0.607042I$ $b=-0.627542+0.003275I$	$1.35564+3.10692I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.092978 - 0.867549I$ $a = 0.314473 + 0.607042I$ $b = -0.627542 - 0.003275I$	$1.35564 - 3.10692I$	0
$u = -0.792901 + 0.355099I$ $a = -0.26167 - 1.82672I$ $b = 0.518383 - 0.533921I$	$3.80719 - 7.07343I$	0
$u = -0.792901 - 0.355099I$ $a = -0.26167 + 1.82672I$ $b = 0.518383 + 0.533921I$	$3.80719 + 7.07343I$	0
$u = -0.788640 + 0.339798I$ $a = -1.47249 - 0.51463I$ $b = -0.895767 + 0.050514I$	$-1.85499 + 0.29361I$	0
$u = -0.788640 - 0.339798I$ $a = -1.47249 + 0.51463I$ $b = -0.895767 - 0.050514I$	$-1.85499 - 0.29361I$	0
$u = 1.091310 + 0.405083I$ $a = -0.001384 + 0.328024I$ $b = 0.018709 - 0.539674I$	$0.86485 - 3.58498I$	0
$u = 1.091310 - 0.405083I$ $a = -0.001384 - 0.328024I$ $b = 0.018709 + 0.539674I$	$0.86485 + 3.58498I$	0
$u = -1.087430 + 0.415532I$ $a = -0.128643 - 0.308564I$ $b = -0.597632 - 0.988389I$	$-0.912275 - 0.937931I$	0
$u = -1.087430 - 0.415532I$ $a = -0.128643 + 0.308564I$ $b = -0.597632 + 0.988389I$	$-0.912275 + 0.937931I$	0
$u = -0.724392 + 0.412992I$ $a = 1.12167 + 1.41576I$ $b = 0.248043 + 1.093250I$	$-4.11167 + 2.24501I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.724392-0.412992I$ $a=\ 1.12167-1.41576I$ $b=\ 0.248043-1.093250I$	$-4.11167-2.24501I$	0
$u=-0.831820+0.017037I$ $a=\ 2.33554-3.06965I$ $b=\ 1.26334-2.18652I$	$1.81851+2.85219I$	0
$u=-0.831820-0.017037I$ $a=\ 2.33554+3.06965I$ $b=\ 1.26334+2.18652I$	$1.81851-2.85219I$	0
$u=\ 0.344357+0.753523I$ $a=-0.492546+0.258225I$ $b=\ 0.282513+0.131141I$	$2.55307+1.66800I$	0
$u=\ 0.344357-0.753523I$ $a=-0.492546-0.258225I$ $b=\ 0.282513-0.131141I$	$2.55307-1.66800I$	0
$u=\ 1.095270+0.416653I$ $a=-1.54064-0.99695I$ $b=-2.42748-0.40304I$	$-4.08354-3.20236I$	0
$u=\ 1.095270-0.416653I$ $a=-1.54064+0.99695I$ $b=-2.42748+0.40304I$	$-4.08354+3.20236I$	0
$u=-1.17213$ $a=-0.922587$ $b=-1.73912$	-2.83879	0
$u=-0.826385$ $a=-0.917377$ $b=-2.75477$	-0.705957	0
$u=-0.407511+1.106390I$ $a=\ 0.529226-0.143879I$ $b=\ 1.270910-0.032384I$	$6.61099+1.46475I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.407511-1.106390I$ $a=\ 0.529226+0.143879I$ $b=\ 1.270910+0.032384I$	$6.61099-1.46475I$	0
$u=-1.098180+0.447252I$ $a=\ 2.34715+0.76754I$ $b=\ 3.31921+0.63775I$	$-3.43399+6.32250I$	0
$u=-1.098180-0.447252I$ $a=\ 2.34715-0.76754I$ $b=\ 3.31921-0.63775I$	$-3.43399-6.32250I$	0
$u=-0.307719+0.745452I$ $a=\ 0.50216+1.92220I$ $b=\ 0.016544+0.780195I$	$-4.08290+2.57720I$	0
$u=-0.307719-0.745452I$ $a=\ 0.50216-1.92220I$ $b=\ 0.016544-0.780195I$	$-4.08290-2.57720I$	0
$u=-1.204090+0.039093I$ $a=\ 1.44148+1.52259I$ $b=\ 2.08490+1.30733I$	$-2.95281+0.67247I$	0
$u=-1.204090-0.039093I$ $a=\ 1.44148-1.52259I$ $b=\ 2.08490-1.30733I$	$-2.95281-0.67247I$	0
$u=\ 0.713714+0.342186I$ $a=\ 1.36260-1.29521I$ $b=\ 2.58306-0.99547I$	$5.13802-4.71471I$	0
$u=\ 0.713714-0.342186I$ $a=\ 1.36260+1.29521I$ $b=\ 2.58306+0.99547I$	$5.13802+4.71471I$	0
$u=\ 1.074270+0.570781I$ $a=-1.49456-0.84545I$ $b=-2.00878-0.22597I$	$-2.83698-0.68862I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.074270 - 0.570781I$ $a = -1.49456 + 0.84545I$ $b = -2.00878 + 0.22597I$	$-2.83698 + 0.68862I$	0
$u = -1.171690 + 0.339206I$ $a = 0.479015 + 0.777736I$ $b = 0.868747 + 0.476023I$	$-2.94382 + 0.96462I$	0
$u = -1.171690 - 0.339206I$ $a = 0.479015 - 0.777736I$ $b = 0.868747 - 0.476023I$	$-2.94382 - 0.96462I$	0
$u = -0.366444 + 1.164790I$ $a = 0.36161 + 1.76843I$ $b = 0.625432 + 0.738449I$	$4.2665 - 13.9116I$	0
$u = -0.366444 - 1.164790I$ $a = 0.36161 - 1.76843I$ $b = 0.625432 - 0.738449I$	$4.2665 + 13.9116I$	0
$u = 0.917100 + 0.807092I$ $a = -1.13593 + 1.11590I$ $b = -0.929625 + 0.348672I$	$-1.51643 - 0.92743I$	0
$u = 0.917100 - 0.807092I$ $a = -1.13593 - 1.11590I$ $b = -0.929625 - 0.348672I$	$-1.51643 + 0.92743I$	0
$u = -1.088940 + 0.560207I$ $a = 1.61092 + 0.88655I$ $b = 2.51985 + 0.90599I$	$-3.20452 + 3.95476I$	0
$u = -1.088940 - 0.560207I$ $a = 1.61092 - 0.88655I$ $b = 2.51985 - 0.90599I$	$-3.20452 - 3.95476I$	0
$u = -1.176440 + 0.365393I$ $a = -0.154254 - 0.460357I$ $b = -0.757170 + 0.469133I$	$2.18325 + 7.21707I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.176440-0.365393I$ $a=-0.154254+0.460357I$ $b=-0.757170-0.469133I$	$2.18325-7.21707I$	0
$u=-0.682130+0.352918I$ $a=0.317815-0.020147I$ $b=0.168107+1.249880I$	$5.87369+4.34128I$	0
$u=-0.682130-0.352918I$ $a=0.317815+0.020147I$ $b=0.168107-1.249880I$	$5.87369-4.34128I$	0
$u=1.095280+0.579401I$ $a=0.231558-0.424823I$ $b=0.647454-0.755009I$	$0.64781-7.09781I$	0
$u=1.095280-0.579401I$ $a=0.231558+0.424823I$ $b=0.647454+0.755009I$	$0.64781+7.09781I$	0
$u=1.118200+0.548382I$ $a=-0.0060452-0.0355583I$ $b=-0.095778-0.615914I$	$0.25306-6.57486I$	0
$u=1.118200-0.548382I$ $a=-0.0060452+0.0355583I$ $b=-0.095778+0.615914I$	$0.25306+6.57486I$	0
$u=-1.238610+0.271155I$ $a=-1.017820+0.563393I$ $b=-1.99341+0.13579I$	$-2.85298+0.64390I$	0
$u=-1.238610-0.271155I$ $a=-1.017820-0.563393I$ $b=-1.99341-0.13579I$	$-2.85298-0.64390I$	0
$u=-1.227170+0.344099I$ $a=-2.27737-0.42570I$ $b=-3.08426-0.18927I$	$-1.30612+3.53496I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.227170-0.344099I$ $a=-2.27737+0.42570I$ $b=-3.08426+0.18927I$	$-1.30612-3.53496I$	0
$u=0.012707+0.720570I$ $a=0.60416+1.54109I$ $b=-0.258429+0.159699I$	$2.09377+4.82413I$	0
$u=0.012707-0.720570I$ $a=0.60416-1.54109I$ $b=-0.258429-0.159699I$	$2.09377-4.82413I$	0
$u=1.28122$ $a=-1.38634$ $b=-2.48042$	-5.67652	0
$u=1.026020+0.798036I$ $a=1.64787-0.96510I$ $b=2.45767-1.06110I$	$-1.85216-5.28971I$	0
$u=1.026020-0.798036I$ $a=1.64787+0.96510I$ $b=2.45767+1.06110I$	$-1.85216+5.28971I$	0
$u=1.253590+0.345646I$ $a=1.93694+0.33452I$ $b=2.84400+0.12698I$	$-8.61590-6.29433I$	0
$u=1.253590-0.345646I$ $a=1.93694-0.33452I$ $b=2.84400-0.12698I$	$-8.61590+6.29433I$	0
$u=0.551471+1.181840I$ $a=-0.507872-0.319245I$ $b=-1.191230+0.067118I$	$5.51074-0.68657I$	0
$u=0.551471-1.181840I$ $a=-0.507872+0.319245I$ $b=-1.191230-0.067118I$	$5.51074+0.68657I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.211830+0.494684I$		
$a=$	$0.154240-0.059774I$	$-2.00966-7.97299I$	0
$b=$	$0.012165+0.721490I$		
$u=$	$1.211830-0.494684I$		
$a=$	$0.154240+0.059774I$	$-2.00966+7.97299I$	0
$b=$	$0.012165-0.721490I$		
$u=$	$1.308990+0.086760I$		
$a=$	$0.245930-0.640665I$	$-0.46214+4.41042I$	0
$b=$	$0.448222+0.007371I$		
$u=$	$1.308990-0.086760I$		
$a=$	$0.245930+0.640665I$	$-0.46214-4.41042I$	0
$b=$	$0.448222-0.007371I$		
$u=$	$-1.290030+0.287728I$		
$a=$	$-1.65547+0.48423I$	$-3.90405-1.98704I$	0
$b=$	$-2.32068+0.04081I$		
$u=$	$-1.290030-0.287728I$		
$a=$	$-1.65547-0.48423I$	$-3.90405+1.98704I$	0
$b=$	$-2.32068-0.04081I$		
$u=$	$0.279869+0.616788I$		
$a=$	$-0.699436+0.686480I$	$3.12930-0.37154I$	0
$b=$	$0.659738+0.266091I$		
$u=$	$0.279869-0.616788I$		
$a=$	$-0.699436-0.686480I$	$3.12930+0.37154I$	0
$b=$	$0.659738-0.266091I$		
$u=$	$1.203670+0.552576I$		
$a=$	$2.17894-0.16451I$	$-2.11962-11.30150I$	0
$b=$	$3.11524-0.12905I$		
$u=$	$1.203670-0.552576I$		
$a=$	$2.17894+0.16451I$	$-2.11962+11.30150I$	0
$b=$	$3.11524+0.12905I$		

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.234800+0.486824I$		
$a=$	$1.65067-0.31367I$	$-1.50103-9.35073I$	0
$b=$	$2.64316-0.17948I$		
$u=$	$1.234800-0.486824I$		
$a=$	$1.65067+0.31367I$	$-1.50103+9.35073I$	0
$b=$	$2.64316+0.17948I$		
$u=$	$0.243949+1.305120I$		
$a=$	$0.88825+1.47403I$	$4.21291+0.50576I$	0
$b=$	$1.29692+0.96572I$		
$u=$	$0.243949-1.305120I$		
$a=$	$0.88825-1.47403I$	$4.21291-0.50576I$	0
$b=$	$1.29692-0.96572I$		
$u=$	$-0.523891+0.420043I$		
$a=$	$-1.109200+0.842834I$	$-0.70512+2.01041I$	0
$b=$	$0.343578+0.954743I$		
$u=$	$-0.523891-0.420043I$		
$a=$	$-1.109200-0.842834I$	$-0.70512-2.01041I$	0
$b=$	$0.343578-0.954743I$		
$u=$	$0.473620+1.282640I$		
$a=$	$0.52904-1.82862I$	$5.40830+3.98730I$	0
$b=$	$0.710791-1.085310I$		
$u=$	$0.473620-1.282640I$		
$a=$	$0.52904+1.82862I$	$5.40830-3.98730I$	0
$b=$	$0.710791+1.085310I$		
$u=$	$1.265470+0.517748I$		
$a=$	$-2.00987+0.56643I$	$-3.6237-13.8044I$	0
$b=$	$-2.93999+0.39718I$		
$u=$	$1.265470-0.517748I$		
$a=$	$-2.00987-0.56643I$	$-3.6237+13.8044I$	0
$b=$	$-2.93999-0.39718I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.300020 + 0.465588I$ $a = 1.68103 + 1.34936I$ $b = 2.19774 + 1.00780I$	$-0.04586 - 6.47494I$	0
$u = 1.300020 - 0.465588I$ $a = 1.68103 - 1.34936I$ $b = 2.19774 - 1.00780I$	$-0.04586 + 6.47494I$	0
$u = -1.230910 + 0.643789I$ $a = 0.272720 + 0.217535I$ $b = 0.256950 - 0.600005I$	$3.2289 + 14.1873I$	0
$u = -1.230910 - 0.643789I$ $a = 0.272720 - 0.217535I$ $b = 0.256950 + 0.600005I$	$3.2289 - 14.1873I$	0
$u = 0.120763 + 1.387720I$ $a = -0.38831 + 1.41511I$ $b = -0.652403 + 0.625650I$	$3.06862 + 4.02525I$	0
$u = 0.120763 - 1.387720I$ $a = -0.38831 - 1.41511I$ $b = -0.652403 - 0.625650I$	$3.06862 - 4.02525I$	0
$u = -1.298750 + 0.516850I$ $a = 1.63367 - 0.30995I$ $b = 2.56653 - 0.03819I$	$-4.48105 + 11.69190I$	0
$u = -1.298750 - 0.516850I$ $a = 1.63367 + 0.30995I$ $b = 2.56653 + 0.03819I$	$-4.48105 - 11.69190I$	0
$u = 1.207060 + 0.714555I$ $a = 0.161680 - 0.448181I$ $b = -0.050290 + 0.212292I$	$3.22888 - 6.01975I$	0
$u = 1.207060 - 0.714555I$ $a = 0.161680 + 0.448181I$ $b = -0.050290 - 0.212292I$	$3.22888 + 6.01975I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.253070+0.646797I$ $a=-0.235848-0.479252I$ $b=-0.270872+0.331856I$	$3.79785+4.81113I$	0
$u=-1.253070-0.646797I$ $a=-0.235848+0.479252I$ $b=-0.270872-0.331856I$	$3.79785-4.81113I$	0
$u=-1.27339+0.64989I$ $a=-1.82198-0.05193I$ $b=-2.56866-0.24143I$	$-6.54719+3.14760I$	0
$u=-1.27339-0.64989I$ $a=-1.82198+0.05193I$ $b=-2.56866+0.24143I$	$-6.54719-3.14760I$	0
$u=-1.26670+0.68313I$ $a=-1.89994-0.47253I$ $b=-2.83664-0.40349I$	$1.3708+20.4475I$	0
$u=-1.26670-0.68313I$ $a=-1.89994+0.47253I$ $b=-2.83664+0.40349I$	$1.3708-20.4475I$	0
$u=-0.53085+1.34755I$ $a=-0.33148-1.58673I$ $b=-0.439544-0.688030I$	$4.41501-3.86776I$	0
$u=-0.53085-1.34755I$ $a=-0.33148+1.58673I$ $b=-0.439544+0.688030I$	$4.41501+3.86776I$	0
$u=-1.39962+0.37548I$ $a=1.13546-0.92302I$ $b=1.71784-0.37281I$	$-4.57607-3.35241I$	0
$u=-1.39962-0.37548I$ $a=1.13546+0.92302I$ $b=1.71784+0.37281I$	$-4.57607+3.35241I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.46469 + 0.01323I$ $a = 1.42838 - 0.61391I$ $b = 2.20866 - 0.23716I$	$-3.18044 - 9.46852I$	0
$u = 1.46469 - 0.01323I$ $a = 1.42838 + 0.61391I$ $b = 2.20866 + 0.23716I$	$-3.18044 + 9.46852I$	0
$u = 1.29332 + 0.70894I$ $a = -2.04321 + 0.46120I$ $b = -2.81009 + 0.39990I$	$2.54670 - 10.98520I$	0
$u = 1.29332 - 0.70894I$ $a = -2.04321 - 0.46120I$ $b = -2.81009 - 0.39990I$	$2.54670 + 10.98520I$	0
$u = -0.290043 + 0.437666I$ $a = -0.70552 - 2.82250I$ $b = -0.670446 - 0.733525I$	$-1.12363 - 2.51826I$	0
$u = -0.290043 - 0.437666I$ $a = -0.70552 + 2.82250I$ $b = -0.670446 + 0.733525I$	$-1.12363 + 2.51826I$	0
$u = -1.29382 + 0.74799I$ $a = 1.66716 + 0.41933I$ $b = 2.58668 + 0.38500I$	$1.69980 + 11.17630I$	0
$u = -1.29382 - 0.74799I$ $a = 1.66716 - 0.41933I$ $b = 2.58668 - 0.38500I$	$1.69980 - 11.17630I$	0
$u = -1.49814$ $a = -1.05233$ $b = -2.26146$	-3.57692	0
$u = 1.50073 + 0.30730I$ $a = -1.56109 + 0.14111I$ $b = -2.46137 + 0.18035I$	$-5.68281 + 0.50897I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 1.50073 - 0.30730I$ $a = -1.56109 - 0.14111I$ $b = -2.46137 - 0.18035I$	$-5.68281 - 0.50897I$	0
$u = \ \ 0.413681$ $a = \ \ 1.17546$ $b = -1.57045$	-1.68445	-5.87110
$u = \ \ 0.029948 + 0.382068I$ $a = -1.206370 - 0.356686I$ $b = \ \ 0.001172 + 0.400612I$	$-0.149131 + 1.319240I$	$-1.86986 - 5.03740I$
$u = \ \ 0.029948 - 0.382068I$ $a = -1.206370 + 0.356686I$ $b = \ \ 0.001172 - 0.400612I$	$-0.149131 - 1.319240I$	$-1.86986 + 5.03740I$
$u = -0.117535 + 0.252253I$ $a = -1.54475 + 0.54235I$ $b = \ \ 0.48065 - 1.44244I$	$5.25829 - 4.17203I$	$6.61357 + 8.01980I$
$u = -0.117535 - 0.252253I$ $a = -1.54475 - 0.54235I$ $b = \ \ 0.48065 + 1.44244I$	$5.25829 + 4.17203I$	$6.61357 - 8.01980I$
$u = -0.225749$ $a = -4.58336$ $b = -0.611591$	-1.68303	-4.96990

II.

$\boldsymbol{I_2^u = \langle 9.18\times10^{17}u^{38}-1.34\times10^{19}u^{37}+\cdots+9.06\times10^{15}b-3.91\times10^{19},\ -1.28\times10^{19}u^{38}+4.99\times10^{19}u^{37}+\cdots+9.06\times10^{15}a-3.71\times10^{18},\ u^{39}-5u^{38}+\cdots-9u+1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}1417.04u^{38}-5503.02u^{37}+\cdots+3313.37u+409.854\\-101.309u^{38}+1483.15u^{37}+\cdots-21944.4u+4316.19\end{pmatrix}$$

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

$$a_3 = \begin{pmatrix}1672.55u^{38}-6652.10u^{37}+\cdots+7245.12u-195.711\\154.203u^{38}+334.074u^{37}+\cdots-18012.6u+3710.62\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-6028.69u^{38}+27194.1u^{37}+\cdots-85705.9u+12281.3\\-19626.0u^{38}+89034.5u^{37}+\cdots-288221.u+41765.0\end{pmatrix}$$

$$a_6 = \begin{pmatrix}9317.72u^{38}-41268.0u^{37}+\cdots+116538.u-15918.4\\13957.7u^{38}-62051.3u^{37}+\cdots+178722.u-24480.5\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-34297.2u^{38}+154375.u^{37}+\cdots-477938.u+67924.1\\-25809.4u^{38}+116867.u^{37}+\cdots-373807.u+53904.3\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-1623.45u^{38}+7364.96u^{37}+\cdots-23617.2u+3241.46\\10662.2u^{38}-47331.4u^{37}+\cdots+135007.u-18407.6\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}45853.7u^{38}-207137.u^{37}+\cdots+655551.u-93993.3\\10529.3u^{38}-47691.1u^{37}+\cdots+153327.u-22129.9\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-3555.55u^{38}+16760.9u^{37}+\cdots-71534.6u+11256.4\\-9390.03u^{38}+41903.9u^{37}+\cdots-128358.u+17968.8\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{389178706152018704476}{9062374718835497}u^{38}+\frac{1773907411422215220288}{9062374718835497}u^{37}+\cdots-\frac{6037733369173327592722}{9062374718835497}u+\frac{885315973119248416826}{9062374718835497}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{39} - 21u^{38} + \cdots + 16u - 1$
c_2	$u^{39} + u^{38} + \cdots + 2u - 1$
c_3	$u^{39} - 2u^{38} + \cdots + u - 1$
c_4	$u^{39} - 2u^{38} + \cdots - 6u^2 - 1$
c_5	$u^{39} - 2u^{38} + \cdots - 2u + 1$
c_6	$u^{39} - u^{38} + \cdots + 2u + 1$
c_7	$u^{39} + 5u^{38} + \cdots - 9u - 1$
c_8	$u^{39} + 8u^{38} + \cdots + 13u + 1$
c_9	$u^{39} + 11u^{37} + \cdots - 14u + 1$
c_{10}	$u^{39} + 2u^{38} + \cdots + 6u^2 + 1$
c_{11}	$u^{39} - 5u^{38} + \cdots - 9u + 1$
c_{12}	$u^{39} - 4u^{38} + \cdots + u - 5$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{39} - 5y^{38} + \cdots - 16y - 1$
c_2, c_6	$y^{39} - 21y^{38} + \cdots + 16y - 1$
c_3	$y^{39} + 22y^{38} + \cdots + 21y - 1$
c_4, c_{10}	$y^{39} - 18y^{38} + \cdots - 12y - 1$
c_5	$y^{39} - 2y^{38} + \cdots - 46y - 1$
c_7, c_{11}	$y^{39} - 15y^{38} + \cdots + 31y - 1$
c_8	$y^{39} + 10y^{38} + \cdots + 127y - 1$
c_9	$y^{39} + 22y^{38} + \cdots + 32y - 1$
c_{12}	$y^{39} - 20y^{38} + \cdots - 2749y - 25$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.141338+0.971193I$ $a=\ \ 0.359164+1.304700I$ $b=\ \ 0.894031+0.163396I$	$4.64157-2.47258I$	0
$u=-0.141338-0.971193I$ $a=\ \ 0.359164-1.304700I$ $b=\ \ 0.894031-0.163396I$	$4.64157+2.47258I$	0
$u=\ \ 0.155284+0.968762I$ $a=-0.370469+0.980702I$ $b=-0.935460+0.157066I$	$5.66797+2.80150I$	0
$u=\ \ 0.155284-0.968762I$ $a=-0.370469-0.980702I$ $b=-0.935460-0.157066I$	$5.66797-2.80150I$	0
$u=\ \ 0.802024+0.682544I$ $a=-0.36849+1.57650I$ $b=\ \ 0.260672+1.137170I$	$-2.98362-2.92262I$	0
$u=\ \ 0.802024-0.682544I$ $a=-0.36849-1.57650I$ $b=\ \ 0.260672-1.137170I$	$-2.98362+2.92262I$	0
$u=-0.882146+0.588152I$ $a=\ \ 1.32712+0.72292I$ $b=\ \ 0.955867-0.035979I$	$-3.36110+0.54468I$	0
$u=-0.882146-0.588152I$ $a=\ \ 1.32712-0.72292I$ $b=\ \ 0.955867+0.035979I$	$-3.36110-0.54468I$	0
$u=-0.879366+0.191337I$ $a=-1.36217+0.84104I$ $b=-0.642259+1.035880I$	$-2.32189+0.38514I$	$-27.2636+7.9694I$
$u=-0.879366-0.191337I$ $a=-1.36217-0.84104I$ $b=-0.642259-1.035880I$	$-2.32189-0.38514I$	$-27.2636-7.9694I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.840362+0.247653I$ $a=-0.648425-0.010014I$ $b=\ 0.346685-0.484292I$	$-2.61620+3.22051I$	$-10.02369-1.21631I$
$u=-0.840362-0.247653I$ $a=-0.648425+0.010014I$ $b=\ 0.346685+0.484292I$	$-2.61620-3.22051I$	$-10.02369+1.21631I$
$u=-0.817321+0.012496I$ $a=\ 2.29214-2.92454I$ $b=\ 1.20520-2.02239I$	$1.83275+2.84642I$	$196.907+95.064I$
$u=-0.817321-0.012496I$ $a=\ 2.29214+2.92454I$ $b=\ 1.20520+2.02239I$	$1.83275-2.84642I$	$196.907-95.064I$
$u=-1.180080+0.228160I$ $a=\ 1.45182-0.72290I$ $b=\ 2.20504-0.22444I$	$-4.15330-1.11756I$	0
$u=-1.180080-0.228160I$ $a=\ 1.45182+0.72290I$ $b=\ 2.20504+0.22444I$	$-4.15330+1.11756I$	0
$u=-1.063620+0.594929I$ $a=-1.87108-0.96000I$ $b=-2.74609-0.99291I$	$-3.99639+4.40950I$	0
$u=-1.063620-0.594929I$ $a=-1.87108+0.96000I$ $b=-2.74609+0.99291I$	$-3.99639-4.40950I$	0
$u=\ 1.148470+0.410713I$ $a=\ 0.117858-0.619202I$ $b=\ 0.679130+0.077509I$	$2.33675-6.79577I$	0
$u=\ 1.148470-0.410713I$ $a=\ 0.117858+0.619202I$ $b=\ 0.679130-0.077509I$	$2.33675+6.79577I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.108230 + 0.524742I$ $a = 1.81964 + 0.56691I$ $b = 2.59101 + 0.07948I$	$-4.25674 - 2.07764I$	0
$u = 1.108230 - 0.524742I$ $a = 1.81964 - 0.56691I$ $b = 2.59101 - 0.07948I$	$-4.25674 + 2.07764I$	0
$u = 0.723231$ $a = 0.424055$ $b = 2.41556$	-0.426246	9.90700
$u = 0.371912 + 1.237760I$ $a = -0.695008 - 1.019350I$ $b = -1.151100 - 0.609012I$	$4.51382 + 0.80773I$	0
$u = 0.371912 - 1.237760I$ $a = -0.695008 + 1.019350I$ $b = -1.151100 + 0.609012I$	$4.51382 - 0.80773I$	0
$u = 1.182380 + 0.569998I$ $a = -0.545919 - 0.277864I$ $b = -0.753269 + 0.152826I$	$1.42160 - 6.76295I$	0
$u = 1.182380 - 0.569998I$ $a = -0.545919 + 0.277864I$ $b = -0.753269 - 0.152826I$	$1.42160 + 6.76295I$	0
$u = 0.585363 + 0.165989I$ $a = -0.710101 - 0.918474I$ $b = -0.41486 - 1.98531I$	$4.81841 + 3.85595I$	$-6.08635 + 0.91025I$
$u = 0.585363 - 0.165989I$ $a = -0.710101 + 0.918474I$ $b = -0.41486 + 1.98531I$	$4.81841 - 3.85595I$	$-6.08635 - 0.91025I$
$u = 1.304940 + 0.539231I$ $a = -1.87452 + 0.09300I$ $b = -2.77139 + 0.03406I$	$-0.92374 - 11.08000I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.304940 - 0.539231I$ $a = -1.87452 - 0.09300I$ $b = -2.77139 - 0.03406I$	$-0.92374 + 11.08000I$	0
$u = 0.30461 + 1.40894I$ $a = 0.27126 - 1.65775I$ $b = 0.441333 - 0.860845I$	$3.07969 + 4.56052I$	0
$u = 0.30461 - 1.40894I$ $a = 0.27126 + 1.65775I$ $b = 0.441333 + 0.860845I$	$3.07969 - 4.56052I$	0
$u = 1.46886$ $a = 1.02985$ $b = 2.27927$	-3.63763	0
$u = -1.49431$ $a = 1.54404$ $b = 2.46779$	-5.18675	0
$u = 0.497810 + 0.063527I$ $a = 0.87402 + 1.99616I$ $b = -1.37070 + 0.92345I$	$3.89177 - 8.53814I$	$-3.62373 + 7.72914I$
$u = 0.497810 - 0.063527I$ $a = 0.87402 - 1.99616I$ $b = -1.37070 - 0.92345I$	$3.89177 + 8.53814I$	$-3.62373 - 7.72914I$
$u = 0.494312 + 0.040027I$ $a = 2.43418 + 0.46723I$ $b = 1.124850 - 0.800183I$	$5.25863 + 3.20086I$	$-1.28928 - 2.92765I$
$u = 0.494312 - 0.040027I$ $a = 2.43418 - 0.46723I$ $b = 1.124850 + 0.800183I$	$5.25863 - 3.20086I$	$-1.28928 + 2.92765I$

III. $I_3^u = \langle b-a-1,\ a^2-3a+1,\ u+1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} a \\ a+1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a-1 \\ a \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} a-1 \\ a \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ 2a-2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} a-2 \\ a-1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 2 \\ a \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a \\ -a \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\ \ 0.381966$ $b=\ \ 1.38197$	-3.28987	-17.0000
$u=-1.00000$ $a=\ \ 2.61803$ $b=\ \ 3.61803$	-3.28987	-17.0000

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -1.00000$	-1.64493	-6.00000

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u+1)(u^{39}-21u^{38}+\cdots+16u-1)$ $\cdot(u^{167}+71u^{166}+\cdots+2794905u+88209)$
c_2	$((u-1)^2)(u+1)(u^{39}+u^{38}+\cdots+2u-1)$ $\cdot(u^{167}-3u^{166}+\cdots-1611u-297)$
c_3	$(u+1)(u^2+u-1)(u^{39}-2u^{38}+\cdots+u-1)(u^{167}-u^{166}+\cdots+9u-1)$
c_4	$(u+1)(u^2+u-1)(u^{39}-2u^{38}+\cdots-6u^2-1)$ $\cdot(u^{167}+u^{166}+\cdots+286094u+26963)$
c_5	$((u+1)^3)(u^{39}-2u^{38}+\cdots-2u+1)$ $\cdot(u^{167}-4u^{166}+\cdots-98117u+118061)$
c_6	$((u+1)^3)(u^{39}-u^{38}+\cdots+2u+1)(u^{167}-3u^{166}+\cdots-1611u-297)$
c_7	$u(u-1)^2(u^{39}+5u^{38}+\cdots-9u-1)$ $\cdot(u^{167}-2u^{166}+\cdots+46140u+5847)$
c_8	$(u+1)(u^2-u-1)(u^{39}+8u^{38}+\cdots+13u+1)$ $\cdot(u^{167}-5u^{166}+\cdots-30593750u+2687500)$
c_9	$(u-1)(u^2-u-1)(u^{39}+11u^{37}+\cdots-14u+1)$ $\cdot(u^{167}+9u^{166}+\cdots-1286138u-711596)$
c_{10}	$(u+1)(u^2-u-1)(u^{39}+2u^{38}+\cdots+6u^2+1)$ $\cdot(u^{167}+u^{166}+\cdots+286094u+26963)$
c_{11}	$u(u+1)^2(u^{39}-5u^{38}+\cdots-9u+1)$ $\cdot(u^{167}-2u^{166}+\cdots+46140u+5847)$
c_{12}	$u^3(u^{39}-4u^{38}+\cdots+u-5)(u^{167}+17u^{166}+\cdots-36u-12)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^3)(y^{39}-5y^{38}+\cdots-16y-1)$ $\cdot(y^{167}+53y^{166}+\cdots-16946980639767y-7780827681)$
c_2, c_6	$((y-1)^3)(y^{39}-21y^{38}+\cdots+16y-1)$ $\cdot(y^{167}-71y^{166}+\cdots+2794905y-88209)$
c_3	$(y-1)(y^2-3y+1)(y^{39}+22y^{38}+\cdots+21y-1)$ $\cdot(y^{167}+19y^{166}+\cdots+903y-1)$
c_4, c_{10}	$(y-1)(y^2-3y+1)(y^{39}-18y^{38}+\cdots-12y-1)$ $\cdot(y^{167}-109y^{166}+\cdots+67092980862y-727003369)$
c_5	$((y-1)^3)(y^{39}-2y^{38}+\cdots-46y-1)$ $\cdot(y^{167}+16y^{166}+\cdots-734586387985y-13938399721)$
c_7, c_{11}	$y(y-1)^2(y^{39}-15y^{38}+\cdots+31y-1)$ $\cdot(y^{167}-86y^{166}+\cdots+1156461642y-34187409)$
c_8	$(y-1)(y^2-3y+1)(y^{39}+10y^{38}+\cdots+127y-1)$ $\cdot(y^{167}-17y^{166}+\cdots+606399335937500y-7222656250000)$
c_9	$(y-1)(y^2-3y+1)(y^{39}+22y^{38}+\cdots+32y-1)$ $\cdot(y^{167}+55y^{166}+\cdots-11009677597860y-506368867216)$
c_{12}	$y^3(y^{39}-20y^{38}+\cdots-2749y-25)(y^{167}-29y^{166}+\cdots+6408y-144)$