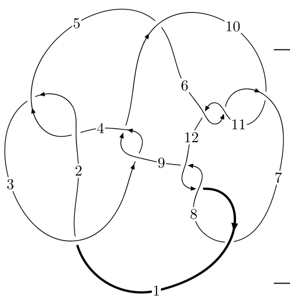
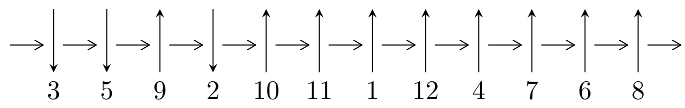
$12a_{0150}$ ($K12a_{0150}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^{35} + 13u^{34} + \cdots + 16b - 7,\ -17u^{35} - 37u^{34} + \cdots + 64a + 19,\ u^{36} + 19u^{34} + \cdots - 5u^2 - 1\rangle$$

$$\begin{aligned} I_2^u = \langle &6.38800 \times 10^{30}u^{55} - 1.52613 \times 10^{31}u^{54} + \cdots + 5.64156 \times 10^{30}b - 1.61757 \times 10^{32}, \\ &- 2.85017 \times 10^{32}u^{55} + 2.45748 \times 10^{32}u^{54} + \cdots + 9.59066 \times 10^{31}a + 2.82390 \times 10^{33}, \\ &u^{56} - 2u^{55} + \cdots - 56u + 17\rangle \end{aligned}$$

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

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

$$I_5^u = \langle b,\ u^3 + a + u + 1,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 105 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. $\boldsymbol{I_1^u = \langle -u^{35} + 13u^{34} + \cdots + 16b - 7,\ -17u^{35} - 37u^{34} + \cdots + 64a + 19,\ u^{36} + 19u^{34} + \cdots - 5u^2 - 1 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.265625u^{35} + 0.578125u^{34} + \cdots - 5.60938u - 0.296875 \\ 0.0625000u^{35} - 0.812500u^{34} + \cdots - 0.937500u + 0.437500 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 + 2u \\ -\frac{1}{8}u^{34} - \frac{9}{4}u^{32} + \cdots + u + \frac{1}{8} \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.453125u^{35} - 0.109375u^{34} + \cdots - 5.67188u + 0.0156250 \\ 0.187500u^{35} + 0.812500u^{34} + \cdots - 0.812500u - 0.687500 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.234375u^{35} - 0.328125u^{34} + \cdots - 4.64063u - 0.453125 \\ \frac{1}{4}u^{35} + \frac{3}{8}u^{34} + \cdots - \frac{5}{4}u - \frac{1}{8} \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ -\frac{1}{8}u^{34} - \frac{9}{4}u^{32} + \cdots + u + \frac{1}{8} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ \frac{1}{8}u^{35} + \frac{9}{4}u^{33} + \cdots - 3u^2 - \frac{1}{8}u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{187}{128}u^{35} + \frac{159}{128}u^{34} + \cdots + \frac{2051}{128}u + \frac{391}{128}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} + 16u^{35} + \cdots + 1009u + 16$
c_2, c_4	$u^{36} - 4u^{35} + \cdots + 41u - 4$
c_3, c_9	$u^{36} - 3u^{35} + \cdots - 200u + 32$
c_5	$u^{36} + 6u^{35} + \cdots - 1024u - 256$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$u^{36} + 19u^{34} + \cdots - 5u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + 12y^{35} + \cdots - 838433y + 256$
c_2, c_4	$y^{36} - 16y^{35} + \cdots - 1009y + 16$
c_3, c_9	$y^{36} - 21y^{35} + \cdots - 13632y + 1024$
c_5	$y^{36} - 10y^{35} + \cdots + 1277952y + 65536$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^{36} + 38y^{35} + \cdots + 10y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.799527 + 0.176704I$ $a = -2.18880 - 0.45142I$ $b = 1.268070 - 0.575288I$	$4.74793 - 7.85320I$	$10.04645 + 6.82462I$
$u = -0.799527 - 0.176704I$ $a = -2.18880 + 0.45142I$ $b = 1.268070 + 0.575288I$	$4.74793 + 7.85320I$	$10.04645 - 6.82462I$
$u = -0.800607 + 0.101659I$ $a = 2.31721 + 0.28975I$ $b = -1.291650 + 0.333161I$	$6.52211 - 2.11667I$	$12.90027 + 1.65144I$
$u = -0.800607 - 0.101659I$ $a = 2.31721 - 0.28975I$ $b = -1.291650 - 0.333161I$	$6.52211 + 2.11667I$	$12.90027 - 1.65144I$
$u = 0.185932 + 1.257960I$ $a = -1.049650 + 0.171429I$ $b = 1.49538 - 0.38047I$	$-1.32995 - 0.96493I$	$1.34412 - 1.32210I$
$u = 0.185932 - 1.257960I$ $a = -1.049650 - 0.171429I$ $b = 1.49538 + 0.38047I$	$-1.32995 + 0.96493I$	$1.34412 + 1.32210I$
$u = 0.707581 + 0.074386I$ $a = -0.078771 + 0.776564I$ $b = 0.233551 - 0.999375I$	$1.47492 + 2.13531I$	$9.68335 - 3.80042I$
$u = 0.707581 - 0.074386I$ $a = -0.078771 - 0.776564I$ $b = 0.233551 + 0.999375I$	$1.47492 - 2.13531I$	$9.68335 + 3.80042I$
$u = 0.256428 + 1.268940I$ $a = 1.158250 - 0.431595I$ $b = -1.50604 + 0.08197I$	$-0.50515 + 5.47281I$	$3.56359 - 6.08643I$
$u = 0.256428 - 1.268940I$ $a = 1.158250 + 0.431595I$ $b = -1.50604 - 0.08197I$	$-0.50515 - 5.47281I$	$3.56359 + 6.08643I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.655018$ $a=-3.09255$ $b=\ \ 0.837842$	0.0745611	12.4420
$u=-0.270723+1.357970I$ $a=-0.434177-0.095111I$ $b=-0.105956-1.152130I$	$-6.77626-4.69556I$	0
$u=-0.270723-1.357970I$ $a=-0.434177+0.095111I$ $b=-0.105956+1.152130I$	$-6.77626+4.69556I$	0
$u=\ \ 0.432384+0.427628I$ $a=-0.414829+0.874160I$ $b=\ \ 1.078680-0.178305I$	$1.50887-1.02448I$	$9.47604-1.44360I$
$u=\ \ 0.432384-0.427628I$ $a=-0.414829-0.874160I$ $b=\ \ 1.078680+0.178305I$	$1.50887+1.02448I$	$9.47604+1.44360I$
$u=\ \ 0.257005+0.526031I$ $a=\ \ 0.362281-0.956728I$ $b=-1.160170-0.273905I$	$1.25861+3.83246I$	$8.43096-7.69033I$
$u=\ \ 0.257005-0.526031I$ $a=\ \ 0.362281+0.956728I$ $b=-1.160170+0.273905I$	$1.25861-3.83246I$	$8.43096+7.69033I$
$u=\ \ 0.29960+1.38694I$ $a=-1.67352+0.92125I$ $b=\ \ 1.085350+0.310979I$	$-9.07301+7.01583I$	0
$u=\ \ 0.29960-1.38694I$ $a=-1.67352-0.92125I$ $b=\ \ 1.085350-0.310979I$	$-9.07301-7.01583I$	0
$u=-0.07865+1.42029I$ $a=-0.398304-0.466774I$ $b=\ \ 0.718949-0.847255I$	$-9.22257-2.95016I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.07865 - 1.42029I$ $a = -0.398304 + 0.466774I$ $b = 0.718949 + 0.847255I$	$-9.22257 + 2.95016I$	0
$u = -0.32955 + 1.39003I$ $a = 0.471381 - 0.002675I$ $b = 0.450280 + 1.163260I$	$-7.96782 - 9.82231I$	0
$u = -0.32955 - 1.39003I$ $a = 0.471381 + 0.002675I$ $b = 0.450280 - 1.163260I$	$-7.96782 + 9.82231I$	0
$u = 0.36777 + 1.38101I$ $a = 1.29940 - 1.07583I$ $b = -1.31910 - 0.56226I$	$-2.87873 + 10.65860I$	0
$u = 0.36777 - 1.38101I$ $a = 1.29940 + 1.07583I$ $b = -1.31910 + 0.56226I$	$-2.87873 - 10.65860I$	0
$u = 0.02175 + 1.45011I$ $a = 0.585925 + 0.756135I$ $b = -0.821813 + 0.809606I$	$-12.81680 + 1.42112I$	0
$u = 0.02175 - 1.45011I$ $a = 0.585925 - 0.756135I$ $b = -0.821813 - 0.809606I$	$-12.81680 - 1.42112I$	0
$u = 0.38371 + 1.41444I$ $a = -1.25562 + 1.21879I$ $b = 1.26488 + 0.73094I$	$-5.3479 + 16.6018I$	0
$u = 0.38371 - 1.41444I$ $a = -1.25562 - 1.21879I$ $b = 1.26488 - 0.73094I$	$-5.3479 - 16.6018I$	0
$u = -0.25014 + 1.49745I$ $a = 0.196746 - 0.200364I$ $b = 0.623960 + 0.219536I$	$-10.76370 - 4.55503I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.25014-1.49745I$ $a=\ 0.196746+0.200364I$ $b=\ 0.623960-0.219536I$	$-10.76370+4.55503I$	0
$u=-0.11074+1.53043I$ $a=\ 0.086477+0.589795I$ $b=-0.884099+0.624341I$	$-12.5319-6.8373I$	0
$u=-0.11074-1.53043I$ $a=\ 0.086477-0.589795I$ $b=-0.884099-0.624341I$	$-12.5319+6.8373I$	0
$u=\ 0.361676$ $a=-0.636362$ $b=\ 0.360388$	0.595912	16.6720
$u=-0.125553+0.232110I$ $a=\ 0.13047-2.31300I$ $b=-0.229374-0.520047I$	$-1.60873-0.57225I$	$-2.19533+2.55248I$
$u=-0.125553-0.232110I$ $a=\ 0.13047+2.31300I$ $b=-0.229374+0.520047I$	$-1.60873+0.57225I$	$-2.19533-2.55248I$

II. $\boldsymbol{I_2^u = \langle 6.39 \times 10^{30} u^{55} - 1.53 \times 10^{31} u^{54} + \cdots + 5.64 \times 10^{30} b - 1.62 \times 10^{32},\ -2.85 \times 10^{32} u^{55} + 2.46 \times 10^{32} u^{54} + \cdots + 9.59 \times 10^{31} a + 2.82 \times 10^{33},\ u^{56} - 2u^{55} + \cdots - 56u + 17 \rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 2.97182u^{55} - 2.56237u^{54} + \cdots + 38.6228u - 29.4443 \\ -1.13231u^{55} + 2.70516u^{54} + \cdots - 67.9361u + 28.6724 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.37378u^{55} - 2.05523u^{54} + \cdots + 22.6847u - 10.9962 \\ 0.0862068u^{55} + 0.310131u^{54} + \cdots + 3.93944u - 6.65451 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.196643u^{55} + 1.09359u^{54} + \cdots - 62.9416u + 28.7866 \\ -1.02772u^{55} + 2.29208u^{54} + \cdots - 38.3434u + 7.61269 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.813487u^{55} + 2.59847u^{54} + \cdots - 136.206u + 65.7422 \\ -0.104046u^{55} + 1.60090u^{54} + \cdots - 20.3881u - 5.41843 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.275698u^{55} + 0.0983321u^{54} + \cdots - 35.0403u + 22.8321 \\ 1.64947u^{55} - 2.15356u^{54} + \cdots + 59.7250u - 33.8282 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.53683u^{55} - 2.73915u^{54} + \cdots + 92.2768u - 48.0224 \\ -0.453063u^{55} - 0.408827u^{54} + \cdots + 7.39298u + 6.68686 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4.98882u^{55} - 5.95966u^{54} + \cdots + 21.5498u + 4.33068$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{28} + 13u^{27} + \cdots - 7u + 1)^2$
c_2, c_4	$(u^{28} - 3u^{27} + \cdots - u + 1)^2$
c_3, c_9	$(u^{28} + u^{27} + \cdots + 8u + 4)^2$
c_5	$(u^{28} - 2u^{27} + \cdots - 22u + 17)^2$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$u^{56} - 2u^{55} + \cdots - 56u + 17$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{28} + 7y^{27} + \cdots - 61y + 1)^2$
c_2, c_4	$(y^{28} - 13y^{27} + \cdots + 7y + 1)^2$
c_3, c_9	$(y^{28} - 15y^{27} + \cdots - 88y + 16)^2$
c_5	$(y^{28} - 10y^{27} + \cdots - 246y + 289)^2$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^{56} + 42y^{55} + \cdots - 824y + 289$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.699981+0.709842I$ $a=-0.932475-0.375700I$ $b=\ \ 0.910131-0.395689I$	$-4.85759-4.24816I$	$2.11355+6.97904I$
$u=-0.699981-0.709842I$ $a=-0.932475+0.375700I$ $b=\ \ 0.910131+0.395689I$	$-4.85759+4.24816I$	$2.11355-6.97904I$
$u=-0.405666+0.949027I$ $a=-1.45587-0.57456I$ $b=\ \ 0.387411-0.832689I$	$-5.14204+1.40144I$	$0.-1.74630I$
$u=-0.405666-0.949027I$ $a=-1.45587+0.57456I$ $b=\ \ 0.387411+0.832689I$	$-5.14204-1.40144I$	$0.+1.74630I$
$u=\ \ 0.910837+0.220913I$ $a=\ \ 2.06125-0.14881I$ $b=-1.241130-0.661367I$	$-0.16281+11.95450I$	$5.04116-8.32221I$
$u=\ \ 0.910837-0.220913I$ $a=\ \ 2.06125+0.14881I$ $b=-1.241130+0.661367I$	$-0.16281-11.95450I$	$5.04116+8.32221I$
$u=-0.779705+0.500231I$ $a=\ \ 0.591475+0.474962I$ $b=-0.802767-0.244916I$	$-4.25756-0.90628I$	$4.59768-1.67094I$
$u=-0.779705-0.500231I$ $a=\ \ 0.591475-0.474962I$ $b=-0.802767+0.244916I$	$-4.25756+0.90628I$	$4.59768+1.67094I$
$u=-0.352136+1.047700I$ $a=\ \ 0.764728+0.330487I$ $b=-1.280370-0.446560I$	$2.10501+3.62399I$	0
$u=-0.352136-1.047700I$ $a=\ \ 0.764728-0.330487I$ $b=-1.280370+0.446560I$	$2.10501-3.62399I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.864130 + 0.172111I$ $a = -2.23241 + 0.01733I$ $b = 1.262900 + 0.460239I$	$2.03115 + 6.23266I$	$8.14975 - 4.30079I$
$u = 0.864130 - 0.172111I$ $a = -2.23241 - 0.01733I$ $b = 1.262900 - 0.460239I$	$2.03115 - 6.23266I$	$8.14975 + 4.30079I$
$u = 0.384208 + 0.766757I$ $a = -1.93610 - 0.04267I$ $b = 0.611767 - 0.458091I$	$-5.69220 + 0.64414I$	$-0.353981 + 1.306831I$
$u = 0.384208 - 0.766757I$ $a = -1.93610 + 0.04267I$ $b = 0.611767 + 0.458091I$	$-5.69220 - 0.64414I$	$-0.353981 - 1.306831I$
$u = -0.797014 + 0.216598I$ $a = 0.436400 + 0.813553I$ $b = -0.387502 - 1.047530I$	$-2.87718 - 5.75423I$	$3.89302 + 5.96655I$
$u = -0.797014 - 0.216598I$ $a = 0.436400 - 0.813553I$ $b = -0.387502 + 1.047530I$	$-2.87718 + 5.75423I$	$3.89302 - 5.96655I$
$u = 0.468961 + 1.091940I$ $a = 0.904715 - 0.796492I$ $b = -1.147340 + 0.340892I$	$-0.76674 - 1.47542I$	0
$u = 0.468961 - 1.091940I$ $a = 0.904715 + 0.796492I$ $b = -1.147340 - 0.340892I$	$-0.76674 + 1.47542I$	0
$u = 0.564404 + 1.054850I$ $a = -0.731475 + 0.538685I$ $b = 1.175470 - 0.589984I$	$-2.69009 - 6.77427I$	0
$u = 0.564404 - 1.054850I$ $a = -0.731475 - 0.538685I$ $b = 1.175470 + 0.589984I$	$-2.69009 + 6.77427I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.358032+1.151180I$ $a=-0.994941-0.598679I$ $b=\ \ 1.312590+0.177484I$	$3.32245-2.08114I$	0
$u=-0.358032-1.151180I$ $a=-0.994941+0.598679I$ $b=\ \ 1.312590-0.177484I$	$3.32245+2.08114I$	0
$u=\ \ 0.054476+1.226080I$ $a=\ \ 0.070708-0.771010I$ $b=-0.376924-0.508425I$	$-3.06671+1.43304I$	0
$u=\ \ 0.054476-1.226080I$ $a=\ \ 0.070708+0.771010I$ $b=-0.376924+0.508425I$	$-3.06671-1.43304I$	0
$u=\ \ 0.727104+0.234303I$ $a=\ \ 2.86700-0.21576I$ $b=-0.907099-0.252760I$	$-3.94179+3.28147I$	$5.23266-4.99392I$
$u=\ \ 0.727104-0.234303I$ $a=\ \ 2.86700+0.21576I$ $b=-0.907099+0.252760I$	$-3.94179-3.28147I$	$5.23266+4.99392I$
$u=\ \ 0.251940+1.214590I$ $a=\ \ 0.623338-0.426042I$ $b=-0.017123-0.961380I$	$-1.96777+1.34593I$	0
$u=\ \ 0.251940-1.214590I$ $a=\ \ 0.623338+0.426042I$ $b=-0.017123+0.961380I$	$-1.96777-1.34593I$	0
$u=\ \ 0.065420+1.241340I$ $a=-1.01865+2.07478I$ $b=\ \ 0.611767+0.458091I$	$-5.69220-0.64414I$	0
$u=\ \ 0.065420-1.241340I$ $a=-1.01865-2.07478I$ $b=\ \ 0.611767-0.458091I$	$-5.69220+0.64414I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.173270+1.242230I$ $a=\ \ 0.908391+1.036680I$ $b=\ \ 0.387411+0.832689I$	$-5.14204-1.40144I$	0
$u=-0.173270-1.242230I$ $a=\ \ 0.908391-1.036680I$ $b=\ \ 0.387411-0.832689I$	$-5.14204+1.40144I$	0
$u=\ \ 0.691070+0.028094I$ $a=-2.45000+0.76218I$ $b=\ \ 1.312590+0.177484I$	$3.32245-2.08114I$	$9.79595+2.78862I$
$u=\ \ 0.691070-0.028094I$ $a=-2.45000-0.76218I$ $b=\ \ 1.312590-0.177484I$	$3.32245+2.08114I$	$9.79595-2.78862I$
$u=-0.254280+1.286460I$ $a=\ \ 1.76847+1.19991I$ $b=-0.907099+0.252760I$	$-3.94179-3.28147I$	0
$u=-0.254280-1.286460I$ $a=\ \ 1.76847-1.19991I$ $b=-0.907099-0.252760I$	$-3.94179+3.28147I$	0
$u=\ \ 0.286920+1.282550I$ $a=\ \ 0.74733-1.53936I$ $b=-1.147340-0.340892I$	$-0.76674+1.47542I$	0
$u=\ \ 0.286920-1.282550I$ $a=\ \ 0.74733+1.53936I$ $b=-1.147340+0.340892I$	$-0.76674-1.47542I$	0
$u=-0.636644+0.157884I$ $a=-0.333609-1.000990I$ $b=-0.017123+0.961380I$	$-1.96777-1.34593I$	$5.91932+0.66126I$
$u=-0.636644-0.157884I$ $a=-0.333609+1.000990I$ $b=-0.017123-0.961380I$	$-1.96777+1.34593I$	$5.91932-0.66126I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.291088 + 1.313610I$ $a = -0.713814 + 0.243496I$ $b = -0.387502 + 1.047530I$	$-2.87718 + 5.75423I$	0
$u = 0.291088 - 1.313610I$ $a = -0.713814 - 0.243496I$ $b = -0.387502 - 1.047530I$	$-2.87718 - 5.75423I$	0
$u = -0.405124 + 0.480475I$ $a = 1.058260 - 0.685910I$ $b = -0.376924 + 0.508425I$	$-3.06671 - 1.43304I$	$5.58225 + 4.97603I$
$u = -0.405124 - 0.480475I$ $a = 1.058260 + 0.685910I$ $b = -0.376924 - 0.508425I$	$-3.06671 + 1.43304I$	$5.58225 - 4.97603I$
$u = -0.342351 + 1.329390I$ $a = -1.15193 - 1.31181I$ $b = 1.262900 - 0.460239I$	$2.03115 - 6.23266I$	0
$u = -0.342351 - 1.329390I$ $a = -1.15193 + 1.31181I$ $b = 1.262900 + 0.460239I$	$2.03115 + 6.23266I$	0
$u = 0.254428 + 1.359510I$ $a = -0.57743 + 1.67051I$ $b = 1.175470 + 0.589984I$	$-2.69009 + 6.77427I$	0
$u = 0.254428 - 1.359510I$ $a = -0.57743 - 1.67051I$ $b = 1.175470 - 0.589984I$	$-2.69009 - 6.77427I$	0
$u = 0.591934 + 0.141506I$ $a = 2.29632 - 1.21300I$ $b = -1.280370 - 0.446560I$	$2.10501 + 3.62399I$	$8.20871 - 2.76186I$
$u = 0.591934 - 0.141506I$ $a = 2.29632 + 1.21300I$ $b = -1.280370 + 0.446560I$	$2.10501 - 3.62399I$	$8.20871 + 2.76186I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.003051 + 1.410480I$ $a = 0.649306 + 0.505190I$ $b = 0.910131 + 0.395689I$	$-4.85759 + 4.24816I$	0
$u = -0.003051 - 1.410480I$ $a = 0.649306 - 0.505190I$ $b = 0.910131 - 0.395689I$	$-4.85759 - 4.24816I$	0
$u = 0.136440 + 1.404460I$ $a = -0.588564 - 0.154002I$ $b = -0.802767 + 0.244916I$	$-4.25756 + 0.90628I$	0
$u = 0.136440 - 1.404460I$ $a = -0.588564 + 0.154002I$ $b = -0.802767 - 0.244916I$	$-4.25756 - 0.90628I$	0
$u = -0.33611 + 1.37531I$ $a = 1.07544 + 1.49026I$ $b = -1.241130 + 0.661367I$	$-0.16281 - 11.95450I$	0
$u = -0.33611 - 1.37531I$ $a = 1.07544 - 1.49026I$ $b = -1.241130 - 0.661367I$	$-0.16281 + 11.95450I$	0

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

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} \frac{1}{2}u^2 + \frac{1}{2}u + \frac{3}{2} \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1 \\ -u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{2}u^2 + \frac{1}{2}u + \frac{3}{2} \\ 0 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u \\ u^2 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{7}{4}u^2 + \frac{21}{4}u + \frac{9}{4}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^3$
c_3, c_9	y^3
c_5	$y^3 + y^2 + 13y - 4$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$y^3 + 4y^2 + 4y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.22670 + 1.46771I$ $a = 0.335258 + 0.401127I$ $b = 0$	$-11.08570 - 5.13794I$	$-2.62004 + 6.54094I$
$u = -0.22670 - 1.46771I$ $a = 0.335258 - 0.401127I$ $b = 0$	$-11.08570 + 5.13794I$	$-2.62004 - 6.54094I$
$u = 0.453398$ $a = 1.82948$ $b = 0$	-0.857735	4.99010

IV. $\boldsymbol{I_4^u = \langle a^2 + 2au + 2b + 2a + 2u,\ a^3 + 2a^2u + 2a^2 + 2au + 2u - 2,\ u^2 + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2au + 2a + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -0.867423 + 0.622301I$ $b = 1.307140 - 0.215080I$	$-0.26574 + 2.82812I$	$3.50976 - 2.97945I$
$u = 1.000000I$ $a = 0.622301 - 0.867423I$ $b = -1.307140 - 0.215080I$	$-0.26574 - 2.82812I$	$3.50976 + 2.97945I$
$u = 1.000000I$ $a = -1.75488 - 1.75488I$ $b = -0.569840I$	-4.40332	$-3.01951 + 0.I$
$u = -1.000000I$ $a = -0.867423 - 0.622301I$ $b = 1.307140 + 0.215080I$	$-0.26574 - 2.82812I$	$3.50976 + 2.97945I$
$u = -1.000000I$ $a = 0.622301 + 0.867423I$ $b = -1.307140 + 0.215080I$	$-0.26574 + 2.82812I$	$3.50976 - 2.97945I$
$u = -1.000000I$ $a = -1.75488 + 1.75488I$ $b = 0.569840I$	-4.40332	$-3.01951 + 0.I$

V. $\boldsymbol{I_5^u = \langle b,\ u^3 + a + u + 1,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -u^3 - u - 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^3 - u - 1 \\ 0 \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} u^3 + 2u \\ -u^3 - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = -0.500000 - 0.866025I$ $b = 0$	$-4.93480 - 2.02988I$	$1.0000 + 3.46410I$
$u = -0.621744 - 0.440597I$ $a = -0.500000 + 0.866025I$ $b = 0$	$-4.93480 + 2.02988I$	$1.0000 - 3.46410I$
$u = 0.121744 + 1.306620I$ $a = -0.500000 + 0.866025I$ $b = 0$	$-4.93480 + 2.02988I$	$1.00000 - 3.46410I$
$u = 0.121744 - 1.306620I$ $a = -0.500000 - 0.866025I$ $b = 0$	$-4.93480 - 2.02988I$	$1.00000 + 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^7)(u^3-u^2+2u-1)^2(u^{28}+13u^{27}+\cdots-7u+1)^2$ $\cdot(u^{36}+16u^{35}+\cdots+1009u+16)$
c_2	$((u-1)^7)(u^3+u^2-1)^2(u^{28}-3u^{27}+\cdots-u+1)^2$ $\cdot(u^{36}-4u^{35}+\cdots+41u-4)$
c_3, c_9	$u^7(u^6-3u^4+2u^2+1)(u^{28}+u^{27}+\cdots+8u+4)^2$ $\cdot(u^{36}-3u^{35}+\cdots-200u+32)$
c_4	$((u+1)^7)(u^3-u^2+1)^2(u^{28}-3u^{27}+\cdots-u+1)^2$ $\cdot(u^{36}-4u^{35}+\cdots+41u-4)$
c_5	$u^6(u^2-u+1)^2(u^3+3u^2+5u+2)(u^{28}-2u^{27}+\cdots-22u+17)^2$ $\cdot(u^{36}+6u^{35}+\cdots-1024u-256)$
c_6, c_7, c_8	$(u^2+1)^3(u^3+2u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{36}+19u^{34}+\cdots-5u^2-1)(u^{56}-2u^{55}+\cdots-56u+17)$
c_{10}, c_{11}, c_{12}	$(u^2+1)^3(u^3+2u-1)(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{36}+19u^{34}+\cdots-5u^2-1)(u^{56}-2u^{55}+\cdots-56u+17)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^7)(y^3+3y^2+2y-1)^2(y^{28}+7y^{27}+\cdots-61y+1)^2$ $\cdot\,(y^{36}+12y^{35}+\cdots-838433y+256)$
c_2, c_4	$((y-1)^7)(y^3-y^2+2y-1)^2(y^{28}-13y^{27}+\cdots+7y+1)^2$ $\cdot\,(y^{36}-16y^{35}+\cdots-1009y+16)$
c_3, c_9	$y^7(y^3-3y^2+2y+1)^2(y^{28}-15y^{27}+\cdots-88y+16)^2$ $\cdot\,(y^{36}-21y^{35}+\cdots-13632y+1024)$
c_5	$y^6(y^2+y+1)^2(y^3+y^2+13y-4)(y^{28}-10y^{27}+\cdots-246y+289)^2$ $\cdot\,(y^{36}-10y^{35}+\cdots+1277952y+65536)$
c_6, c_7, c_8 c_{10}, c_{11}, c_{12}	$(y+1)^6(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot\,(y^{36}+38y^{35}+\cdots+10y+1)(y^{56}+42y^{55}+\cdots-824y+289)$