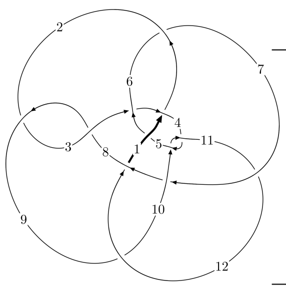
$12a_{1152}$ ($K12a_{1152}$)



A knot diagram[1]

Linearized knot diagam

$$\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow\uparrow\rightarrow\downarrow\rightarrow\uparrow\rightarrow$$

4 9 6 11 1 2 10 3 12 5 7 8

Solving Sequence

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

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

$$\begin{aligned}
I^u_1 = \langle & -5.18767 \times 10^{139} u^{59} + 6.91498 \times 10^{140} u^{58} + \cdots + 5.70794 \times 10^{142} b - 4.09699 \times 10^{143}, \\
& -1.69716 \times 10^{143} u^{59} + 7.21637 \times 10^{143} u^{58} + \cdots + 5.53670 \times 10^{144} a + 2.20134 \times 10^{145}, \\
& u^{60} - 5u^{59} + \cdots + 1080u - 388 \rangle \\
I^u_2 = \langle & 1.80510 \times 10^{155} a u^{81} - 1.97549 \times 10^{154} u^{81} + \cdots + 1.30403 \times 10^{156} a + 5.44654 \times 10^{156}, \\
& 3.60091 \times 10^{156} a u^{81} + 2.53871 \times 10^{156} u^{81} + \cdots + 1.70950 \times 10^{158} a - 1.03794 \times 10^{158}, \\
& u^{82} + 2u^{81} + \cdots + 3u + 17 \rangle \\
I^u_3 = \langle & -9.59808 \times 10^{21} u^{51} + 4.27636 \times 10^{20} u^{50} + \cdots + 1.61406 \times 10^{20} b + 5.52488 \times 10^{21}, \\
& -4.99289 \times 10^{18} u^{51} - 9.77290 \times 10^{20} u^{50} + \cdots + 1.61406 \times 10^{20} a - 5.20434 \times 10^{21}, \\
& u^{52} + 12u^{50} + \cdots + 16u^2 + 1 \rangle \\
I^u_4 = \langle & b - u - 2,\ a - u,\ u^2 + u + 1 \rangle \\
I^u_5 = \langle & b + 3u - 2,\ a + u,\ u^2 - u + 1 \rangle \\
I^u_6 = \langle & -2u^3 - 3u^2 + 3b - 3u - 1,\ 4u^3 + 6u^2 + 3a + 6u - 1,\ u^4 + 2u^3 + 3u^2 + 2u + 1 \rangle \\
I^u_7 = \langle & 4u^3 - 6u^2 + 3b + 9u - 5,\ 2u^3 - 3u^2 + a + 4u - 1,\ u^4 - 2u^3 + 3u^2 - 2u + 1 \rangle \\
I^u_8 = \langle & b - u,\ a,\ u^2 + u + 1 \rangle \\
I^u_9 = \langle & b + u + 1,\ a - 1,\ u^2 + u + 1 \rangle
\end{aligned}$$

$$I^v_1 = \langle a,\ b^2 - b + 1,\ v + 1 \rangle$$

[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`).

* 10 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 294 representations.

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I^u_1 = \langle -5.19\times 10^{139}u^{59} + 6.91\times 10^{140}u^{58} + \cdots + 5.71\times 10^{142}b - 4.10\times 10^{143},\ -1.70\times 10^{143}u^{59} + 7.22\times 10^{143}u^{58} + \cdots + 5.54\times 10^{144}a + 2.20\times 10^{145},\ u^{60} - 5u^{59} + \cdots + 1080u - 388\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.0306529u^{59} - 0.130337u^{58} + \cdots - 4.49260u - 3.97590\\0.000908851u^{59} - 0.0121147u^{58} + \cdots - 16.7204u + 7.17771\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.0291167u^{59} + 0.173061u^{58} + \cdots + 55.3140u - 16.6802\\-0.00711532u^{59} + 0.0485395u^{58} + \cdots + 22.8821u - 6.56340\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.0414282u^{59} - 0.173898u^{58} + \cdots - 0.281038u - 8.05200\\0.00626255u^{59} - 0.0383628u^{58} + \cdots - 19.4695u + 7.10429\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.0149334u^{59} - 0.0977080u^{58} + \cdots - 41.4306u + 15.7688\\0.0105054u^{59} - 0.0633023u^{58} + \cdots - 22.1161u + 7.13426\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.00442802u^{59} - 0.0344057u^{58} + \cdots - 19.3145u + 8.63453\\0.0105054u^{59} - 0.0633023u^{58} + \cdots - 22.1161u + 7.13426\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-0.0443936u^{59} + 0.179043u^{58} + \cdots - 14.6753u + 15.9101\\-0.00517660u^{59} + 0.0333438u^{58} + \cdots + 14.3685u - 5.35765\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0.0422065u^{59} - 0.254284u^{58} + \cdots - 87.5145u + 30.4184\\-0.00436150u^{59} - 0.00212137u^{58} + \cdots - 19.7603u + 10.9710\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0.0715267u^{59} - 0.304662u^{58} + \cdots - 20.9895u - 5.59872\\0.0150082u^{59} - 0.0735745u^{58} + \cdots - 14.2922u + 4.17681\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0862410u^{59} - 0.304241u^{58} + \cdots + 50.6490u - 39.3628$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{60} - 3u^{59} + \cdots - 8u + 1$
c_2, c_8	$u^{60} - 5u^{59} + \cdots + 1080u - 388$
c_3, c_9	$u^{60} + 3u^{59} + \cdots + 8u + 1$
c_4, c_{10}	$u^{60} + 5u^{59} + \cdots - 1080u - 388$
c_5, c_{11}	$u^{60} + u^{59} + \cdots + 16u + 1$
c_6, c_{12}	$u^{60} - u^{59} + \cdots - 16u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7 c_9	$y^{60} - 19y^{59} + \cdots + 260y^2 + 1$
c_2, c_4, c_8 c_{10}	$y^{60} + 25y^{59} + \cdots - 621648y + 150544$
c_5, c_6, c_{11} c_{12}	$y^{60} - 5y^{59} + \cdots - 124y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.171441 + 0.980559I$ $a = 0.47348 + 1.49828I$ $b = -0.511578 + 0.392997I$	$-0.52610 + 2.40940I$	$-6.07207 - 1.80479I$
$u = 0.171441 - 0.980559I$ $a = 0.47348 - 1.49828I$ $b = -0.511578 - 0.392997I$	$-0.52610 - 2.40940I$	$-6.07207 + 1.80479I$
$u = 0.558795 + 0.812413I$ $a = 0.190007 - 0.772991I$ $b = 1.32190 - 0.62082I$	$2.92685 - 2.53562I$	$7.77144 + 4.11547I$
$u = 0.558795 - 0.812413I$ $a = 0.190007 + 0.772991I$ $b = 1.32190 + 0.62082I$	$2.92685 + 2.53562I$	$7.77144 - 4.11547I$
$u = 0.387995 + 0.880914I$ $a = 0.696357 - 1.223310I$ $b = 0.137839 - 0.769925I$	$4.19283 - 1.62322I$	$9.54675 + 5.56587I$
$u = 0.387995 - 0.880914I$ $a = 0.696357 + 1.223310I$ $b = 0.137839 + 0.769925I$	$4.19283 + 1.62322I$	$9.54675 - 5.56587I$
$u = -0.325924 + 1.003870I$ $a = 0.472335 + 0.390385I$ $b = -0.264203 + 0.121523I$	$2.32702I$	$0. - 2.41446I$
$u = -0.325924 - 1.003870I$ $a = 0.472335 - 0.390385I$ $b = -0.264203 - 0.121523I$	$- 2.32702I$	$0. + 2.41446I$
$u = -0.451519 + 0.956785I$ $a = 0.126006 + 0.783615I$ $b = 1.29360 + 1.08825I$	$1.50162 + 6.66973I$	$6.52482 - 9.31381I$
$u = -0.451519 - 0.956785I$ $a = 0.126006 - 0.783615I$ $b = 1.29360 - 1.08825I$	$1.50162 - 6.66973I$	$6.52482 + 9.31381I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.405466 + 1.042930I$ $a = 0.300272 + 1.091020I$ $b = 0.575186 + 0.966227I$	$1.77104 - 0.45619I$	$4.17621 + 0.I$
$u = -0.405466 - 1.042930I$ $a = 0.300272 - 1.091020I$ $b = 0.575186 - 0.966227I$	$1.77104 + 0.45619I$	$4.17621 + 0.I$
$u = 1.058290 + 0.365526I$ $a = -1.030290 - 0.473394I$ $b = -0.97651 - 1.14607I$	$-7.37408 + 4.86636I$	$-7.60593 - 5.88900I$
$u = 1.058290 - 0.365526I$ $a = -1.030290 + 0.473394I$ $b = -0.97651 + 1.14607I$	$-7.37408 - 4.86636I$	$-7.60593 + 5.88900I$
$u = -1.13290$ $a = -0.870261$ $b = -1.73957$	-0.677721	-12.9010
$u = 0.183453 + 0.841795I$ $a = -2.34687 + 0.35556I$ $b = -0.221990 - 0.196071I$	$-0.95944 - 4.24881I$	$-12.3767 + 15.9835I$
$u = 0.183453 - 0.841795I$ $a = -2.34687 - 0.35556I$ $b = -0.221990 + 0.196071I$	$-0.95944 + 4.24881I$	$-12.3767 - 15.9835I$
$u = 0.485164 + 1.033450I$ $a = -0.436484 - 0.472405I$ $b = 0.50964 - 1.98747I$	$-1.50162 - 6.66973I$	$-6.52482 + 9.31381I$
$u = 0.485164 - 1.033450I$ $a = -0.436484 + 0.472405I$ $b = 0.50964 + 1.98747I$	$-1.50162 + 6.66973I$	$-6.52482 - 9.31381I$
$u = -0.693664 + 0.378260I$ $a = 0.313816 - 0.578350I$ $b = -0.732368 - 0.379929I$	$-1.64774 + 0.88135I$	$-5.13712 - 2.80459I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.693664 - 0.378260I$ $a = 0.313816 + 0.578350I$ $b = -0.732368 + 0.379929I$	$-1.64774 - 0.88135I$	$-5.13712 + 2.80459I$
$u = 1.168760 + 0.338858I$ $a = -0.072999 + 0.185626I$ $b = -0.917703 + 0.097618I$	$-5.39058 - 4.68678I$	0
$u = 1.168760 - 0.338858I$ $a = -0.072999 - 0.185626I$ $b = -0.917703 - 0.097618I$	$-5.39058 + 4.68678I$	0
$u = 0.531474 + 0.568901I$ $a = 0.968713 + 0.737512I$ $b = -1.10882 + 1.28934I$	$-2.92685 + 2.53562I$	$-7.77144 - 4.11547I$
$u = 0.531474 - 0.568901I$ $a = 0.968713 - 0.737512I$ $b = -1.10882 - 1.28934I$	$-2.92685 - 2.53562I$	$-7.77144 + 4.11547I$
$u = -1.165740 + 0.366483I$ $a = -1.038980 + 0.534131I$ $b = -0.85758 + 1.68385I$	$-\ 9.35734I$	0
$u = -1.165740 - 0.366483I$ $a = -1.038980 - 0.534131I$ $b = -0.85758 - 1.68385I$	$9.35734I$	0
$u = 0.418269 + 1.150070I$ $a = -0.197115 - 0.307278I$ $b = -0.32483 - 1.53729I$	$-1.77104 - 0.45619I$	0
$u = 0.418269 - 1.150070I$ $a = -0.197115 + 0.307278I$ $b = -0.32483 + 1.53729I$	$-1.77104 + 0.45619I$	0
$u = -0.499563 + 1.124770I$ $a = -0.175796 + 0.500266I$ $b = 0.320548 + 1.310060I$	$0.62611 + 3.69051I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.499563-1.124770I$ $a=-0.175796-0.500266I$ $b=\ 0.320548-1.310060I$	$0.62611-3.69051I$	0
$u=\ 1.193310+0.369826I$ $a=-0.992840-0.546634I$ $b=-0.67757-1.65324I$	$-2.9032+15.8984I$	0
$u=\ 1.193310-0.369826I$ $a=-0.992840+0.546634I$ $b=-0.67757+1.65324I$	$-2.9032-15.8984I$	0
$u=\ 0.076532+0.729921I$ $a=\ 1.110150+0.160313I$ $b=-2.61620+0.41046I$	$-4.19283-1.62322I$	$-9.54675+5.56587I$
$u=\ 0.076532-0.729921I$ $a=\ 1.110150-0.160313I$ $b=-2.61620-0.41046I$	$-4.19283+1.62322I$	$-9.54675-5.56587I$
$u=\ 0.426858+1.216580I$ $a=-0.177926-1.247300I$ $b=\ 1.34612-0.61746I$	$5.39058-4.68678I$	0
$u=\ 0.426858-1.216580I$ $a=-0.177926+1.247300I$ $b=\ 1.34612+0.61746I$	$5.39058+4.68678I$	0
$u=\ 1.30496$ $a=\ 0.771561$ $b=\ 1.53977$	0.677721	0
$u=-0.419010+1.272320I$ $a=\ 0.33802-1.40935I$ $b=-1.55921-0.25601I$	$3.80470+5.01319I$	0
$u=-0.419010-1.272320I$ $a=\ 0.33802+1.40935I$ $b=-1.55921+0.25601I$	$3.80470-5.01319I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ \ 0.638473+1.214620I$ $a=\ \ 0.318696+1.236200I$ $b=-1.62056+1.22848I$	$-4.66730-10.91270I$	0
$u=\ \ 0.638473-1.214620I$ $a=\ \ 0.318696-1.236200I$ $b=-1.62056-1.22848I$	$-4.66730+10.91270I$	0
$u=-0.68285+1.26801I$ $a=\ \ 0.384451-1.115090I$ $b=-1.76927-1.61342I$	$2.9032+15.8984I$	0
$u=-0.68285-1.26801I$ $a=\ \ 0.384451+1.115090I$ $b=-1.76927+1.61342I$	$2.9032-15.8984I$	0
$u=\ \ 0.70126+1.27551I$ $a=\ \ 0.353379+1.069320I$ $b=-1.66303+1.70470I$	$-22.5793I$	0
$u=\ \ 0.70126-1.27551I$ $a=\ \ 0.353379-1.069320I$ $b=-1.66303-1.70470I$	$22.5793I$	0
$u=\ \ 0.534199+0.091360I$ $a=\ \ 1.18320-0.81880I$ $b=\ \ 0.697826-0.138251I$	$1.64774-0.88135I$	$5.13712+2.80459I$
$u=\ \ 0.534199-0.091360I$ $a=\ \ 1.18320+0.81880I$ $b=\ \ 0.697826+0.138251I$	$1.64774+0.88135I$	$5.13712-2.80459I$
$u=-0.01808+1.47880I$ $a=-0.348814-0.858886I$ $b=\ \ 0.209024+0.308470I$	$7.37408-4.86636I$	0
$u=-0.01808-1.47880I$ $a=-0.348814+0.858886I$ $b=\ \ 0.209024-0.308470I$	$7.37408+4.86636I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.55731 + 1.40236I$ $a = 0.018229 + 0.513943I$ $b = 0.402492 + 0.280917I$	$0.52610 + 2.40940I$	0
$u = -0.55731 - 1.40236I$ $a = 0.018229 - 0.513943I$ $b = 0.402492 - 0.280917I$	$0.52610 - 2.40940I$	0
$u = -1.54326 + 0.35635I$ $a = 0.448619 + 0.184902I$ $b = 1.164850 + 0.142212I$	$-3.80470 + 5.01319I$	0
$u = -1.54326 - 0.35635I$ $a = 0.448619 - 0.184902I$ $b = 1.164850 - 0.142212I$	$-3.80470 - 5.01319I$	0
$u = -0.396011 + 0.040226I$ $a = 2.17668 - 0.32964I$ $b = 0.333963 + 0.215813I$	$-0.62611 + 3.69051I$	$0.95572 - 2.76128I$
$u = -0.396011 - 0.040226I$ $a = 2.17668 + 0.32964I$ $b = 0.333963 - 0.215813I$	$-0.62611 - 3.69051I$	$0.95572 + 2.76128I$
$u = 0.02608 + 1.60351I$ $a = -0.359218 + 0.687159I$ $b = 0.290176 - 0.296519I$	$4.66730 + 10.91270I$	0
$u = 0.02608 - 1.60351I$ $a = -0.359218 - 0.687159I$ $b = 0.290176 + 0.296519I$	$4.66730 - 10.91270I$	0
$u = 1.01201 + 1.26987I$ $a = 0.122324 - 0.440312I$ $b = 0.818168 - 0.292603I$	$0.95944 - 4.24881I$	0
$u = 1.01201 - 1.26987I$ $a = 0.122324 + 0.440312I$ $b = 0.818168 + 0.292603I$	$0.95944 + 4.24881I$	0

II. $\boldsymbol{I^u_2 = \langle 1.81 \times 10^{155} a u^{81} - 1.98 \times 10^{154} u^{81} + \cdots + 1.30 \times 10^{156} a + 5.45 \times 10^{156},\ 3.60 \times 10^{156} a u^{81} + 2.54 \times 10^{156} u^{81} + \cdots + 1.71 \times 10^{158} a - 1.04 \times 10^{158},\ u^{82} + 2u^{81} + \cdots + 3u + 17 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a \\ -2.70404au^{81} + 0.295928u^{81} + \cdots - 19.5344a - 81.5892 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -4.12970au^{81} + 2.42356u^{81} + \cdots + 53.9418a + 38.0299 \\ -1.28203au^{81} - 4.12970u^{81} + \cdots - 13.8792a + 53.9418 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1.22538au^{81} + 1.27892u^{81} + \cdots + 7.60655a + 31.9199 \\ -2.05030au^{81} + 0.430644u^{81} + \cdots - 14.6627a - 58.9256 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.760460au^{81} - 7.38349u^{81} + \cdots - 55.7454a + 27.2603 \\ -0.388621au^{81} - 1.07456u^{81} + \cdots + 45.9686a + 34.4955 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1.14908au^{81} - 6.30894u^{81} + \cdots - 101.714a - 7.23520 \\ -0.388621au^{81} - 1.07456u^{81} + \cdots + 45.9686a + 34.4955 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1.14390au^{81} - 1.21147u^{81} + \cdots + 107.252a - 135.729 \\ 0.789134au^{81} + 1.12918u^{81} + \cdots + 18.2675a + 70.2037 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4.88743au^{81} - 5.97440u^{81} + \cdots - 58.5806a + 62.1850 \\ 1.03661au^{81} + 4.70169u^{81} + \cdots + 6.25213a - 61.4613 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -2.44439au^{81} + 1.22792u^{81} + \cdots - 91.6513a + 190.784 \\ -0.828478au^{81} - 2.76844u^{81} + \cdots - 36.1956a - 76.5142 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -8.16898u^{81} + 9.33236u^{80} + \cdots - 385.089u + 971.642$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{164} - 10u^{163} + \cdots - 3168u + 121$
c_2, c_{10}	$(u^{82} + 2u^{81} + \cdots + 3u + 17)^2$
c_3, c_9	$u^{164} + 10u^{163} + \cdots + 3168u + 121$
c_4, c_8	$(u^{82} - 2u^{81} + \cdots - 3u + 17)^2$
c_5, c_{11}	$u^{164} - 2u^{163} + \cdots + 4005408u + 594932$
c_6, c_{12}	$u^{164} + 2u^{163} + \cdots - 4005408u + 594932$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7 c_9	$y^{164} + 10y^{163} + \cdots + 146410y + 14641$
c_2, c_4, c_8 c_{10}	$(y^{82} + 44y^{81} + \cdots + 9205y + 289)^2$
c_5, c_6, c_{11} c_{12}	$y^{164} + 12y^{163} + \cdots - 35272014267168y + 353944084624$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.260326 + 0.930612I$ $a = -0.529905 - 1.201830I$ $b = 0.509455 - 0.750195I$	$3.18723 + 1.08607I$	0
$u = -0.260326 + 0.930612I$ $a = 1.04357 + 2.16309I$ $b = 1.302220 + 0.240158I$	$3.18723 + 1.08607I$	0
$u = -0.260326 - 0.930612I$ $a = -0.529905 + 1.201830I$ $b = 0.509455 + 0.750195I$	$3.18723 - 1.08607I$	0
$u = -0.260326 - 0.930612I$ $a = 1.04357 - 2.16309I$ $b = 1.302220 - 0.240158I$	$3.18723 - 1.08607I$	0
$u = 0.795295 + 0.678771I$ $a = 1.264300 + 0.334143I$ $b = -0.13908 + 1.74400I$	$0.78288 + 2.53049I$	0
$u = 0.795295 + 0.678771I$ $a = -0.187665 + 0.077391I$ $b = 0.147730 - 0.563391I$	$0.78288 + 2.53049I$	0
$u = 0.795295 - 0.678771I$ $a = 1.264300 - 0.334143I$ $b = -0.13908 - 1.74400I$	$0.78288 - 2.53049I$	0
$u = 0.795295 - 0.678771I$ $a = -0.187665 - 0.077391I$ $b = 0.147730 + 0.563391I$	$0.78288 - 2.53049I$	0
$u = 0.832893 + 0.686008I$ $a = 1.086330 + 0.266537I$ $b = -0.61394 + 1.32289I$	$-1.28336 + 1.67590I$	0
$u = 0.832893 + 0.686008I$ $a = 0.516895 + 0.527491I$ $b = 0.032729 + 0.931073I$	$-1.28336 + 1.67590I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.832893 - 0.686008I$ $a = 1.086330 - 0.266537I$ $b = -0.61394 - 1.32289I$	$-1.28336 - 1.67590I$	0
$u = 0.832893 - 0.686008I$ $a = 0.516895 - 0.527491I$ $b = 0.032729 - 0.931073I$	$-1.28336 - 1.67590I$	0
$u = 0.404430 + 0.798414I$ $a = 0.33003 + 1.68392I$ $b = -0.27008 + 1.75242I$	$-6.50706 - 1.77206I$	0
$u = 0.404430 + 0.798414I$ $a = -1.77076 + 0.01887I$ $b = 0.418133 - 0.781070I$	$-6.50706 - 1.77206I$	0
$u = 0.404430 - 0.798414I$ $a = 0.33003 - 1.68392I$ $b = -0.27008 - 1.75242I$	$-6.50706 + 1.77206I$	0
$u = 0.404430 - 0.798414I$ $a = -1.77076 - 0.01887I$ $b = 0.418133 + 0.781070I$	$-6.50706 + 1.77206I$	0
$u = -0.579986 + 0.668663I$ $a = -0.177658 + 0.869629I$ $b = 0.466091 + 1.328520I$	$-0.82988 + 2.31019I$	0
$u = -0.579986 + 0.668663I$ $a = 0.440198 - 0.607892I$ $b = -0.847871 - 0.017789I$	$-0.82988 + 2.31019I$	0
$u = -0.579986 - 0.668663I$ $a = -0.177658 - 0.869629I$ $b = 0.466091 - 1.328520I$	$-0.82988 - 2.31019I$	0
$u = -0.579986 - 0.668663I$ $a = 0.440198 + 0.607892I$ $b = -0.847871 + 0.017789I$	$-0.82988 - 2.31019I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.404427 + 1.061140I$ $a = -0.616827 - 1.002060I$ $b = 0.53814 - 1.87628I$	$1.06546 - 6.91683I$	0
$u = 0.404427 + 1.061140I$ $a = -0.699917 - 0.343578I$ $b = 1.95998 - 0.55916I$	$1.06546 - 6.91683I$	0
$u = 0.404427 - 1.061140I$ $a = -0.616827 + 1.002060I$ $b = 0.53814 + 1.87628I$	$1.06546 + 6.91683I$	0
$u = 0.404427 - 1.061140I$ $a = -0.699917 + 0.343578I$ $b = 1.95998 + 0.55916I$	$1.06546 + 6.91683I$	0
$u = -0.318655 + 1.094000I$ $a = 0.276202 - 1.061040I$ $b = -0.050616 - 1.147980I$	$3.04869 + 3.73406I$	0
$u = -0.318655 + 1.094000I$ $a = -1.42150 + 0.85142I$ $b = 1.30298 + 1.56754I$	$3.04869 + 3.73406I$	0
$u = -0.318655 - 1.094000I$ $a = 0.276202 + 1.061040I$ $b = -0.050616 + 1.147980I$	$3.04869 - 3.73406I$	0
$u = -0.318655 - 1.094000I$ $a = -1.42150 - 0.85142I$ $b = 1.30298 - 1.56754I$	$3.04869 - 3.73406I$	0
$u = 0.577776 + 0.983584I$ $a = -0.290311 - 0.921390I$ $b = 0.63079 - 2.20132I$	$-0.33510 - 6.83537I$	0
$u = 0.577776 + 0.983584I$ $a = -0.643116 - 0.716732I$ $b = 1.01905 - 1.16032I$	$-0.33510 - 6.83537I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.577776 - 0.983584I$ $a = -0.290311 + 0.921390I$ $b = 0.63079 + 2.20132I$	$-0.33510 + 6.83537I$	0
$u = 0.577776 - 0.983584I$ $a = -0.643116 + 0.716732I$ $b = 1.01905 + 1.16032I$	$-0.33510 + 6.83537I$	0
$u = -0.379759 + 1.078640I$ $a = 0.835657 + 0.831303I$ $b = 0.786670 - 0.446187I$	$2.22524 - 4.28972I$	0
$u = -0.379759 + 1.078640I$ $a = -0.005460 - 0.294307I$ $b = -1.24578 - 1.48137I$	$2.22524 - 4.28972I$	0
$u = -0.379759 - 1.078640I$ $a = 0.835657 - 0.831303I$ $b = 0.786670 + 0.446187I$	$2.22524 + 4.28972I$	0
$u = -0.379759 - 1.078640I$ $a = -0.005460 + 0.294307I$ $b = -1.24578 + 1.48137I$	$2.22524 + 4.28972I$	0
$u = 0.260884 + 1.134970I$ $a = 0.802242 - 1.015030I$ $b = 0.614651 + 0.049104I$	$5.53005 + 0.17570I$	0
$u = 0.260884 + 1.134970I$ $a = -0.170890 + 0.681945I$ $b = 0.257251 + 1.056090I$	$5.53005 + 0.17570I$	0
$u = 0.260884 - 1.134970I$ $a = 0.802242 + 1.015030I$ $b = 0.614651 - 0.049104I$	$5.53005 - 0.17570I$	0
$u = 0.260884 - 1.134970I$ $a = -0.170890 - 0.681945I$ $b = 0.257251 - 1.056090I$	$5.53005 - 0.17570I$	0

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.630576 + 0.544116I$ $a = 0.220481 - 0.936431I$ $b = -1.100490 - 0.198671I$	$-0.78288 + 2.53049I$	0
$u = -0.630576 + 0.544116I$ $a = -0.851811 + 0.924584I$ $b = 0.14845 + 2.41546I$	$-0.78288 + 2.53049I$	0
$u = -0.630576 - 0.544116I$ $a = 0.220481 + 0.936431I$ $b = -1.100490 + 0.198671I$	$-0.78288 - 2.53049I$	0
$u = -0.630576 - 0.544116I$ $a = -0.851811 - 0.924584I$ $b = 0.14845 - 2.41546I$	$-0.78288 - 2.53049I$	0
$u = 0.130723 + 0.795632I$ $a = -1.83529 - 0.41086I$ $b = 0.558051 + 0.084930I$	$0.50411 - 4.27864I$	$14.2403 + 14.0784I$
$u = 0.130723 + 0.795632I$ $a = -1.30629 - 2.08598I$ $b = -0.12803 - 1.61726I$	$0.50411 - 4.27864I$	$14.2403 + 14.0784I$
$u = 0.130723 - 0.795632I$ $a = -1.83529 + 0.41086I$ $b = 0.558051 - 0.084930I$	$0.50411 + 4.27864I$	$14.2403 - 14.0784I$
$u = 0.130723 - 0.795632I$ $a = -1.30629 + 2.08598I$ $b = -0.12803 + 1.61726I$	$0.50411 + 4.27864I$	$14.2403 - 14.0784I$
$u = -0.419306 + 1.125730I$ $a = -0.643444 + 0.928322I$ $b = 0.54773 + 1.87583I$	$-1.10685 + 11.51070I$	0
$u = -0.419306 + 1.125730I$ $a = -0.549839 + 0.281996I$ $b = 2.61295 + 0.76729I$	$-1.10685 + 11.51070I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.419306-1.125730I$ $a=-0.643444-0.928322I$ $b=\ \ 0.54773-1.87583I$	$-1.10685-11.51070I$	0
$u=-0.419306-1.125730I$ $a=-0.549839-0.281996I$ $b=\ \ 2.61295-0.76729I$	$-1.10685-11.51070I$	0
$u=-0.542499+0.583183I$ $a=\ \ 0.28429+1.44388I$ $b=\ \ 0.04672+2.19509I$	$-4.18066+8.83759I$	$-5.00985-11.72883I$
$u=-0.542499+0.583183I$ $a=-0.85299+1.29718I$ $b=\ \ 0.455466+0.663551I$	$-4.18066+8.83759I$	$-5.00985-11.72883I$
$u=-0.542499-0.583183I$ $a=\ \ 0.28429-1.44388I$ $b=\ \ 0.04672-2.19509I$	$-4.18066-8.83759I$	$-5.00985+11.72883I$
$u=-0.542499-0.583183I$ $a=-0.85299-1.29718I$ $b=\ \ 0.455466-0.663551I$	$-4.18066-8.83759I$	$-5.00985+11.72883I$
$u=-0.522662+1.103870I$ $a=-0.548525+0.848795I$ $b=\ \ 0.64265+1.80590I$	$-2.22524+4.28972I$	0
$u=-0.522662+1.103870I$ $a=-0.457540+0.514224I$ $b=\ \ 1.84925+1.73180I$	$-2.22524+4.28972I$	0
$u=-0.522662-1.103870I$ $a=-0.548525-0.848795I$ $b=\ \ 0.64265-1.80590I$	$-2.22524-4.28972I$	0
$u=-0.522662-1.103870I$ $a=-0.457540-0.514224I$ $b=\ \ 1.84925-1.73180I$	$-2.22524-4.28972I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.528867+1.104130I$ $a=-0.133321-0.697062I$ $b=\ \ 0.02355-1.65707I$	$1.10685+11.51070I$	0
$u=-0.528867+1.104130I$ $a=-0.58697+1.32636I$ $b=\ \ 1.31585+1.79935I$	$1.10685+11.51070I$	0
$u=-0.528867-1.104130I$ $a=-0.133321+0.697062I$ $b=\ \ 0.02355+1.65707I$	$1.10685-11.51070I$	0
$u=-0.528867-1.104130I$ $a=-0.58697-1.32636I$ $b=\ \ 1.31585-1.79935I$	$1.10685-11.51070I$	0
$u=\ \ 0.742142+0.216072I$ $a=-0.693587-0.260151I$ $b=\ \ 0.422008-0.104110I$	$0.82034+3.45064I$	$4.51101-0.56063I$
$u=\ \ 0.742142+0.216072I$ $a=\ \ 1.40347+0.97849I$ $b=\ \ 0.49689+1.38278I$	$0.82034+3.45064I$	$4.51101-0.56063I$
$u=\ \ 0.742142-0.216072I$ $a=-0.693587+0.260151I$ $b=\ \ 0.422008+0.104110I$	$0.82034-3.45064I$	$4.51101+0.56063I$
$u=\ \ 0.742142-0.216072I$ $a=\ \ 1.40347-0.97849I$ $b=\ \ 0.49689-1.38278I$	$0.82034-3.45064I$	$4.51101+0.56063I$
$u=\ \ 1.160190+0.414579I$ $a=\ \ 0.462084-0.868271I$ $b=\ \ 1.02551-1.38253I$	$-0.50411-4.27864I$	0
$u=\ \ 1.160190+0.414579I$ $a=\ \ 0.037748+0.440985I$ $b=-0.177349+0.314091I$	$-0.50411-4.27864I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.160190 - 0.414579I$ $a = 0.462084 + 0.868271I$ $b = 1.02551 + 1.38253I$	$-0.50411 + 4.27864I$	0
$u = 1.160190 - 0.414579I$ $a = 0.037748 - 0.440985I$ $b = -0.177349 - 0.314091I$	$-0.50411 + 4.27864I$	0
$u = 0.760358 + 0.002684I$ $a = -0.93396 + 1.22178I$ $b = -0.704640 + 0.625872I$	$-2.75590 - 8.75497I$	$-4.00486 + 9.28787I$
$u = 0.760358 + 0.002684I$ $a = -1.17346 - 1.18677I$ $b = -0.65567 - 2.30431I$	$-2.75590 - 8.75497I$	$-4.00486 + 9.28787I$
$u = 0.760358 - 0.002684I$ $a = -0.93396 - 1.22178I$ $b = -0.704640 - 0.625872I$	$-2.75590 + 8.75497I$	$-4.00486 - 9.28787I$
$u = 0.760358 - 0.002684I$ $a = -1.17346 + 1.18677I$ $b = -0.65567 + 2.30431I$	$-2.75590 + 8.75497I$	$-4.00486 - 9.28787I$
$u = 0.398094 + 1.183740I$ $a = 0.790527 - 0.839344I$ $b = 0.605804 + 0.448273I$	$4.71965 - 0.26776I$	0
$u = 0.398094 + 1.183740I$ $a = 0.058198 + 0.411477I$ $b = -0.644796 + 1.014450I$	$4.71965 - 0.26776I$	0
$u = 0.398094 - 1.183740I$ $a = 0.790527 + 0.839344I$ $b = 0.605804 - 0.448273I$	$4.71965 + 0.26776I$	0
$u = 0.398094 - 1.183740I$ $a = 0.058198 - 0.411477I$ $b = -0.644796 - 1.014450I$	$4.71965 + 0.26776I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.780516+0.975804I$ $a=1.094250-0.038354I$ $b=-0.77369-1.21208I$	$-3.04869-3.73406I$	0
$u=-0.780516+0.975804I$ $a=0.418873-0.437959I$ $b=-0.104042-0.725092I$	$-3.04869-3.73406I$	0
$u=-0.780516-0.975804I$ $a=1.094250+0.038354I$ $b=-0.77369+1.21208I$	$-3.04869+3.73406I$	0
$u=-0.780516-0.975804I$ $a=0.418873+0.437959I$ $b=-0.104042+0.725092I$	$-3.04869+3.73406I$	0
$u=0.295557+0.677695I$ $a=0.516824+0.466008I$ $b=0.468756-0.058249I$	$0.82988+2.31019I$	$3.86149-2.88090I$
$u=0.295557+0.677695I$ $a=1.54228-0.10299I$ $b=-0.342855+0.853489I$	$0.82988+2.31019I$	$3.86149-2.88090I$
$u=0.295557-0.677695I$ $a=0.516824-0.466008I$ $b=0.468756+0.058249I$	$0.82988-2.31019I$	$3.86149+2.88090I$
$u=0.295557-0.677695I$ $a=1.54228+0.10299I$ $b=-0.342855-0.853489I$	$0.82988-2.31019I$	$3.86149+2.88090I$
$u=-0.633435+0.371000I$ $a=-1.124320+0.058682I$ $b=0.737202-0.115396I$	$-1.06546-6.91683I$	$0.43421+8.50150I$
$u=-0.633435+0.371000I$ $a=1.78132-0.81155I$ $b=0.467812-1.221720I$	$-1.06546-6.91683I$	$0.43421+8.50150I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.633435-0.371000I$ $a=-1.124320-0.058682I$ $b=\ \ 0.737202+0.115396I$	$-1.06546+6.91683I$	$0.43421-8.50150I$
$u=-0.633435-0.371000I$ $a=\ \ 1.78132+0.81155I$ $b=\ \ 0.467812+1.221720I$	$-1.06546+6.91683I$	$0.43421-8.50150I$
$u=-0.097600+0.723176I$ $a=-1.43915-0.69503I$ $b=\ \ 1.151740-0.109561I$	$1.28336-1.67590I$	$8.72169+2.03818I$
$u=-0.097600+0.723176I$ $a=\ \ 1.67668-0.83110I$ $b=\ \ 0.30399-1.67361I$	$1.28336-1.67590I$	$8.72169+2.03818I$
$u=-0.097600-0.723176I$ $a=-1.43915+0.69503I$ $b=\ \ 1.151740+0.109561I$	$1.28336+1.67590I$	$8.72169-2.03818I$
$u=-0.097600-0.723176I$ $a=\ \ 1.67668+0.83110I$ $b=\ \ 0.30399+1.67361I$	$1.28336+1.67590I$	$8.72169-2.03818I$
$u=\ \ 0.544960+1.150510I$ $a=-0.582756-1.180870I$ $b=\ \ 1.48806-1.88327I$	$3.49867-8.31196I$	0
$u=\ \ 0.544960+1.150510I$ $a=\ \ 0.018563+0.590186I$ $b=-0.52299+1.59969I$	$3.49867-8.31196I$	0
$u=\ \ 0.544960-1.150510I$ $a=-0.582756+1.180870I$ $b=\ \ 1.48806+1.88327I$	$3.49867+8.31196I$	0
$u=\ \ 0.544960-1.150510I$ $a=\ \ 0.018563-0.590186I$ $b=-0.52299-1.59969I$	$3.49867+8.31196I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.701678 + 0.182233I$ $a = 1.060460 - 0.531001I$ $b = -0.07011 - 1.82820I$	$-4.71965 + 0.26776I$	$-7.84072 + 1.45696I$
$u = -0.701678 + 0.182233I$ $a = 0.83007 - 1.28104I$ $b = -0.112149 - 0.954134I$	$-4.71965 + 0.26776I$	$-7.84072 + 1.45696I$
$u = -0.701678 - 0.182233I$ $a = 1.060460 + 0.531001I$ $b = -0.07011 + 1.82820I$	$-4.71965 - 0.26776I$	$-7.84072 - 1.45696I$
$u = -0.701678 - 0.182233I$ $a = 0.83007 + 1.28104I$ $b = -0.112149 + 0.954134I$	$-4.71965 - 0.26776I$	$-7.84072 - 1.45696I$
$u = -0.349083 + 1.237040I$ $a = 0.549728 - 1.227360I$ $b = -0.952232 - 0.658300I$	$4.05260 + 5.43943I$	0
$u = -0.349083 + 1.237040I$ $a = -1.23525 - 2.13418I$ $b = -1.19887 + 1.59856I$	$4.05260 + 5.43943I$	0
$u = -0.349083 - 1.237040I$ $a = 0.549728 + 1.227360I$ $b = -0.952232 + 0.658300I$	$4.05260 - 5.43943I$	0
$u = -0.349083 - 1.237040I$ $a = -1.23525 + 2.13418I$ $b = -1.19887 - 1.59856I$	$4.05260 - 5.43943I$	0
$u = 0.490639 + 1.196390I$ $a = 0.396924 + 1.171430I$ $b = -1.00156 + 1.27551I$	$0.58726 - 13.31670I$	0
$u = 0.490639 + 1.196390I$ $a = -1.37440 + 0.78093I$ $b = -0.285684 - 1.201120I$	$0.58726 - 13.31670I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.490639 - 1.196390I$ $a = 0.396924 - 1.171430I$ $b = -1.00156 - 1.27551I$	$0.58726 + 13.31670I$	0
$u = 0.490639 - 1.196390I$ $a = -1.37440 - 0.78093I$ $b = -0.285684 + 1.201120I$	$0.58726 + 13.31670I$	0
$u = 0.432136 + 1.222390I$ $a = 0.184360 + 0.740494I$ $b = -0.245727 + 1.154470I$	$4.18066 - 8.83759I$	0
$u = 0.432136 + 1.222390I$ $a = -0.775040 - 0.989800I$ $b = 1.51112 - 1.66333I$	$4.18066 - 8.83759I$	0
$u = 0.432136 - 1.222390I$ $a = 0.184360 - 0.740494I$ $b = -0.245727 - 1.154470I$	$4.18066 + 8.83759I$	0
$u = 0.432136 - 1.222390I$ $a = -0.775040 + 0.989800I$ $b = 1.51112 + 1.66333I$	$4.18066 + 8.83759I$	0
$u = -0.120553 + 0.683347I$ $a = 1.186470 - 0.001542I$ $b = -0.11733 + 1.72391I$	$0.33510 + 6.83537I$	$2.66389 - 6.91923I$
$u = -0.120553 + 0.683347I$ $a = -1.02189 + 1.09642I$ $b = 1.50240 + 0.71171I$	$0.33510 + 6.83537I$	$2.66389 - 6.91923I$
$u = -0.120553 - 0.683347I$ $a = 1.186470 + 0.001542I$ $b = -0.11733 - 1.72391I$	$0.33510 - 6.83537I$	$2.66389 + 6.91923I$
$u = -0.120553 - 0.683347I$ $a = -1.02189 - 1.09642I$ $b = 1.50240 - 0.71171I$	$0.33510 - 6.83537I$	$2.66389 + 6.91923I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.087446 + 1.319070I$ $a = 0.823529 + 0.099698I$ $b = -2.69089 + 0.37586I$	$-3.18723 - 1.08607I$	0
$u = 0.087446 + 1.319070I$ $a = -0.393914 + 0.048276I$ $b = -0.557800 - 0.079118I$	$-3.18723 - 1.08607I$	0
$u = 0.087446 - 1.319070I$ $a = 0.823529 - 0.099698I$ $b = -2.69089 - 0.37586I$	$-3.18723 + 1.08607I$	0
$u = 0.087446 - 1.319070I$ $a = -0.393914 - 0.048276I$ $b = -0.557800 + 0.079118I$	$-3.18723 + 1.08607I$	0
$u = 0.107749 + 0.611816I$ $a = -0.422478 + 0.124663I$ $b = -1.92716 - 2.26824I$	$-5.53005 - 0.17570I$	$-5.49764 + 10.58271I$
$u = 0.107749 + 0.611816I$ $a = 1.79407 + 0.60888I$ $b = -1.279200 - 0.128681I$	$-5.53005 - 0.17570I$	$-5.49764 + 10.58271I$
$u = 0.107749 - 0.611816I$ $a = -0.422478 - 0.124663I$ $b = -1.92716 + 2.26824I$	$-5.53005 + 0.17570I$	$-5.49764 - 10.58271I$
$u = 0.107749 - 0.611816I$ $a = 1.79407 - 0.60888I$ $b = -1.279200 + 0.128681I$	$-5.53005 + 0.17570I$	$-5.49764 - 10.58271I$
$u = 0.693823 + 1.224950I$ $a = -0.402026 - 1.099940I$ $b = 1.79335 - 1.79842I$	$2.75590 - 8.75497I$	0
$u = 0.693823 + 1.224950I$ $a = 0.146878 + 0.506968I$ $b = -0.790945 + 1.005850I$	$2.75590 - 8.75497I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.693823 - 1.224950I$ $a = -0.402026 + 1.099940I$ $b = 1.79335 + 1.79842I$	$2.75590 + 8.75497I$	0
$u = 0.693823 - 1.224950I$ $a = 0.146878 - 0.506968I$ $b = -0.790945 - 1.005850I$	$2.75590 + 8.75497I$	0
$u = 0.380762 + 0.421870I$ $a = 0.769585 - 0.055529I$ $b = 0.90071 + 1.89782I$	$-0.82034 + 3.45064I$	$-4.51101 - 0.56063I$
$u = 0.380762 + 0.421870I$ $a = 2.05093 + 0.66406I$ $b = -0.505484 + 0.949802I$	$-0.82034 + 3.45064I$	$-4.51101 - 0.56063I$
$u = 0.380762 - 0.421870I$ $a = 0.769585 + 0.055529I$ $b = 0.90071 - 1.89782I$	$-0.82034 - 3.45064I$	$-4.51101 + 0.56063I$
$u = 0.380762 - 0.421870I$ $a = 2.05093 - 0.66406I$ $b = -0.505484 - 0.949802I$	$-0.82034 - 3.45064I$	$-4.51101 + 0.56063I$
$u = 0.10701 + 1.44556I$ $a = 0.488907 - 0.696187I$ $b = -0.1007210 - 0.0467363I$	$6.50706 - 1.77206I$	0
$u = 0.10701 + 1.44556I$ $a = 0.328435 + 0.641751I$ $b = -0.212340 + 0.356899I$	$6.50706 - 1.77206I$	0
$u = 0.10701 - 1.44556I$ $a = 0.488907 + 0.696187I$ $b = -0.1007210 + 0.0467363I$	$6.50706 + 1.77206I$	0
$u = 0.10701 - 1.44556I$ $a = 0.328435 - 0.641751I$ $b = -0.212340 - 0.356899I$	$6.50706 + 1.77206I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.87996+1.15242I$ $a=\ 0.032800+1.372840I$ $b=\ 2.58042+1.21564I$	$-1.10876+3.85557I$	0
$u=-0.87996+1.15242I$ $a=\ 0.130295-0.405417I$ $b=-0.873476-0.586398I$	$-1.10876+3.85557I$	0
$u=-0.87996-1.15242I$ $a=\ 0.032800-1.372840I$ $b=\ 2.58042-1.21564I$	$-1.10876-3.85557I$	0
$u=-0.87996-1.15242I$ $a=\ 0.130295+0.405417I$ $b=-0.873476+0.586398I$	$-1.10876-3.85557I$	0
$u=\ 0.38308+1.41396I$ $a=\ 1.167830+0.642824I$ $b=-2.47695+1.25278I$	$1.10876+3.85557I$	0
$u=\ 0.38308+1.41396I$ $a=-0.110997+0.397681I$ $b=-0.500360-0.220530I$	$1.10876+3.85557I$	0
$u=\ 0.38308-1.41396I$ $a=\ 1.167830-0.642824I$ $b=-2.47695-1.25278I$	$1.10876-3.85557I$	0
$u=\ 0.38308-1.41396I$ $a=-0.110997-0.397681I$ $b=-0.500360+0.220530I$	$1.10876-3.85557I$	0
$u=-0.56291+1.36548I$ $a=\ 1.206630+0.683409I$ $b=-0.10063-1.71772I$	$4.52062I$	0
$u=-0.56291+1.36548I$ $a=\ 0.241258-0.350445I$ $b=-0.547678-0.456612I$	$4.52062I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.56291 - 1.36548I$ $a = \quad 1.206630 - 0.683409I$ $b = -0.10063 + 1.71772I$	$-\,4.52062I$	0
$u = -0.56291 - 1.36548I$ $a = \quad 0.241258 + 0.350445I$ $b = -0.547678 + 0.456612I$	$-\,4.52062I$	0
$u = -0.192308 + 0.468211I$ $a = \quad 0.347167 + 0.421623I$ $b = \quad 1.20460 - 3.28670I$	$-3.49867 - 8.31196I$	$-16.6688 + 2.2002I$
$u = -0.192308 + 0.468211I$ $a = \quad 2.56979 - 0.04405I$ $b = -0.816923 - 0.856916I$	$-3.49867 - 8.31196I$	$-16.6688 + 2.2002I$
$u = -0.192308 - 0.468211I$ $a = \quad 0.347167 - 0.421623I$ $b = \quad 1.20460 + 3.28670I$	$-3.49867 + 8.31196I$	$-16.6688 - 2.2002I$
$u = -0.192308 - 0.468211I$ $a = \quad 2.56979 + 0.04405I$ $b = -0.816923 + 0.856916I$	$-3.49867 + 8.31196I$	$-16.6688 - 2.2002I$
$u = -0.75845 + 1.35195I$ $a = -0.312924 + 0.960884I$ $b = \quad 1.77255 + 1.64557I$	$-0.58726 + 13.31670I$	0
$u = -0.75845 + 1.35195I$ $a = \quad 0.200936 - 0.484407I$ $b = -0.668173 - 0.865164I$	$-0.58726 + 13.31670I$	0
$u = -0.75845 - 1.35195I$ $a = -0.312924 - 0.960884I$ $b = \quad 1.77255 - 1.64557I$	$-0.58726 - 13.31670I$	0
$u = -0.75845 - 1.35195I$ $a = \quad 0.200936 + 0.484407I$ $b = -0.668173 + 0.865164I$	$-0.58726 - 13.31670I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.73124 + 0.22465I$ $a = \quad 0.718201 - 0.374159I$ $b = \quad 1.54353 - 1.91197I$	$-4.05260 - 5.43943I$	0
$u = -1.73124 + 0.22465I$ $a = \quad 0.002827 + 0.149947I$ $b = \quad 0.191317 + 0.324352I$	$-4.05260 - 5.43943I$	0
$u = -1.73124 - 0.22465I$ $a = \quad 0.718201 + 0.374159I$ $b = \quad 1.54353 + 1.91197I$	$-4.05260 + 5.43943I$	0
$u = -1.73124 - 0.22465I$ $a = \quad 0.002827 - 0.149947I$ $b = \quad 0.191317 - 0.324352I$	$-4.05260 + 5.43943I$	0

III. $\boldsymbol{I^u_3 = \langle -9.60\times 10^{21}u^{51} + 4.28\times 10^{20}u^{50} + \cdots + 1.61\times 10^{20}b + 5.52\times 10^{21},\ -4.99\times 10^{18}u^{51} - 9.77\times 10^{20}u^{50} + \cdots + 1.61\times 10^{20}a - 5.20\times 10^{21},\ u^{52} + 12u^{50} + \cdots + 16u^2 + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}0.0309338u^{51} + 6.05487u^{50} + \cdots + 19.4003u + 32.2439\\ 59.4656u^{51} - 2.64945u^{50} + \cdots + 156.522u - 34.2298\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}22.6095u^{51} - 17.8558u^{50} + \cdots + 61.1984u - 70.2876\\ -1.43367u^{51} + 0.913557u^{50} + \cdots - 9.77366u - 12.3735\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-21.8246u^{51} + 3.95418u^{50} + \cdots - 39.6156u + 40.3069\\ 44.7304u^{51} - 2.27759u^{50} + \cdots + 119.362u - 24.0661\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-20.1119u^{51} + 37.1913u^{50} + \cdots - 57.7791u + 97.5370\\ 8.06299u^{51} - 21.8555u^{50} + \cdots + 60.4188u - 59.0159\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-28.1749u^{51} + 59.0468u^{50} + \cdots - 118.198u + 156.553\\ 8.06299u^{51} - 21.8555u^{50} + \cdots + 60.4188u - 59.0159\end{pmatrix}$$
$$a_4 = \begin{pmatrix}-30.2293u^{51} + 6.00863u^{50} + \cdots - 162.600u + 12.8359\\ -13.6621u^{51} + 4.90242u^{50} + \cdots - 40.0584u + 16.6009\end{pmatrix}$$
$$a_5 = \begin{pmatrix}20.5303u^{51} - 43.9342u^{50} + \cdots + 130.243u - 168.989\\ -38.3114u^{51} + 18.5965u^{50} + \cdots - 64.6511u + 89.1354\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}45.2012u^{51} - 38.9236u^{50} + \cdots + 170.568u - 44.1208\\ -52.8952u^{51} + 19.7867u^{50} + \cdots - 214.190u + 59.4539\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{1773276162369665601933 1}{403514257243419641 61}u^{50} + \frac{2051910608836124221604 68}{403514257243419641 61}u^{48} + \cdots + \frac{5157065449139056246983 64}{403514257243419641 61}u^2 + \frac{3501788487831336296772 2}{403514257243419641 61}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^{52} - 6u^{51} + \cdots + 14u + 1$
c_2, c_4, c_8 c_{10}	$u^{52} + 12u^{50} + \cdots + 16u^2 + 1$
c_3, c_9	$u^{52} + 6u^{51} + \cdots - 14u + 1$
c_5, c_{11}	$u^{52} - 3u^{51} + \cdots + 216u + 27$
c_6, c_{12}	$u^{52} + 3u^{51} + \cdots - 216u + 27$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7 c_9	$y^{52} - 20y^{51} + \cdots - 84y + 1$
c_2, c_4, c_8 c_{10}	$(y^{26} + 12y^{25} + \cdots + 16y + 1)^2$
c_5, c_6, c_{11} c_{12}	$y^{52} + 23y^{51} + \cdots - 16524y + 729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.330669 + 0.909999I$ $a = 0.590713 - 1.176180I$ $b = -0.275830 - 0.759180I$	$2.92863 - 1.38058I$	$0. + 8.63453I$
$u = 0.330669 - 0.909994I$ $a = 0.590713 + 1.176180I$ $b = -0.275830 + 0.759180I$	$2.92863 + 1.38058I$	$0. - 8.63453I$
$u = -0.330669 + 0.909994I$ $a = 0.72400 + 1.83150I$ $b = 0.906198 + 0.612506I$	$2.92863 + 1.38058I$	$0. - 8.63453I$
$u = -0.330669 - 0.909994I$ $a = 0.72400 - 1.83150I$ $b = 0.906198 - 0.612506I$	$2.92863 - 1.38058I$	$0. + 8.63453I$
$u = 0.182342 + 1.109850I$ $a = 0.626494 - 1.086700I$ $b = 0.626072 - 0.190069I$	$5.59430 - 0.24221I$	0
$u = 0.182342 - 1.109850I$ $a = 0.626494 + 1.086700I$ $b = 0.626072 + 0.190069I$	$5.59430 + 0.24221I$	0
$u = -0.182342 + 1.109850I$ $a = -0.041833 - 0.792028I$ $b = 0.440979 - 0.932368I$	$5.59430 + 0.24221I$	0
$u = -0.182342 - 1.109850I$ $a = -0.041833 + 0.792028I$ $b = 0.440979 + 0.932368I$	$5.59430 - 0.24221I$	0
$u = -0.027305 + 1.166910I$ $a = 0.859418 + 0.068255I$ $b = -2.51520 + 0.27341I$	$-2.92863 - 1.38058I$	0
$u = -0.027305 - 1.166910I$ $a = 0.859418 - 0.068255I$ $b = -2.51520 - 0.27341I$	$-2.92863 + 1.38058I$	0

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.027305 + 1.166910I$ $a = -0.350308 + 0.006572I$ $b = -0.997433 - 0.343946I$	$-2.92863 + 1.38058I$	0
$u = 0.027305 - 1.166910I$ $a = -0.350308 - 0.006572I$ $b = -0.997433 + 0.343946I$	$-2.92863 - 1.38058I$	0
$u = 0.721877 + 0.294421I$ $a = 1.32411 + 0.67927I$ $b = 0.354365 + 0.743069I$	$1.59061I$	$-60.10 + 0.309105I$
$u = 0.721877 - 0.294421I$ $a = 1.32411 - 0.67927I$ $b = 0.354365 - 0.743069I$	$-1.59061I$	$-60.10 - 0.309105I$
$u = -0.721877 + 0.294421I$ $a = -0.099376 - 1.101110I$ $b = -0.238112 - 1.188840I$	$-1.59061I$	$-60.10 - 0.309105I$
$u = -0.721877 - 0.294421I$ $a = -0.099376 + 1.101110I$ $b = -0.238112 + 1.188840I$	$1.59061I$	$-60.10 + 0.309105I$
$u = -0.525640 + 1.167930I$ $a = 0.082495 - 0.555573I$ $b = -0.30025 - 1.60671I$	$3.23717 + 8.39532I$	0
$u = -0.525640 - 1.167930I$ $a = 0.082495 + 0.555573I$ $b = -0.30025 + 1.60671I$	$3.23717 - 8.39532I$	0
$u = 0.525640 + 1.167930I$ $a = -0.618113 - 1.125200I$ $b = 1.46774 - 1.88106I$	$3.23717 - 8.39532I$	0
$u = 0.525640 - 1.167930I$ $a = -0.618113 + 1.125200I$ $b = 1.46774 + 1.88106I$	$3.23717 + 8.39532I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.505723 + 1.179700I$ $a = -0.361060 + 0.349966I$ $b = 0.765451 + 0.184274I$	$11.4773I$	0
$u = 0.505723 - 1.179700I$ $a = -0.361060 - 0.349966I$ $b = 0.765451 - 0.184274I$	$-11.4773I$	0
$u = -0.505723 + 1.179700I$ $a = -0.524770 + 1.087140I$ $b = 1.06182 + 1.62738I$	$-11.4773I$	0
$u = -0.505723 - 1.179700I$ $a = -0.524770 - 1.087140I$ $b = 1.06182 - 1.62738I$	$11.4773I$	0
$u = 0.360860 + 1.252980I$ $a = -0.539782 - 1.209140I$ $b = 1.043840 - 0.613789I$	$3.96844 - 5.48743I$	0
$u = 0.360860 - 1.252980I$ $a = -0.539782 + 1.209140I$ $b = 1.043840 + 0.613789I$	$3.96844 + 5.48743I$	0
$u = -0.360860 + 1.252980I$ $a = -0.74434 - 2.16378I$ $b = -1.47472 + 1.24638I$	$3.96844 + 5.48743I$	0
$u = -0.360860 - 1.252980I$ $a = -0.74434 + 2.16378I$ $b = -1.47472 - 1.24638I$	$3.96844 - 5.48743I$	0
$u = 0.463846 + 1.232850I$ $a = 0.973133 + 0.554764I$ $b = -1.88805 + 1.60693I$	$1.03054 + 3.59510I$	0
$u = 0.463846 - 1.232850I$ $a = 0.973133 - 0.554764I$ $b = -1.88805 - 1.60693I$	$1.03054 - 3.59510I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.463846 + 1.232850I$ $a = 0.284886 + 0.477702I$ $b = 0.569303 - 0.310949I$	$1.03054 - 3.59510I$	0
$u = -0.463846 - 1.232850I$ $a = 0.284886 - 0.477702I$ $b = 0.569303 + 0.310949I$	$1.03054 + 3.59510I$	0
$u = 0.767180 + 1.079350I$ $a = -0.188830 - 0.374648I$ $b = 1.039400 - 0.678148I$	$-1.03054 - 3.59510I$	0
$u = 0.767180 - 1.079350I$ $a = -0.188830 + 0.374648I$ $b = 1.039400 + 0.678148I$	$-1.03054 + 3.59510I$	0
$u = -0.767180 + 1.079350I$ $a = -0.255038 + 1.231260I$ $b = 1.76047 + 1.73834I$	$-1.03054 + 3.59510I$	0
$u = -0.767180 - 1.079350I$ $a = -0.255038 - 1.231260I$ $b = 1.76047 - 1.73834I$	$-1.03054 - 3.59510I$	0
$u = -0.031790 + 0.572504I$ $a = 1.92952 + 0.36300I$ $b = -1.369510 + 0.130223I$	$-5.59430 + 0.24221I$	$-8.84698 - 6.57492I$
$u = -0.031790 - 0.572504I$ $a = 1.92952 - 0.36300I$ $b = -1.369510 - 0.130223I$	$-5.59430 - 0.24221I$	$-8.84698 + 6.57492I$
$u = 0.031790 + 0.572504I$ $a = 1.051370 + 0.640212I$ $b = -2.09749 + 1.59760I$	$-5.59430 - 0.24221I$	$-8.84698 + 6.57492I$
$u = 0.031790 - 0.572504I$ $a = 1.051370 - 0.640212I$ $b = -2.09749 - 1.59760I$	$-5.59430 + 0.24221I$	$-8.84698 - 6.57492I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.093442 + 0.555250I$ $a = -0.472178 + 1.012490I$ $b = 1.20892 + 3.05930I$	$-3.23717 + 8.39532I$	$11.3193 - 10.3816I$
$u = 0.093442 - 0.555250I$ $a = -0.472178 - 1.012490I$ $b = 1.20892 - 3.05930I$	$-3.23717 - 8.39532I$	$11.3193 + 10.3816I$
$u = -0.093442 + 0.555250I$ $a = 2.34926 + 0.42303I$ $b = -0.712387 - 0.746501I$	$-3.23717 - 8.39532I$	$11.3193 + 10.3816I$
$u = -0.093442 - 0.555250I$ $a = 2.34926 - 0.42303I$ $b = -0.712387 + 0.746501I$	$-3.23717 + 8.39532I$	$11.3193 - 10.3816I$
$u = -0.370648 + 0.311476I$ $a = 0.84040 - 1.62115I$ $b = 0.165124 + 0.274609I$	$4.00708I$	$0. - 5.30502I$
$u = -0.370648 - 0.311476I$ $a = 0.84040 + 1.62115I$ $b = 0.165124 - 0.274609I$	$- 4.00708I$	$0. + 5.30502I$
$u = 0.370648 + 0.311476I$ $a = -0.03786 - 2.33604I$ $b = 0.557538 - 1.253490I$	$- 4.00708I$	$0. + 5.30502I$
$u = 0.370648 - 0.311476I$ $a = -0.03786 + 2.33604I$ $b = 0.557538 + 1.253490I$	$4.00708I$	$0. - 5.30502I$
$u = 1.72570 + 0.06074I$ $a = -0.0835741 - 0.0065545I$ $b = -0.317978 + 0.188319I$	$-3.96844 + 5.48743I$	0
$u = 1.72570 - 0.06074I$ $a = -0.0835741 + 0.0065545I$ $b = -0.317978 - 0.188319I$	$-3.96844 - 5.48743I$	0

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.72570 + 0.06074I$ $a = \quad 0.681256 - 0.372837I$ $b = \quad 1.71975 - 1.53033I$	$-3.96844 - 5.48743I$	0
$u = -1.72570 - 0.06074I$ $a = \quad 0.681256 + 0.372837I$ $b = \quad 1.71975 + 1.53033I$	$-3.96844 + 5.48743I$	0

IV. $I_4^u = \langle b - u - 2,\ a - u,\ u^2 + u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -16u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_5, c_7 c_8, c_9, c_{10} c_{12}	$y^2 + y + 1$
c_6, c_{11}	$y^2 - 3y + 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.500000 + 0.866025I$ $b = \quad 1.50000 + 0.86603I$	$8.11953I$	$0. - 13.85641I$
$u = -0.500000 - 0.866025I$ $a = -0.500000 - 0.866025I$ $b = \quad 1.50000 - 0.86603I$	$-8.11953I$	$0. + 13.85641I$

V. $I_5^u = \langle b + 3u - 2,\ a + u,\ u^2 - u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} -1 \\ -u - 1 \end{pmatrix}$$

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

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

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

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

$$a_4 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -u \\ -3u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 16u - 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_4, c_6, c_7 c_8, c_9, c_{10} c_{11}	$y^2 + y + 1$
c_5, c_{12}	$y^2 - 3y + 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.50000 - 2.59808I$	$-8.11953I$	$0. + 13.85641I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.50000 + 2.59808I$	$8.11953I$	$0. - 13.85641I$

VI.

$\boldsymbol{I_6^u = \langle -2u^3-3u^2+3b-3u-1,\ 4u^3+6u^2+3a+6u-1,\ u^4+2u^3+3u^2+2u+1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{4}{3}u^3 - 2u^2 - 2u + \frac{1}{3} \\ \frac{2}{3}u^3 + u^2 + u + \frac{1}{3} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{4}{3}u^3 + 4u^2 + 5u + \frac{8}{3} \\ -\frac{1}{3}u^3 - u^2 - \frac{2}{3} \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -u^3 - 2u^2 - 2u + 1 \\ \frac{4}{3}u^3 + 3u^2 + 2u + \frac{5}{3} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{1}{3}u^3 - u^2 - u - \frac{7}{3} \\ -\frac{1}{3}u^3 - u^2 - u - \frac{2}{3} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{2}{3}u^3 - \frac{5}{3} \\ -\frac{1}{3}u^3 - u^2 - u - \frac{2}{3} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{5}{3}u^3 - 4u^2 - 5u - \frac{7}{3} \\ -\frac{2}{3}u^3 - u - \frac{1}{3} \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{2}{3}u^3 - 3u^2 - 5u - \frac{10}{3} \\ -u^3 - u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^3 - 2u^2 - 2u \\ \frac{2}{3}u^3 + u^2 + u + \frac{1}{3} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{16}{3}u^3 - 8u^2 - 16u - \frac{20}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = \quad 1.00000$ $b = \quad 0$	$4.05977I$	$0. - 6.92820I$
$u = -0.500000 + 0.866025I$ $a = \quad 1.00000$ $b = \quad 0$	$4.05977I$	$0. - 6.92820I$
$u = -0.500000 - 0.866025I$ $a = \quad 1.00000$ $b = \quad 0$	$-4.05977I$	$0. + 6.92820I$
$u = -0.500000 - 0.866025I$ $a = \quad 1.00000$ $b = \quad 0$	$-4.05977I$	$0. + 6.92820I$

VII.

$$\boldsymbol{I^u_7 = \langle 4u^3-6u^2+3b+9u-5,\ 2u^3-3u^2+a+4u-1,\ u^4-2u^3+3u^2-2u+1\rangle}$$

(i) Arc colorings

$$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}-2u^3+3u^2-4u+1\\-\frac{4}{3}u^3+2u^2-3u+\frac{5}{3}\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^3-2\\-\frac{5}{3}u^3+2u^2-2u+\frac{1}{3}\end{pmatrix}$$
$$a_8 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-\frac{7}{3}u^3+3u^2-4u+\frac{2}{3}\\-2u^3+3u^2-4u+2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}\frac{5}{3}u^3-3u^2+5u-\frac{7}{3}\\\frac{2}{3}u^3-u^2+2u-\frac{4}{3}\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^3-2u^2+3u-1\\\frac{2}{3}u^3-u^2+2u-\frac{4}{3}\end{pmatrix}$$
$$a_4 = \begin{pmatrix}\frac{2}{3}u^3-u+\frac{8}{3}\\u^3-u^2+2u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}\frac{1}{3}u^3-u^2+2u-\frac{2}{3}\\\frac{1}{3}u^3+u-\frac{2}{3}\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-\frac{5}{3}u^3+2u^2-2u-\frac{5}{3}\\-\frac{4}{3}u^3+2u^2-3u+\frac{2}{3}\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{16}{3}u^3-8u^2+16u-\frac{20}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.500000 - 0.866025I$	$-4.05977I$	$0. + 6.92820I$
$u = 0.500000 + 0.866025I$ $a = -0.500000 - 0.866025I$ $b = 0.500000 - 0.866025I$	$-4.05977I$	$0. + 6.92820I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.500000 + 0.866025I$	$4.05977I$	$0. - 6.92820I$
$u = 0.500000 - 0.866025I$ $a = -0.500000 + 0.866025I$ $b = 0.500000 + 0.866025I$	$4.05977I$	$0. - 6.92820I$

VIII. $I_8^u = \langle b-u,\ a,\ u^2+u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} u \\ u+1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u-2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 0$ $b = -0.500000 + 0.866025I$	$2.02988I$	$0. - 3.46410I$
$u = -0.500000 - 0.866025I$ $a = 0$ $b = -0.500000 - 0.866025I$	$-2.02988I$	$0. + 3.46410I$

IX. $I_9^u = \langle b + u + 1,\ a - 1,\ u^2 + u + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} u \\ u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u \\ u + 1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u \\ u + 1 \end{pmatrix}$$

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=\quad 1.00000$ $b=-0.500000-0.866025I$	$2.02988I$	$0.-3.46410I$
$u=-0.500000-0.866025I$ $a=\quad 1.00000$ $b=-0.500000+0.866025I$	$-2.02988I$	$0.+3.46410I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8b + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 0.500000 + 0.866025I$	$4.05977I$	$0. - 6.92820I$
$v = -1.00000$ $a = 0$ $b = 0.500000 - 0.866025I$	$-4.05977I$	$0. + 6.92820I$

XI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_7	$u^2(u^2-u+1)^5(u^2+u+1)^3(u^{52}-6u^{51}+\cdots+14u+1)$ $\cdot(u^{60}-3u^{59}+\cdots-8u+1)$
c_2, c_8	$u^2(u^2-u+1)^3(u^2+u+1)^5(u^{52}+12u^{50}+\cdots+16u^2+1)$ $\cdot(u^{60}-5u^{59}+\cdots+1080u-388)$
c_3, c_9	$u^2(u^2-u+1)^3(u^2+u+1)^5(u^{52}+6u^{51}+\cdots-14u+1)$ $\cdot(u^{60}+3u^{59}+\cdots+8u+1)$
c_4, c_{10}	$u^2(u^2-u+1)^5(u^2+u+1)^3(u^{52}+12u^{50}+\cdots+16u^2+1)$ $\cdot(u^{60}+5u^{59}+\cdots-1080u-388)$
c_5, c_{11}	$u^4(u^2-3u+3)(u^2-u+1)(u^2+u+1)^5(u^{52}-3u^{51}+\cdots+216u+27)$ $\cdot(u^{60}+u^{59}+\cdots+16u+1)$
c_6, c_{12}	$u^4(u^2-u+1)^5(u^2+u+1)(u^2+3u+3)(u^{52}+3u^{51}+\cdots-216u+27)$ $\cdot(u^{60}-u^{59}+\cdots-16u+1)$

XII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_7 c_9	$y^2(y^2+y+1)^8(y^{52}-20y^{51}+\cdots-84y+1)$ $\cdot\,(y^{60}-19y^{59}+\cdots+260y^2+1)$
c_2, c_4, c_8 c_{10}	$y^2(y^2+y+1)^8(y^{26}+12y^{25}+\cdots+16y+1)^2$ $\cdot\,(y^{60}+25y^{59}+\cdots-621648y+150544)$
c_5, c_6, c_{11} c_{12}	$y^4(y^2-3y+9)(y^2+y+1)^6(y^{52}+23y^{51}+\cdots-16524y+729)$ $\cdot\,(y^{60}-5y^{59}+\cdots-124y+1)$