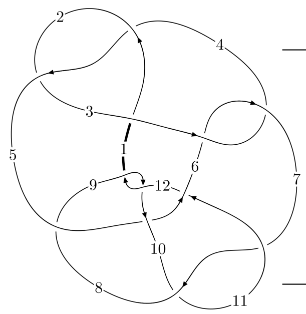
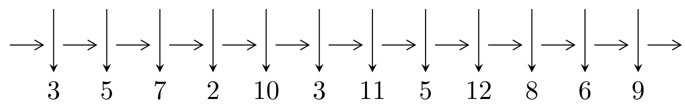
$12n_{0100}$ ($K12n_{0100}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 10938104279u^{29} + 17799069811u^{28} + \cdots + 7904547224608b + 452983966639, \\
& 3054129323185u^{29} - 6949903407647u^{28} + \cdots + 6323637796864a - 16733471682507, \\
& u^{30} - 2u^{29} + \cdots - 6u + 1\rangle \\
I_2^u = \langle & -1.61369 \times 10^{45}u^{39} - 9.40408 \times 10^{45}u^{38} + \cdots + 2.40030 \times 10^{46}b - 2.57635 \times 10^{47}, \\
& -2.95178 \times 10^{47}u^{39} - 1.77493 \times 10^{48}u^{38} + \cdots + 2.32829 \times 10^{48}a - 4.68541 \times 10^{49}, \\
& u^{40} + 6u^{39} + \cdots + 666u + 97\rangle \\
I_3^u = \langle & b,\ 5u^2 + 4a + 3u + 11,\ u^3 + 2u - 1\rangle \\
I_4^u = \langle & -12a^2u + 91a^2 - 564au + 337b + 570a + 188u + 147,\ a^3 - 5a^2u + 7a^2 + 4au + a + 2u + 1,\ u^2 + 1\rangle \\
I_5^u = \langle & b,\ u^3 + a + u,\ u^4 + u^3 + 2u^2 + 2u + 1\rangle \\
I_6^u = \langle & 3b - 2a - 2,\ 4a^2 + 2a - 11,\ u - 1\rangle
\end{aligned}$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 85 representations.

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[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

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

I.

$\boldsymbol{I_1^u = \langle 1.09\times 10^{10}u^{29} + 1.78\times 10^{10}u^{28} + \cdots + 7.90\times 10^{11}b + 4.53\times 10^{11},\ 3.05\times 10^{12}u^{29} - 6.95\times 10^{12}u^{28} + \cdots + 6.32\times 10^{12}a - 1.67\times 10^{13},\ u^{30} - 2u^{29} + \cdots - 6u + 1\rangle}$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -0.482970u^{29} + 1.09904u^{28} + \cdots - 14.1778u + 2.64618 \\ -0.0138377u^{29} - 0.0225175u^{28} + \cdots - 0.0339714u - 0.573068 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.269448u^{29} + 0.688032u^{28} + \cdots - 10.5362u + 2.79507 \\ -0.306258u^{29} + 0.647053u^{28} + \cdots + 0.353711u - 0.471726 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000122070u^{29} - 0.000366211u^{28} + \cdots + 1.99915u - 0.999878 \\ 0.000244141u^{29} - 0.000732422u^{28} + \cdots + 1.99829u + 0.000244141 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.198114u^{29} + 0.535158u^{28} + \cdots - 10.9040u + 2.84822 \\ -0.159014u^{29} + 0.310603u^{28} + \cdots - 0.146693u - 0.408378 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.116259u^{29} + 0.299479u^{28} + \cdots - 6.99440u + 1.41903 \\ -0.159014u^{29} + 0.310603u^{28} + \cdots - 0.146693u - 0.408378 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.000244141u^{29} + 0.000732422u^{28} + \cdots - 1.99829u + 0.999756 \\ -0.000488281u^{29} + 0.00146484u^{28} + \cdots - 1.99658u - 0.000488281 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.469133u^{29} + 1.12155u^{28} + \cdots - 14.1438u + 3.21925 \\ -0.0138377u^{29} - 0.0225175u^{28} + \cdots - 0.0339714u - 0.573068 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.000122070u^{29} - 0.000366211u^{28} + \cdots + 1.99915u + 0.000122070 \\ 0.000244141u^{29} - 0.000732422u^{28} + \cdots + 0.998291u + 0.000244141 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= \frac{5758735881521}{25294551187456}u^{29} - \frac{9442271879503}{25294551187456}u^{28} + \cdots + \frac{149768918108921}{25294551187456}u - \frac{343005319822011}{25294551187456}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} + 27u^{29} + \cdots + 20513u + 256$
c_2, c_4	$u^{30} - 5u^{29} + \cdots + 161u + 16$
c_3, c_6	$u^{30} + 2u^{29} + \cdots - 400u - 128$
c_5	$u^{30} - 6u^{29} + \cdots + 240u - 64$
c_7, c_9, c_{10} c_{12}	$u^{30} + 2u^{29} + \cdots + 6u + 1$
c_8, c_{11}	$4(4u^{30} + 6u^{29} + \cdots + 40u - 8)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} - 43y^{29} + \cdots - 326031937y + 65536$
c_2, c_4	$y^{30} - 27y^{29} + \cdots - 20513y + 256$
c_3, c_6	$y^{30} - 12y^{29} + \cdots - 181504y + 16384$
c_5	$y^{30} + 16y^{29} + \cdots - 44800y + 4096$
c_7, c_9, c_{10} c_{12}	$y^{30} + 12y^{29} + \cdots + 20y + 1$
c_8, c_{11}	$16(16y^{30} - 220y^{29} + \cdots - 2368y + 64)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.306081+0.971496I$ $a=-0.379940-0.267068I$ $b=0.17194+1.49872I$	$6.31796+4.23185I$	$-8.08189-9.05731I$
$u=-0.306081-0.971496I$ $a=-0.379940+0.267068I$ $b=0.17194-1.49872I$	$6.31796-4.23185I$	$-8.08189+9.05731I$
$u=0.726332+0.717882I$ $a=-0.266956+0.595547I$ $b=0.470087-0.986044I$	$-3.92620-2.24705I$	$-15.5498+1.9306I$
$u=0.726332-0.717882I$ $a=-0.266956-0.595547I$ $b=0.470087+0.986044I$	$-3.92620+2.24705I$	$-15.5498-1.9306I$
$u=0.885171+0.404098I$ $a=1.67056-0.76180I$ $b=0.819942+0.114529I$	$-2.95432+0.04023I$	$-20.3286-5.5388I$
$u=0.885171-0.404098I$ $a=1.67056+0.76180I$ $b=0.819942-0.114529I$	$-2.95432-0.04023I$	$-20.3286+5.5388I$
$u=0.558846+0.895019I$ $a=-0.770167+1.055880I$ $b=-1.031020-0.715634I$	$-0.75719-4.19906I$	$-11.33346+6.22509I$
$u=0.558846-0.895019I$ $a=-0.770167-1.055880I$ $b=-1.031020+0.715634I$	$-0.75719+4.19906I$	$-11.33346-6.22509I$
$u=-0.657049+0.551609I$ $a=1.23906+0.82471I$ $b=1.83855+0.13734I$	$-10.22390+1.23818I$	$-12.68969-5.92681I$
$u=-0.657049-0.551609I$ $a=1.23906-0.82471I$ $b=1.83855-0.13734I$	$-10.22390-1.23818I$	$-12.68969+5.92681I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.565389 + 1.005700I$ $a = -1.162420 - 0.720365I$ $b = -1.58427 + 0.36083I$	$0.05463 + 4.76238I$	$-11.14668 - 5.25286I$
$u = -0.565389 - 1.005700I$ $a = -1.162420 + 0.720365I$ $b = -1.58427 - 0.36083I$	$0.05463 - 4.76238I$	$-11.14668 + 5.25286I$
$u = 0.843377$ $a = 2.75809$ $b = 0.513113$	-2.79129	-49.4130
$u = -0.140757 + 0.828367I$ $a = 0.367813 + 0.583725I$ $b = -0.28661 - 1.50907I$	$5.58489 - 2.26037I$	$-14.4927 - 3.6390I$
$u = -0.140757 - 0.828367I$ $a = 0.367813 - 0.583725I$ $b = -0.28661 + 1.50907I$	$5.58489 + 2.26037I$	$-14.4927 + 3.6390I$
$u = -0.631272 + 1.097650I$ $a = 0.392830 - 0.018581I$ $b = -0.50506 - 1.57122I$	$-1.35975 + 8.36352I$	$-11.27390 - 6.50510I$
$u = -0.631272 - 1.097650I$ $a = 0.392830 + 0.018581I$ $b = -0.50506 + 1.57122I$	$-1.35975 - 8.36352I$	$-11.27390 + 6.50510I$
$u = 0.604075 + 1.194270I$ $a = 0.706087 - 0.904055I$ $b = 1.23790 + 0.84225I$	$-5.88204 - 8.98025I$	$-12.45579 + 6.40354I$
$u = 0.604075 - 1.194270I$ $a = 0.706087 + 0.904055I$ $b = 1.23790 - 0.84225I$	$-5.88204 + 8.98025I$	$-12.45579 - 6.40354I$
$u = -0.630005 + 1.198400I$ $a = 1.18843 + 0.82286I$ $b = 1.46968 - 0.61664I$	$1.77400 + 11.41590I$	$-9.49161 - 8.04508I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.630005 - 1.198400I$ $a = 1.18843 - 0.82286I$ $b = 1.46968 + 0.61664I$	$1.77400 - 11.41590I$	$-9.49161 + 8.04508I$
$u = -0.21630 + 1.42652I$ $a = -0.0559978 - 0.0670005I$ $b = -0.071308 + 0.475747I$	$8.04558 + 5.22550I$	$7.68375 - 8.68899I$
$u = -0.21630 - 1.42652I$ $a = -0.0559978 + 0.0670005I$ $b = -0.071308 - 0.475747I$	$8.04558 - 5.22550I$	$7.68375 + 8.68899I$
$u = -0.71570 + 1.32576I$ $a = -1.09519 - 0.90719I$ $b = -1.44754 + 0.87678I$	$-4.4797 + 16.8602I$	$-12.0000 - 8.5659I$
$u = -0.71570 - 1.32576I$ $a = -1.09519 + 0.90719I$ $b = -1.44754 - 0.87678I$	$-4.4797 - 16.8602I$	$-12.0000 + 8.5659I$
$u = 1.44106 + 0.58374I$ $a = -0.975310 + 0.305052I$ $b = -1.44083 + 0.27330I$	$-10.25000 + 1.95101I$	$-14.1127 - 3.6126I$
$u = 1.44106 - 0.58374I$ $a = -0.975310 - 0.305052I$ $b = -1.44083 - 0.27330I$	$-10.25000 - 1.95101I$	$-14.1127 + 3.6126I$
$u = 0.330393$ $a = 0.875273$ $b = -0.342608$	-0.684602	-14.4040
$u = 0.060190 + 0.268373I$ $a = 0.19952 - 1.89319I$ $b = -0.726719 + 0.048459I$	$-0.767693 + 0.138293I$	$-11.78528 + 0.30985I$
$u = 0.060190 - 0.268373I$ $a = 0.19952 + 1.89319I$ $b = -0.726719 - 0.048459I$	$-0.767693 - 0.138293I$	$-11.78528 - 0.30985I$

II. $I_2^u = \langle -1.61\times10^{45}u^{39} - 9.40\times10^{45}u^{38} + \cdots + 2.40\times10^{46}b - 2.58\times10^{47},\ -2.95\times10^{47}u^{39} - 1.77\times10^{48}u^{38} + \cdots + 2.33\times10^{48}a - 4.69\times10^{49},\ u^{40} + 6u^{39} + \cdots + 666u + 97\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.126779u^{39} + 0.762331u^{38} + \cdots + 125.069u + 20.1238 \\ 0.0672286u^{39} + 0.391787u^{38} + \cdots + 63.2326u + 10.7335 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.102593u^{39} + 0.627245u^{38} + \cdots + 80.1048u + 12.8462 \\ 0.0338897u^{39} + 0.223578u^{38} + \cdots + 43.4453u + 7.70229 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.153021u^{39} - 0.645296u^{38} + \cdots + 86.5001u + 15.5286 \\ -0.0899725u^{39} - 0.492162u^{38} + \cdots - 65.3776u - 10.0258 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.114842u^{39} + 0.690016u^{38} + \cdots + 87.9315u + 13.8490 \\ 0.0721576u^{39} + 0.397847u^{38} + \cdots + 57.2261u + 9.74529 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.0427641u^{39} + 0.258615u^{38} + \cdots + 68.3523u + 12.7917 \\ 0.0721576u^{39} + 0.397847u^{38} + \cdots + 57.2261u + 9.74529 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0551092u^{39} + 0.267827u^{38} + \cdots + 5.30009u + 0.972082 \\ 0.0961666u^{39} + 0.488952u^{38} + \cdots + 41.7982u + 6.06644 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.0595503u^{39} + 0.370543u^{38} + \cdots + 61.8366u + 9.39035 \\ 0.0672286u^{39} + 0.391787u^{38} + \cdots + 63.2326u + 10.7335 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.196886u^{39} + 1.21771u^{38} + \cdots + 77.1544u + 10.6242 \\ -0.0343140u^{39} - 0.208019u^{38} + \cdots - 28.2185u - 5.36491 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0728219u^{39} + 0.430060u^{38} + \cdots + 88.4314u + 10.6322$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{20} + 21u^{19} + \cdots + 13u + 1)^2$
c_2, c_4	$(u^{20} - 3u^{19} + \cdots + u - 1)^2$
c_3, c_6	$(u^{20} + u^{19} + \cdots - 8u - 4)^2$
c_5	$(u^{20} + 2u^{19} + \cdots - 2u + 1)^2$
c_7, c_9, c_{10} c_{12}	$u^{40} - 6u^{39} + \cdots - 666u + 97$
c_8, c_{11}	$u^{40} - 6u^{39} + \cdots - 10066u + 3683$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{20} - 41y^{19} + \cdots - 33y + 1)^2$
c_2, c_4	$(y^{20} - 21y^{19} + \cdots - 13y + 1)^2$
c_3, c_6	$(y^{20} - 15y^{19} + \cdots - 24y + 16)^2$
c_5	$(y^{20} + 6y^{19} + \cdots - 2y + 1)^2$
c_7, c_9, c_{10} c_{12}	$y^{40} + 22y^{39} + \cdots + 37176y + 9409$
c_8, c_{11}	$y^{40} + 10y^{39} + \cdots - 492576812y + 13564489$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.949389 + 0.318916I$ $a = 1.45882 + 0.65851I$ $b = 1.268400 + 0.295253I$	$-0.89345 - 5.67427I$	$-12.59597 + 5.66395I$
$u = -0.949389 - 0.318916I$ $a = 1.45882 - 0.65851I$ $b = 1.268400 - 0.295253I$	$-0.89345 + 5.67427I$	$-12.59597 - 5.66395I$
$u = 0.055076 + 1.004540I$ $a = 3.54069 + 5.49904I$ $b = -0.610309$	2.43031	$-15.8646 + 0.I$
$u = 0.055076 - 1.004540I$ $a = 3.54069 - 5.49904I$ $b = -0.610309$	2.43031	$-15.8646 + 0.I$
$u = -0.261046 + 0.924940I$ $a = -2.18019 - 0.55269I$ $b = -0.439566 - 0.534727I$	$2.07115 + 0.86143I$	$-9.55325 + 0.99952I$
$u = -0.261046 - 0.924940I$ $a = -2.18019 + 0.55269I$ $b = -0.439566 + 0.534727I$	$2.07115 - 0.86143I$	$-9.55325 - 0.99952I$
$u = -0.802373 + 0.466386I$ $a = -1.070220 - 0.185255I$ $b = -0.089922 + 1.317200I$	$-3.24441 - 2.97363I$	$-13.9234 + 2.6854I$
$u = -0.802373 - 0.466386I$ $a = -1.070220 + 0.185255I$ $b = -0.089922 - 1.317200I$	$-3.24441 + 2.97363I$	$-13.9234 - 2.6854I$
$u = 0.507721 + 0.743875I$ $a = -0.915680 + 0.137961I$ $b = -1.256010 + 0.124886I$	$-1.249910 - 0.191668I$	$-13.73570 - 0.22109I$
$u = 0.507721 - 0.743875I$ $a = -0.915680 - 0.137961I$ $b = -1.256010 - 0.124886I$	$-1.249910 + 0.191668I$	$-13.73570 + 0.22109I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.851192 + 0.285618I$ $a = 0.918683 - 0.525649I$ $b = 1.52621 - 0.50989I$	$-8.58220 + 3.56941I$	$-15.7159 - 1.0074I$
$u = 0.851192 - 0.285618I$ $a = 0.918683 + 0.525649I$ $b = 1.52621 + 0.50989I$	$-8.58220 - 3.56941I$	$-15.7159 + 1.0074I$
$u = 0.640368 + 0.940231I$ $a = 0.250357 - 0.419468I$ $b = -0.089922 + 1.317200I$	$-3.24441 - 2.97363I$	$-13.9234 + 2.6854I$
$u = 0.640368 - 0.940231I$ $a = 0.250357 + 0.419468I$ $b = -0.089922 - 1.317200I$	$-3.24441 + 2.97363I$	$-13.9234 - 2.6854I$
$u = -0.532340 + 1.015670I$ $a = 1.61077 + 0.30511I$ $b = 0.685016 - 0.443026I$	$4.73160 + 1.82256I$	$-4.87459 - 5.12436I$
$u = -0.532340 - 1.015670I$ $a = 1.61077 - 0.30511I$ $b = 0.685016 + 0.443026I$	$4.73160 - 1.82256I$	$-4.87459 + 5.12436I$
$u = -0.131384 + 1.153900I$ $a = -2.89792 - 2.19839I$ $b = -0.439566 + 0.534727I$	$2.07115 - 0.86143I$	$-9.55325 - 0.99952I$
$u = -0.131384 - 1.153900I$ $a = -2.89792 + 2.19839I$ $b = -0.439566 - 0.534727I$	$2.07115 + 0.86143I$	$-9.55325 + 0.99952I$
$u = -0.557461 + 0.561067I$ $a = -1.13556 - 1.31193I$ $b = -1.256010 + 0.124886I$	$-1.249910 - 0.191668I$	$-13.73570 - 0.22109I$
$u = -0.557461 - 0.561067I$ $a = -1.13556 + 1.31193I$ $b = -1.256010 - 0.124886I$	$-1.249910 + 0.191668I$	$-13.73570 + 0.22109I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.353190 + 1.172280I$ $a = -0.30264 - 1.50729I$ $b = 1.36144$	-4.11381	$-16.6683 + 0.I$
$u = 0.353190 - 1.172280I$ $a = -0.30264 + 1.50729I$ $b = 1.36144$	-4.11381	$-16.6683 + 0.I$
$u = -0.574260 + 1.083700I$ $a = 0.703109 + 1.169540I$ $b = 1.52621 - 0.50989I$	$-8.58220 + 3.56941I$	$-15.7159 - 1.0074I$
$u = -0.574260 - 1.083700I$ $a = 0.703109 - 1.169540I$ $b = 1.52621 + 0.50989I$	$-8.58220 - 3.56941I$	$-15.7159 + 1.0074I$
$u = 0.211725 + 1.229800I$ $a = 0.108080 + 0.199216I$ $b = 0.078647 - 0.574169I$	$2.82359 - 2.30782I$	$-5.88733 + 3.58910I$
$u = 0.211725 - 1.229800I$ $a = 0.108080 - 0.199216I$ $b = 0.078647 + 0.574169I$	$2.82359 + 2.30782I$	$-5.88733 - 3.58910I$
$u = 0.652486 + 1.117780I$ $a = 1.178370 - 0.534825I$ $b = 1.268400 + 0.295253I$	$-0.89345 - 5.67427I$	$-12.00000 + 5.66395I$
$u = 0.652486 - 1.117780I$ $a = 1.178370 + 0.534825I$ $b = 1.268400 - 0.295253I$	$-0.89345 + 5.67427I$	$-12.00000 - 5.66395I$
$u = -1.281360 + 0.321932I$ $a = -1.139100 - 0.351922I$ $b = -1.47182 - 0.62184I$	$-7.69158 - 9.88458I$	$-14.3825 + 5.7764I$
$u = -1.281360 - 0.321932I$ $a = -1.139100 + 0.351922I$ $b = -1.47182 + 0.62184I$	$-7.69158 + 9.88458I$	$-14.3825 - 5.7764I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.607865 + 0.225887I$ $a = 0.763840 + 0.694546I$ $b = 0.078647 + 0.574169I$	$2.82359 + 2.30782I$	$-5.88733 - 3.58910I$
$u = -0.607865 - 0.225887I$ $a = 0.763840 - 0.694546I$ $b = 0.078647 - 0.574169I$	$2.82359 - 2.30782I$	$-5.88733 + 3.58910I$
$u = -0.225404 + 1.332760I$ $a = 0.222126 + 0.306934I$ $b = 0.685016 + 0.443026I$	$4.73160 - 1.82256I$	$-4.87459 + 5.12436I$
$u = -0.225404 - 1.332760I$ $a = 0.222126 - 0.306934I$ $b = 0.685016 - 0.443026I$	$4.73160 + 1.82256I$	$-4.87459 - 5.12436I$
$u = -1.04608 + 1.04120I$ $a = -0.923744 - 0.369988I$ $b = -1.176520 + 0.244065I$	$-0.28251 + 3.88098I$	0
$u = -1.04608 - 1.04120I$ $a = -0.923744 + 0.369988I$ $b = -1.176520 - 0.244065I$	$-0.28251 - 3.88098I$	0
$u = 0.84940 + 1.32134I$ $a = -0.956517 + 0.698756I$ $b = -1.47182 - 0.62184I$	$-7.69158 - 9.88458I$	0
$u = 0.84940 - 1.32134I$ $a = -0.956517 - 0.698756I$ $b = -1.47182 + 0.62184I$	$-7.69158 + 9.88458I$	0
$u = -0.15220 + 1.73038I$ $a = -0.0374057 - 0.0650581I$ $b = -1.176520 - 0.244065I$	$-0.28251 - 3.88098I$	0
$u = -0.15220 - 1.73038I$ $a = -0.0374057 + 0.0650581I$ $b = -1.176520 + 0.244065I$	$-0.28251 + 3.88098I$	0

III. $I^u_3 = \langle b,\ 5u^2 + 4a + 3u + 11,\ u^3 + 2u - 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -\frac{5}{4}u^2 - \frac{3}{4}u - \frac{11}{4} \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_2 = \begin{pmatrix} -\frac{9}{4}u^2 + \frac{1}{4}u - \frac{15}{4} \\ u^2 - 2u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^2 + u - 1 \\ u^2 - 2u + 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -\frac{5}{4}u^2 - \frac{3}{4}u - \frac{11}{4} \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + u \\ -u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= \frac{69}{16}u^2 + \frac{47}{16}u - \frac{185}{16}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^3$
c_3, c_6	u^3
c_4	$(u+1)^3$
c_5	$u^3 - 3u^2 + 5u - 2$
c_7, c_9	$u^3 + 2u - 1$
c_8, 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_6	y^3
c_5	$y^3 + y^2 + 13y - 4$
c_7, c_8, c_9 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
$u = -0.22670 + 1.46771I$ $a = 0.048505 - 0.268962I$ $b = 0$	$7.79580 + 5.13794I$	$-21.2967 + 1.4416I$
$u = -0.22670 - 1.46771I$ $a = 0.048505 + 0.268962I$ $b = 0$	$7.79580 - 5.13794I$	$-21.2967 - 1.4416I$
$u = 0.453398$ $a = -3.34701$ $b = 0$	-2.43213	-9.34410

IV. $I^u_4 = \langle -12a^2u - 564au + \cdots + 570a + 147,\ a^3 - 5a^2u + 7a^2 + 4au + a + 2u + 1,\ u^2 + 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ 0.0356083a^2u + 1.67359au + \cdots - 1.69139a - 0.436202 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.0741840a^2u - 0.486647au + \cdots + 0.0237389a + 0.658754 \\ -0.00593472a^2u + 0.721068au + \cdots - 0.718101a + 1.57270 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.201780a^2u + 0.516320au + \cdots - 0.415430a - 0.528190 \\ -1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -0.0682493a^2u - 1.20772au + \cdots + 0.741840a - 0.913947 \\ -0.00593472a^2u + 0.721068au + \cdots - 0.718101a + 1.57270 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0741840a^2u - 0.486647au + \cdots + 0.0237389a - 1.34125 \\ -0.00593472a^2u + 0.721068au + \cdots - 0.718101a + 1.57270 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.0356083a^2u - 1.67359au + \cdots + 2.69139a + 0.436202 \\ 0.0356083a^2u + 1.67359au + \cdots - 1.69139a - 0.436202 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.136499a^2u - 0.415430au + \cdots - 0.516320a + 0.172107 \\ -u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{56}{337}a^2u + \frac{200}{337}a^2 - \frac{1284}{337}au + \frac{1312}{337}a + \frac{428}{337}u - \frac{1336}{337}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_3	$(u^3 - u^2 + 2u - 1)^2$
c_2	$(u^3 + u^2 - 1)^2$
c_4	$(u^3 - u^2 + 1)^2$
c_5	$u^6 + 5u^4 + 10u^2 + 1$
c_6	$(u^3 + u^2 + 2u + 1)^2$
c_7, c_9, c_{10} c_{12}	$(u^2 + 1)^3$
c_8	$u^6 + 4u^5 + 8u^4 - 28u^3 + 36u^2 - 24u + 8$
c_{11}	$u^6 - 4u^5 + 8u^4 + 28u^3 + 36u^2 + 24u + 8$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_3, c_6	$(y^3 + 3y^2 + 2y - 1)^2$
c_2, c_4	$(y^3 - y^2 + 2y - 1)^2$
c_5	$(y^3 + 5y^2 + 10y + 1)^2$
c_7, c_9, c_{10} c_{12}	$(y + 1)^6$
c_8, c_{11}	$y^6 + 360y^4 + 80y^2 + 64$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = 0.459293 - 0.567321I$ $b = -0.215080 + 1.307140I$	$6.31400 + 2.82812I$	$-4.49024 - 2.97945I$
$u = 1.000000I$ $a = -0.300102 + 0.163008I$ $b = -0.215080 - 1.307140I$	$6.31400 - 2.82812I$	$-4.49024 + 2.97945I$
$u = 1.000000I$ $a = -7.15919 + 5.40431I$ $b = -0.569840$	2.17641	$-11.01951 + 0.I$
$u = -1.000000I$ $a = 0.459293 + 0.567321I$ $b = -0.215080 - 1.307140I$	$6.31400 - 2.82812I$	$-4.49024 + 2.97945I$
$u = -1.000000I$ $a = -0.300102 - 0.163008I$ $b = -0.215080 + 1.307140I$	$6.31400 + 2.82812I$	$-4.49024 - 2.97945I$
$u = -1.000000I$ $a = -7.15919 - 5.40431I$ $b = -0.569840$	2.17641	$-11.01951 + 0.I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^3 - 4u - 15$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^4$
c_3, c_6	u^4
c_4	$(u+1)^4$
c_5	$(u^2+u+1)^2$
c_7, c_9	$u^4+u^3+2u^2+2u+1$
c_8, 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_6	y^4
c_5	$(y^2+y+1)^2$
c_7, c_8, c_9 c_{10}, c_{11}, c_{12}	$y^4+3y^3+2y^2+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_5	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.621744 + 0.440597I$ $a = 0.500000 - 0.866025I$ $b = 0$	$1.64493 + 2.02988I$	$-13.00000 - 3.46410I$
$u = -0.621744 - 0.440597I$ $a = 0.500000 + 0.866025I$ $b = 0$	$1.64493 - 2.02988I$	$-13.00000 + 3.46410I$
$u = 0.121744 + 1.306620I$ $a = 0.500000 + 0.866025I$ $b = 0$	$1.64493 - 2.02988I$	$-13.00000 + 3.46410I$
$u = 0.121744 - 1.306620I$ $a = 0.500000 - 0.866025I$ $b = 0$	$1.64493 + 2.02988I$	$-13.00000 - 3.46410I$

VI. $I_6^u = \langle 3b - 2a - 2,\ 4a^2 + 2a - 11,\ u - 1\rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} a \\ \frac{2}{3}a + \frac{2}{3} \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -\frac{1}{3}a - \frac{5}{6} \\ -\frac{2}{3}a - \frac{5}{3} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{1}{2}a - 1 \\ -a - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{3}a - \frac{5}{6} \\ -\frac{2}{3}a - \frac{5}{3} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} \frac{1}{3}a - \frac{7}{6} \\ -\frac{2}{3}a - \frac{5}{3} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -a - 3 \\ -2a - 4 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{1}{3}a - \frac{2}{3} \\ \frac{2}{3}a + \frac{2}{3} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{1}{2}a + 2 \\ a + 3 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{15}{2}a - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^2 - 7y + 1$
c_2, c_3, c_4 c_6	$y^2 - 3y + 1$
c_5	y^2
c_7, c_9, c_{10} c_{12}	$(y-1)^2$
c_8, c_{11}	$16(16y^2 - 28y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.00000$ $a = 1.42705$ $b = 1.61803$	-10.5276	-15.7030
$u = 1.00000$ $a = -1.92705$ $b = -0.618034$	-2.63189	9.45290

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^7(u^2-3u+1)(u^3-u^2+2u-1)^2$ $\cdot((u^{20}+21u^{19}+\cdots+13u+1)^2)(u^{30}+27u^{29}+\cdots+20513u+256)$
c_2	$((u-1)^7)(u^2+u-1)(u^3+u^2-1)^2(u^{20}-3u^{19}+\cdots+u-1)^2$ $\cdot(u^{30}-5u^{29}+\cdots+161u+16)$
c_3	$u^7(u^2+u-1)(u^3-u^2+2u-1)^2(u^{20}+u^{19}+\cdots-8u-4)^2$ $\cdot(u^{30}+2u^{29}+\cdots-400u-128)$
c_4	$((u+1)^7)(u^2-u-1)(u^3-u^2+1)^2(u^{20}-3u^{19}+\cdots+u-1)^2$ $\cdot(u^{30}-5u^{29}+\cdots+161u+16)$
c_5	$u^2(u^2+u+1)^2(u^3-3u^2+5u-2)(u^6+5u^4+10u^2+1)$ $\cdot((u^{20}+2u^{19}+\cdots-2u+1)^2)(u^{30}-6u^{29}+\cdots+240u-64)$
c_6	$u^7(u^2-u-1)(u^3+u^2+2u+1)^2(u^{20}+u^{19}+\cdots-8u-4)^2$ $\cdot(u^{30}+2u^{29}+\cdots-400u-128)$
c_7, c_9	$(u-1)^2(u^2+1)^3(u^3+2u-1)(u^4+u^3+2u^2+2u+1)$ $\cdot(u^{30}+2u^{29}+\cdots+6u+1)(u^{40}-6u^{39}+\cdots-666u+97)$
c_8	$16(4u^2+6u+1)(u^3+2u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^6+4u^5+\cdots-24u+8)(4u^{30}+6u^{29}+\cdots+40u-8)$ $\cdot(u^{40}-6u^{39}+\cdots-10066u+3683)$
c_{10}, c_{12}	$(u+1)^2(u^2+1)^3(u^3+2u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{30}+2u^{29}+\cdots+6u+1)(u^{40}-6u^{39}+\cdots-666u+97)$
c_{11}	$16(4u^2-6u+1)(u^3+2u+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^6-4u^5+\cdots+24u+8)(4u^{30}+6u^{29}+\cdots+40u-8)$ $\cdot(u^{40}-6u^{39}+\cdots-10066u+3683)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^7(y^2-7y+1)(y^3+3y^2+2y-1)^2$ $\cdot(y^{20}-41y^{19}+\cdots-33y+1)^2$ $\cdot(y^{30}-43y^{29}+\cdots-326031937y+65536)$
c_2, c_4	$(y-1)^7(y^2-3y+1)(y^3-y^2+2y-1)^2$ $\cdot((y^{20}-21y^{19}+\cdots-13y+1)^2)(y^{30}-27y^{29}+\cdots-20513y+256)$
c_3, c_6	$y^7(y^2-3y+1)(y^3+3y^2+2y-1)^2(y^{20}-15y^{19}+\cdots-24y+16)^2$ $\cdot(y^{30}-12y^{29}+\cdots-181504y+16384)$
c_5	$y^2(y^2+y+1)^2(y^3+y^2+13y-4)(y^3+5y^2+10y+1)^2$ $\cdot((y^{20}+6y^{19}+\cdots-2y+1)^2)(y^{30}+16y^{29}+\cdots-44800y+4096)$
c_7, c_9, c_{10} c_{12}	$(y-1)^2(y+1)^6(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^{30}+12y^{29}+\cdots+20y+1)(y^{40}+22y^{39}+\cdots+37176y+9409)$
c_8, c_{11}	$256(16y^2-28y+1)(y^3+4y^2+4y-1)(y^4+3y^3+2y^2+1)$ $\cdot(y^6+360y^4+80y^2+64)(16y^{30}-220y^{29}+\cdots-2368y+64)$ $\cdot(y^{40}+10y^{39}+\cdots-492576812y+13564489)$