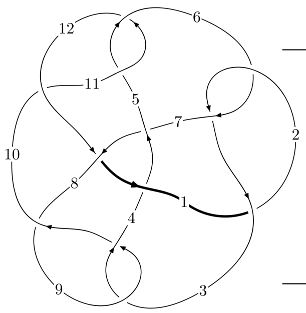
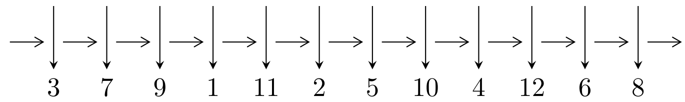
$12a_{0615}$ $(K12a_{0615})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I^u_1 = \langle b - u,\ u^5 + u^4 - 2u^2 + a - u,\ u^7 + u^6 - u^5 - 3u^4 + 2u^2 + 2u - 1\rangle$$
$$I^u_2 = \langle b - u,\ 3u^{21} + 2u^{20} + \cdots + 2a + 6,\ u^{22} - 3u^{21} + \cdots - 2u + 1\rangle$$
$$I^u_3 = \langle -u^{21} + 4u^{20} + \cdots + 2b + 3,\ -5u^{21} + 14u^{20} + \cdots + 2a + 7,\ u^{22} - 3u^{21} + \cdots - 2u + 1\rangle$$
$$I^u_4 = \langle -2489u^{21} - 8939u^{20} + \cdots + 2212b - 39100,\ 8695u^{21} + 75565u^{20} + \cdots + 4424a - 81736,$$
$$u^{22} + 9u^{21} + \cdots - 8u - 8\rangle$$
$$I^u_5 = \langle b + u,\ -u^5 + u^4 + a - u + 2,\ u^7 - u^6 - u^5 + u^4 + 2u^3 - 2u^2 + 1\rangle$$
$$I^u_6 = \langle -708u^{35}a + 2695u^{35} + \cdots + 9336a + 5225,\ 708u^{35}a + 584u^{35} + \cdots - 348a - 950,$$
$$u^{36} - 3u^{35} + \cdots - 4u + 3\rangle$$
$$I^u_7 = \langle b + u,\ -u^6 + 2u^4 - u^3 - 3u^2 + a + 2u + 1,\ u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1\rangle$$
$$I^u_8 = \langle -u^6 - u^5 + u^4 + u^3 - 2u^2 + b - u + 1,\ -u^6 - u^5 - 2u^2 + a - u,\ u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1\rangle$$
$$I^u_9 = \langle u^6 - u^5 - u^4 + 2u^3 + u^2 + b - u - 1,\ u^6 - u^5 - u^4 + u^3 + 2u^2 + a - u - 2,\ u^7 - u^6 - u^5 + 2u^4 + u^3 - u^2 -$$
$$I^u_{10} = \langle b,\ a + 1,\ u + 1\rangle$$

[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`).

$$I^u_{11} = \langle b+1,\ a+2,\ u+1\rangle$$
$$I^u_{12} = \langle b+1,\ a+3,\ u+1\rangle$$

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

* 13 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 177 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. $\boldsymbol{I_1^u = \langle b-u,\ u^5+u^4-2u^2+a-u,\ u^7+u^6-u^5-3u^4+2u^2+2u-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6u^4+3u^3-3u^2-12u-12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8, c_{10}	$u^7 + 3u^6 + 7u^5 + 9u^4 + 10u^3 + 10u^2 + 8u + 1$
c_2, c_3, c_5 c_6, c_9, c_{11}	$u^7 - u^6 - u^5 + 3u^4 - 2u^2 + 2u + 1$
c_4, c_7, c_{12}	$u^7 - 6u^6 + 18u^5 - 32u^4 + 35u^3 - 21u^2 + 3u + 3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_{10}	$y^7 + 5y^6 + 15y^5 + 15y^4 + 26y^3 + 42y^2 + 44y - 1$
c_2, c_3, c_5 c_6, c_9, c_{11}	$y^7 - 3y^6 + 7y^5 - 9y^4 + 10y^3 - 10y^2 + 8y - 1$
c_4, c_7, c_{12}	$y^7 + 10y^5 - 10y^4 + 25y^3 - 39y^2 + 135y - 9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.627087+0.878886I$ $a=-0.251298-0.695933I$ $b=-0.627087+0.878886I$	$7.19181-1.70769I$	$-6.14495-1.15014I$
$u=-0.627087-0.878886I$ $a=-0.251298+0.695933I$ $b=-0.627087-0.878886I$	$7.19181+1.70769I$	$-6.14495+1.15014I$
$u=\ 1.066700+0.299026I$ $a=\ 2.13291-1.39668I$ $b=\ 1.066700+0.299026I$	$-7.70407-2.73497I$	$-21.0094+5.5060I$
$u=\ 1.066700-0.299026I$ $a=\ 2.13291+1.39668I$ $b=\ 1.066700-0.299026I$	$-7.70407+2.73497I$	$-21.0094-5.5060I$
$u=-1.132720+0.725853I$ $a=-1.70846-1.34533I$ $b=-1.132720+0.725853I$	$2.4536+19.8535I$	$-12.4578-11.4641I$
$u=-1.132720-0.725853I$ $a=-1.70846+1.34533I$ $b=-1.132720-0.725853I$	$2.4536-19.8535I$	$-12.4578+11.4641I$
$u=\ 0.386210$ $a=\ 0.653686$ $b=\ 0.386210$	-0.592790	-16.7760

II. $I_2^u = \langle b - u,\ 3u^{21} + 2u^{20} + \cdots + 2a + 6,\ u^{22} - 3u^{21} + \cdots - 2u + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{3}{2}u^{21} - u^{20} + \cdots + \frac{9}{2}u - 3 \\ u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -\frac{3}{2}u^{21} - u^{20} + \cdots + \frac{7}{2}u - 3 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{11}{2}u^{21} - 8u^{20} + \cdots + 6u - \frac{1}{2} \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{41}{2}u^{21} - \frac{65}{2}u^{20} + \cdots + \frac{43}{2}u - \frac{13}{2} \\ -\frac{1}{2}u^{21} - \frac{11}{2}u^{20} + \cdots + 2u - 5 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 3u^{21} - 6u^{20} + \cdots + 4u - 1 \\ -\frac{3}{2}u^{21} + \frac{9}{2}u^{20} + \cdots - \frac{5}{2}u + \frac{5}{2} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 7u^{21} - \frac{37}{2}u^{20} + \cdots + 14u - \frac{17}{2} \\ -u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}u^{21} - u^{20} + \cdots + \frac{5}{2}u - 1 \\ \frac{3}{2}u^{21} - \frac{9}{2}u^{20} + \cdots + \frac{5}{2}u - \frac{5}{2} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 6u^{21} - 22u^{20} - 3u^{19} + 83u^{18} - 38u^{17} - 188u^{16} + 170u^{15} + 255u^{14} - 367u^{13} - 200u^{12} + 523u^{11} + 42u^{10} - 531u^9 + 145u^8 + 346u^7 - 200u^6 - 136u^5 + 138u^4 - 53u^2 + 20u - 23$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^{22} + 9u^{21} + \cdots - 6u + 1$
c_2, c_5, c_6 c_{11}	$u^{22} + 3u^{21} + \cdots + 2u + 1$
c_3, c_9	$u^{22} - 9u^{21} + \cdots + 8u - 8$
c_4, c_{12}	$u^{22} + 4u^{21} + \cdots + 4u + 1$
c_7	$u^{22} - 24u^{21} + \cdots - 53248u + 4096$
c_8	$u^{22} + 7u^{21} + \cdots + 2528u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^{22} + 11y^{21} + \cdots - 54y + 1$
c_2, c_5, c_6 c_{11}	$y^{22} - 9y^{21} + \cdots + 6y + 1$
c_3, c_9	$y^{22} - 7y^{21} + \cdots - 2528y + 64$
c_4, c_{12}	$y^{22} + 6y^{21} + \cdots + 2y + 1$
c_7	$y^{22} + 70y^{20} + \cdots - 159383552y + 16777216$
c_8	$y^{22} + 13y^{21} + \cdots - 5071360y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.836840 + 0.581799I$ $a = -1.72055 - 3.05333I$ $b = -0.836840 + 0.581799I$	$2.49482 - 0.03580I$	$-9.19656 - 1.18782I$
$u = -0.836840 - 0.581799I$ $a = -1.72055 + 3.05333I$ $b = -0.836840 - 0.581799I$	$2.49482 + 0.03580I$	$-9.19656 + 1.18782I$
$u = -0.958571$ $a = -3.30128$ $b = -0.958571$	-4.93723	-17.9860
$u = -0.795188 + 0.673491I$ $a = 0.482964 - 1.043980I$ $b = -0.795188 + 0.673491I$	$4.79008 + 3.04512I$	$-1.46454 - 3.95630I$
$u = -0.795188 - 0.673491I$ $a = 0.482964 + 1.043980I$ $b = -0.795188 - 0.673491I$	$4.79008 - 3.04512I$	$-1.46454 + 3.95630I$
$u = -1.08445$ $a = -2.31049$ $b = -1.08445$	-5.01957	-16.9370
$u = 0.580710 + 0.919219I$ $a = 0.325305 - 0.694106I$ $b = 0.580710 + 0.919219I$	$5.86563 + 7.62274I$	$-8.03926 - 3.67301I$
$u = 0.580710 - 0.919219I$ $a = 0.325305 + 0.694106I$ $b = 0.580710 - 0.919219I$	$5.86563 - 7.62274I$	$-8.03926 + 3.67301I$
$u = 0.919954 + 0.624468I$ $a = 2.09163 - 2.53678I$ $b = 0.919954 + 0.624468I$	$4.00179 - 7.08200I$	$-5.03530 + 8.12849I$
$u = 0.919954 - 0.624468I$ $a = 2.09163 + 2.53678I$ $b = 0.919954 - 0.624468I$	$4.00179 + 7.08200I$	$-5.03530 - 8.12849I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=0.906778+0.649704I$ $a=-0.03604-1.82735I$ $b=0.906778+0.649704I$	$2.00908-9.79924I$	$-10.3132+13.5800I$
$u=0.906778-0.649704I$ $a=-0.03604+1.82735I$ $b=0.906778-0.649704I$	$2.00908+9.79924I$	$-10.3132-13.5800I$
$u=0.514242+0.653281I$ $a=0.268297-0.175648I$ $b=0.514242+0.653281I$	$-0.046256+1.148600I$	$-11.80195-1.32419I$
$u=0.514242-0.653281I$ $a=0.268297+0.175648I$ $b=0.514242-0.653281I$	$-0.046256-1.148600I$	$-11.80195+1.32419I$
$u=1.201870+0.120067I$ $a=2.05957-0.60124I$ $b=1.201870+0.120067I$	$-6.50144+3.58049I$	$-19.3843-4.8932I$
$u=1.201870-0.120067I$ $a=2.05957+0.60124I$ $b=1.201870-0.120067I$	$-6.50144-3.58049I$	$-19.3843+4.8932I$
$u=-1.073910+0.601774I$ $a=-2.29187-1.39130I$ $b=-1.073910+0.601774I$	$-3.37508+11.10700I$	$-16.0470-11.0853I$
$u=-1.073910-0.601774I$ $a=-2.29187+1.39130I$ $b=-1.073910-0.601774I$	$-3.37508-11.10700I$	$-16.0470+11.0853I$
$u=1.093640+0.715729I$ $a=1.76706-1.47100I$ $b=1.093640+0.715729I$	$4.2815-13.6348I$	$-10.24905+7.91781I$
$u=1.093640-0.715729I$ $a=1.76706+1.47100I$ $b=1.093640-0.715729I$	$4.2815+13.6348I$	$-10.24905-7.91781I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.010269+0.423690I$		
$a=$	$0.85952+2.24965I$	$2.15030-2.68120I$	$-8.00708+4.43159I$
$b=$	$0.010269+0.423690I$		
$u=$	$0.010269-0.423690I$		
$a=$	$0.85952-2.24965I$	$2.15030+2.68120I$	$-8.00708-4.43159I$
$b=$	$0.010269-0.423690I$		

III. $I_3^u = \langle -u^{21}+4u^{20}+\cdots+2b+3,\ -5u^{21}+14u^{20}+\cdots+2a+7,\ u^{22}-3u^{21}+\cdots-2u+1\rangle$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} \frac{5}{2}u^{21}-7u^{20}+\cdots+6u-\frac{7}{2} \\ \frac{1}{2}u^{21}-2u^{20}+\cdots-3u^2-\frac{3}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2u^{21}-5u^{20}+\cdots+6u-2 \\ \frac{1}{2}u^{21}-2u^{20}+\cdots-3u^2-\frac{3}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{3}{2}u^{21}-8u^{20}+\cdots+\frac{11}{2}u-5 \\ -4u^{21}+6u^{20}+\cdots-\frac{11}{2}u+\frac{1}{2} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3u^{21}+\frac{11}{2}u^{20}+\cdots-\frac{7}{2}u+3 \\ 3u^{20}-\frac{7}{2}u^{19}+\cdots-\frac{1}{2}u+\frac{3}{2} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{17}{2}u^{21}-\frac{35}{2}u^{20}+\cdots+\frac{23}{2}u-\frac{11}{2} \\ -\frac{7}{2}u^{21}+2u^{20}+\cdots-3u-\frac{5}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{5}{2}u^{21}+11u^{20}+\cdots-\frac{11}{2}u+8 \\ 11u^{21}-\frac{49}{2}u^{20}+\cdots+15u-\frac{21}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{11}{2}u^{21}-8u^{20}+\cdots+6u-\frac{1}{2} \\ \frac{5}{2}u^{21}-11u^{20}+\cdots+\frac{11}{2}u-7 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 6u^{21}-22u^{20}-3u^{19}+83u^{18}-38u^{17}-188u^{16}+170u^{15}+255u^{14}-367u^{13}-200u^{12}+523u^{11}+42u^{10}-531u^9+145u^8+346u^7-200u^6-136u^5+138u^4-53u^2+20u-23$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^{22} + 9u^{21} + \cdots - 6u + 1$
c_2, c_3, c_6 c_9	$u^{22} + 3u^{21} + \cdots + 2u + 1$
c_4	$u^{22} - 24u^{21} + \cdots - 53248u + 4096$
c_5, c_{11}	$u^{22} - 9u^{21} + \cdots + 8u - 8$
c_7, c_{12}	$u^{22} + 4u^{21} + \cdots + 4u + 1$
c_{10}	$u^{22} + 7u^{21} + \cdots + 2528u + 64$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^{22} + 11y^{21} + \cdots - 54y + 1$
c_2, c_3, c_6 c_9	$y^{22} - 9y^{21} + \cdots + 6y + 1$
c_4	$y^{22} + 70y^{20} + \cdots - 159383552y + 16777216$
c_5, c_{11}	$y^{22} - 7y^{21} + \cdots - 2528y + 64$
c_7, c_{12}	$y^{22} + 6y^{21} + \cdots + 2y + 1$
c_{10}	$y^{22} + 13y^{21} + \cdots - 5071360y + 4096$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.836840+0.581799I$ $a=-0.079524-0.136665I$ $b=-1.101550-0.880614I$	$2.49482-0.03580I$	$-9.19656-1.18782I$
$u=-0.836840-0.581799I$ $a=-0.079524+0.136665I$ $b=-1.101550+0.880614I$	$2.49482+0.03580I$	$-9.19656+1.18782I$
$u=-0.958571$ $a=-1.05475$ $b=\ \ 0.168704$	-4.93723	-17.9860
$u=-0.795188+0.673491I$ $a=\ \ 0.892746-0.143126I$ $b=-0.302170-1.111950I$	$4.79008+3.04512I$	$-1.46454-3.95630I$
$u=-0.795188-0.673491I$ $a=\ \ 0.892746+0.143126I$ $b=-0.302170+1.111950I$	$4.79008-3.04512I$	$-1.46454+3.95630I$
$u=-1.08445$ $a=-1.47024$ $b=-0.658865$	-5.01957	-16.9370
$u=\ \ 0.580710+0.919219I$ $a=-0.476892-0.652029I$ $b=-1.057640+0.718065I$	$5.86563+7.62274I$	$-8.03926-3.67301I$
$u=\ \ 0.580710-0.919219I$ $a=-0.476892+0.652029I$ $b=-1.057640-0.718065I$	$5.86563-7.62274I$	$-8.03926+3.67301I$
$u=\ \ 0.919954+0.624468I$ $a=-0.930867+0.453984I$ $b=-0.599409-1.137210I$	$4.00179-7.08200I$	$-5.03530+8.12849I$
$u=\ \ 0.919954-0.624468I$ $a=-0.930867-0.453984I$ $b=-0.599409+1.137210I$	$4.00179+7.08200I$	$-5.03530-8.12849I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.906778 + 0.649704I$ $a = -1.70529 + 1.50502I$ $b = -1.24193 - 0.77433I$	$2.00908 - 9.79924I$	$-10.3132 + 13.5800I$
$u = 0.906778 - 0.649704I$ $a = -1.70529 - 1.50502I$ $b = -1.24193 + 0.77433I$	$2.00908 + 9.79924I$	$-10.3132 - 13.5800I$
$u = 0.514242 + 0.653281I$ $a = 0.769810 - 0.437698I$ $b = 1.090770 - 0.240404I$	$-0.046256 + 1.148600I$	$-11.80195 - 1.32419I$
$u = 0.514242 - 0.653281I$ $a = 0.769810 + 0.437698I$ $b = 1.090770 + 0.240404I$	$-0.046256 - 1.148600I$	$-11.80195 + 1.32419I$
$u = 1.201870 + 0.120067I$ $a = -2.05250 + 0.39422I$ $b = -0.998510 + 0.502784I$	$-6.50144 + 3.58049I$	$-19.3843 - 4.8932I$
$u = 1.201870 - 0.120067I$ $a = -2.05250 - 0.39422I$ $b = -0.998510 - 0.502784I$	$-6.50144 - 3.58049I$	$-19.3843 + 4.8932I$
$u = -1.073910 + 0.601774I$ $a = 1.72007 + 0.95190I$ $b = 1.375940 - 0.121987I$	$-3.37508 + 11.10700I$	$-16.0470 - 11.0853I$
$u = -1.073910 - 0.601774I$ $a = 1.72007 - 0.95190I$ $b = 1.375940 + 0.121987I$	$-3.37508 - 11.10700I$	$-16.0470 + 11.0853I$
$u = 1.093640 + 0.715729I$ $a = 0.513238 + 0.359274I$ $b = -0.545268 + 0.984025I$	$4.2815 - 13.6348I$	$-10.24905 + 7.91781I$
$u = 1.093640 - 0.715729I$ $a = 0.513238 - 0.359274I$ $b = -0.545268 - 0.984025I$	$4.2815 + 13.6348I$	$-10.24905 - 7.91781I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.010269 + 0.423690I$ $a = 0.111698 + 1.290160I$ $b = -0.875150 - 0.696689I$	$2.15030 - 2.68120I$	$-8.00708 + 4.43159I$
$u = 0.010269 - 0.423690I$ $a = 0.111698 - 1.290160I$ $b = -0.875150 + 0.696689I$	$2.15030 + 2.68120I$	$-8.00708 - 4.43159I$

IV. $\boldsymbol{I_4^u = \langle -2489u^{21} - 8939u^{20} + \cdots + 2212b - 39100,\ 8695u^{21} + 75565u^{20} + \cdots + 4424a - 81736,\ u^{22} + 9u^{21} + \cdots - 8u - 8\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1.96542u^{21} - 17.0807u^{20} + \cdots + 21.8454u + 18.4756 \\ 1.12523u^{21} + 4.04114u^{20} + \cdots - 10.3834u + 17.6763 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -3.09064u^{21} - 21.1218u^{20} + \cdots + 32.2288u + 0.799277 \\ 1.12523u^{21} + 4.04114u^{20} + \cdots - 10.3834u + 17.6763 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 6.31736u^{21} + 53.0095u^{20} + \cdots + 15.0077u - 55.9593 \\ 2.25723u^{21} + 22.5665u^{20} + \cdots + 5.23237u - 40.3580 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -4.21090u^{21} - 33.7579u^{20} + \cdots - 3.57188u + 20.5018 \\ -0.244123u^{21} - 3.93038u^{20} + \cdots + 1.53255u + 10.5841 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -1.05335u^{21} - 4.45886u^{20} + \cdots + 27.7238u - 13.1094 \\ -1.97604u^{21} - 16.8892u^{20} + \cdots + 14.8635u + 7.68897 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -4.06533u^{21} - 34.7642u^{20} + \cdots + 14.0420u + 27.5461 \\ 5.82188u^{21} + 44.0823u^{20} + \cdots - 22.9096u - 17.9331 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -4.48440u^{21} - 31.0364u^{20} + \cdots + 2.54792u - 3.33454 \\ -4.63608u^{21} - 42.5158u^{20} + \cdots + 14.7848u + 49.8608 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{223}{553}u^{21} + \frac{601}{79}u^{20} + \cdots + \frac{44196}{553}u - \frac{62234}{553}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{22}+7u^{21}+\cdots+2528u+64$
c_2, c_6	$u^{22}-9u^{21}+\cdots+8u-8$
c_3, c_5, c_9 c_{11}	$u^{22}+3u^{21}+\cdots+2u+1$
c_4, c_7	$u^{22}+4u^{21}+\cdots+4u+1$
c_8, c_{10}	$u^{22}+9u^{21}+\cdots-6u+1$
c_{12}	$u^{22}-24u^{21}+\cdots-53248u+4096$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{22} + 13y^{21} + \cdots - 5071360y + 4096$
c_2, c_6	$y^{22} - 7y^{21} + \cdots - 2528y + 64$
c_3, c_5, c_9 c_{11}	$y^{22} - 9y^{21} + \cdots + 6y + 1$
c_4, c_7	$y^{22} + 6y^{21} + \cdots + 2y + 1$
c_8, c_{10}	$y^{22} + 11y^{21} + \cdots - 54y + 1$
c_{12}	$y^{22} + 70y^{20} + \cdots - 159383552y + 16777216$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.090770 + 0.240404I$ $a = 0.542580 - 0.374285I$ $b = 0.514242 - 0.653281I$	$-0.046256 - 1.148600I$	$-11.80195 + 1.32419I$
$u = 1.090770 - 0.240404I$ $a = 0.542580 + 0.374285I$ $b = 0.514242 + 0.653281I$	$-0.046256 + 1.148600I$	$-11.80195 - 1.32419I$
$u = -0.998510 + 0.502784I$ $a = 2.10010 + 0.82977I$ $b = 1.201870 + 0.120067I$	$-6.50144 + 3.58049I$	$-19.3843 - 4.8932I$
$u = -0.998510 - 0.502784I$ $a = 2.10010 - 0.82977I$ $b = 1.201870 - 0.120067I$	$-6.50144 - 3.58049I$	$-19.3843 + 4.8932I$
$u = -0.875150 + 0.696689I$ $a = 0.347791 + 0.346084I$ $b = 0.010269 - 0.423690I$	$2.15030 + 2.68120I$	$-8.00708 - 4.43159I$
$u = -0.875150 - 0.696689I$ $a = 0.347791 - 0.346084I$ $b = 0.010269 + 0.423690I$	$2.15030 - 2.68120I$	$-8.00708 + 4.43159I$
$u = -0.545268 + 0.984025I$ $a = 0.460061 - 0.564019I$ $b = 1.093640 + 0.715729I$	$4.2815 - 13.6348I$	$-10.24905 + 7.91781I$
$u = -0.545268 - 0.984025I$ $a = 0.460061 + 0.564019I$ $b = 1.093640 - 0.715729I$	$4.2815 + 13.6348I$	$-10.24905 - 7.91781I$
$u = -0.302170 + 1.111950I$ $a = -0.459228 + 0.676532I$ $b = -0.795188 - 0.673491I$	$4.79008 - 3.04512I$	$-1.46454 + 3.95630I$
$u = -0.302170 - 1.111950I$ $a = -0.459228 - 0.676532I$ $b = -0.795188 + 0.673491I$	$4.79008 + 3.04512I$	$-1.46454 - 3.95630I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.057640 + 0.718065I$ $a = -0.567651 + 0.387084I$ $b = 0.580710 + 0.919219I$	$5.86563 + 7.62274I$	$-8.03926 - 3.67301I$
$u = -1.057640 - 0.718065I$ $a = -0.567651 - 0.387084I$ $b = 0.580710 - 0.919219I$	$5.86563 - 7.62274I$	$-8.03926 + 3.67301I$
$u = -0.599409 + 1.137210I$ $a = 0.526068 + 0.725042I$ $b = 0.919954 - 0.624468I$	$4.00179 + 7.08200I$	$-5.03530 - 8.12849I$
$u = -0.599409 - 1.137210I$ $a = 0.526068 - 0.725042I$ $b = 0.919954 + 0.624468I$	$4.00179 - 7.08200I$	$-5.03530 + 8.12849I$
$u = -0.658865$ $a = -2.41993$ $b = -1.08445$	-5.01957	-16.9370
$u = 1.375940 + 0.121987I$ $a = -1.74592 + 0.14546I$ $b = -1.073910 - 0.601774I$	$-3.37508 - 11.10700I$	$-16.0470 + 11.0853I$
$u = 1.375940 - 0.121987I$ $a = -1.74592 - 0.14546I$ $b = -1.073910 + 0.601774I$	$-3.37508 + 11.10700I$	$-16.0470 - 11.0853I$
$u = -1.101550 + 0.880614I$ $a = -0.1110480 - 0.0269532I$ $b = -0.836840 - 0.581799I$	$2.49482 + 0.03580I$	$-9.19656 + 1.18782I$
$u = -1.101550 - 0.880614I$ $a = -0.1110480 + 0.0269532I$ $b = -0.836840 + 0.581799I$	$2.49482 - 0.03580I$	$-9.19656 - 1.18782I$
$u = -1.24193 + 0.77433I$ $a = 1.37068 + 1.06137I$ $b = 0.906778 - 0.649704I$	$2.00908 + 9.79924I$	$-10.3132 - 13.5800I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.24193 - 0.77433I$ $a = 1.37068 - 1.06137I$ $b = 0.906778 + 0.649704I$	$2.00908 - 9.79924I$	$-10.3132 + 13.5800I$
$u = 0.168704$ $a = 5.99308$ $b = -0.958571$	-4.93723	-17.9860

V. $\boldsymbol{I_5^u = \langle b+u,\ -u^5+u^4+a-u+2,\ u^7-u^6-u^5+u^4+2u^3-2u^2+1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 6u^6-6u^4-3u^3+15u^2-12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8, c_{10}	$u^7 - 3u^6 + 7u^5 - 9u^4 + 10u^3 - 6u^2 + 4u - 1$
c_2, c_5, c_9	$u^7 + u^6 - u^5 - u^4 + 2u^3 + 2u^2 - 1$
c_3, c_6, c_{11}	$u^7 - u^6 - u^5 + u^4 + 2u^3 - 2u^2 + 1$
c_4, c_7, c_{12}	$u^7 - u^3 + u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_{10}	$y^7 + 5y^6 + 15y^5 + 31y^4 + 42y^3 + 26y^2 + 4y - 1$
c_2, c_3, c_5 c_6, c_9, c_{11}	$y^7 - 3y^6 + 7y^5 - 9y^4 + 10y^3 - 6y^2 + 4y - 1$
c_4, c_7, c_{12}	$y^7 - 2y^5 - 2y^4 + y^3 + y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.624311 + 0.652659I$ $a = -1.088180 + 0.242247I$ $b = -0.624311 - 0.652659I$	$3.14416 - 4.35714I$	$-6.47040 + 7.89451I$
$u = 0.624311 - 0.652659I$ $a = -1.088180 - 0.242247I$ $b = -0.624311 + 0.652659I$	$3.14416 + 4.35714I$	$-6.47040 - 7.89451I$
$u = -0.938309 + 0.714070I$ $a = 0.98531 + 1.45468I$ $b = 0.938309 - 0.714070I$	$2.23584 + 8.24520I$	$-9.99047 - 7.58188I$
$u = -0.938309 - 0.714070I$ $a = 0.98531 - 1.45468I$ $b = 0.938309 + 0.714070I$	$2.23584 - 8.24520I$	$-9.99047 + 7.58188I$
$u = 1.111470 + 0.496667I$ $a = -1.99974 + 0.62011I$ $b = -1.111470 - 0.496667I$	$-1.76596 - 9.37850I$	$-13.2669 + 9.6588I$
$u = 1.111470 - 0.496667I$ $a = -1.99974 - 0.62011I$ $b = -1.111470 + 0.496667I$	$-1.76596 + 9.37850I$	$-13.2669 - 9.6588I$
$u = -0.594946$ $a = -2.79477$ $b = 0.594946$	-3.93822	-6.54450

VI. $I_6^u = \langle -708u^{35}a + 2695u^{35} + \cdots + 9336a + 5225,\ 708u^{35}a + 584u^{35} + \cdots - 348a - 950,\ u^{36} - 3u^{35} + \cdots - 4u + 3\rangle$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} a \\ 0.404110au^{35} - 1.53824u^{35} + \cdots - 5.32877a - 2.98231 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.404110au^{35} + 1.53824u^{35} + \cdots + 6.32877a + 2.98231 \\ 0.404110au^{35} - 1.53824u^{35} + \cdots - 5.32877a - 2.98231 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.71176au^{35} - 19.1083u^{35} + \cdots - 18.2323a + 42.1745 \\ 2.54966au^{35} - 6.68779u^{35} + \cdots - 18.3476a + 31.5645 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 17.4024au^{35} + 15.4395u^{35} + \cdots - 6.81678a - 34.0765 \\ -7.90240au^{35} - 16.1895u^{35} + \cdots + 3.56678a + 48.3265 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 9.90354au^{35} - 12.8651u^{35} + \cdots - 23.5748a - 7.02759 \\ -1.64212au^{35} - 11.1809u^{35} + \cdots - 16.7551a + 58.0166 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 4.29737au^{35} + 40.7131u^{35} + \cdots + 0.168379a - 110.825 \\ -0.205479au^{35} - 34.0879u^{35} + \cdots - 11.0616a + 58.8653 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.235160au^{35} + 21.5818u^{35} + \cdots + 7.64612a - 21.6560 \\ 2.10959au^{35} - 2.70034u^{35} + \cdots - 7.76712a - 31.8476 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= -20u^{35} + 59u^{34} + 68u^{33} - 401u^{32} + 23u^{31} + 1440u^{30} - 896u^{29} - 3434u^{28} + 3778u^{27} + 5817u^{26} - 9944u^{25} - 6644u^{24} + 19472u^{23} + 3275u^{22} - 29861u^{21} + 5436u^{20} + 36810u^{19} - 16946u^{18} - 36863u^{17} + 26081u^{16} + 30326u^{15} - 28140u^{14} - 21370u^{13} + 23633u^{12} + 13830u^{11} - 16213u^{10} - 8829u^{9} + 9789u^{8} + 5308u^{7} - 5435u^{6} - 2437u^{5} + 2520u^{4} + 690u^{3} - 790u^{2} - 83u + 105$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8, c_{10}	$(u^{36} + 13u^{35} + \cdots + 124u + 9)^2$
c_2, c_3, c_5 c_6, c_9, c_{11}	$(u^{36} + 3u^{35} + \cdots + 4u + 3)^2$
c_4, c_7, c_{12}	$(u^{36} + 9u^{35} + \cdots + 10u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8, c_{10}	$(y^{36} + 23y^{35} + \cdots + 248y + 81)^2$
c_2, c_3, c_5 c_6, c_9, c_{11}	$(y^{36} - 13y^{35} + \cdots - 124y + 9)^2$
c_4, c_7, c_{12}	$(y^{36} + 9y^{35} + \cdots - 2y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.765456 + 0.633383I$ $a = -0.940028 - 0.378523I$ $b = 0.449327 - 1.113840I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$
$u = 0.765456 + 0.633383I$ $a = -0.25382 - 1.52848I$ $b = -0.897412 + 0.669456I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$
$u = 0.765456 - 0.633383I$ $a = -0.940028 + 0.378523I$ $b = 0.449327 + 1.113840I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$
$u = 0.765456 - 0.633383I$ $a = -0.25382 + 1.52848I$ $b = -0.897412 - 0.669456I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$
$u = 0.791040 + 0.669232I$ $a = 1.43100 - 0.12353I$ $b = -0.874503 + 0.590035I$	$2.36818 + 4.68398I$	$-9.65950 - 6.77168I$
$u = 0.791040 + 0.669232I$ $a = 0.126481 - 0.130137I$ $b = 1.161280 - 0.806628I$	$2.36818 + 4.68398I$	$-9.65950 - 6.77168I$
$u = 0.791040 - 0.669232I$ $a = 1.43100 + 0.12353I$ $b = -0.874503 - 0.590035I$	$2.36818 - 4.68398I$	$-9.65950 + 6.77168I$
$u = 0.791040 - 0.669232I$ $a = 0.126481 + 0.130137I$ $b = 1.161280 + 0.806628I$	$2.36818 - 4.68398I$	$-9.65950 + 6.77168I$
$u = 0.586231 + 0.743195I$ $a = 0.410954 + 0.075568I$ $b = 1.006090 - 0.548032I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$
$u = 0.586231 + 0.743195I$ $a = 0.249828 + 0.293949I$ $b = 0.736568 + 0.185891I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.586231 - 0.743195I$ $a = 0.410954 - 0.075568I$ $b = 1.006090 + 0.548032I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$
$u = 0.586231 - 0.743195I$ $a = 0.249828 - 0.293949I$ $b = 0.736568 - 0.185891I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$
$u = -0.874503 + 0.590035I$ $a = -0.498526 - 1.319730I$ $b = 0.791040 + 0.669232I$	$2.36818 + 4.68398I$	$-9.65950 - 6.77168I$
$u = -0.874503 + 0.590035I$ $a = 1.88013 + 1.56326I$ $b = 1.161280 - 0.806628I$	$2.36818 + 4.68398I$	$-9.65950 - 6.77168I$
$u = -0.874503 - 0.590035I$ $a = -0.498526 + 1.319730I$ $b = 0.791040 - 0.669232I$	$2.36818 - 4.68398I$	$-9.65950 + 6.77168I$
$u = -0.874503 - 0.590035I$ $a = 1.88013 - 1.56326I$ $b = 1.161280 + 0.806628I$	$2.36818 - 4.68398I$	$-9.65950 + 6.77168I$
$u = -0.897412 + 0.669456I$ $a = 0.880393 + 0.409454I$ $b = 0.449327 - 1.113840I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$
$u = -0.897412 + 0.669456I$ $a = -1.264700 + 0.539429I$ $b = 0.765456 + 0.633383I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$
$u = -0.897412 - 0.669456I$ $a = 0.880393 - 0.409454I$ $b = 0.449327 + 1.113840I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$
$u = -0.897412 - 0.669456I$ $a = -1.264700 - 0.539429I$ $b = 0.765456 - 0.633383I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.733727 + 0.454500I$ $a = -1.013730 + 0.749389I$ $b = -0.843469 - 0.867742I$	$1.53502 - 3.16618I$	$-13.8126 + 4.1206I$
$u = 0.733727 + 0.454500I$ $a = -2.96583 + 1.78018I$ $b = -0.738825 + 0.237774I$	$1.53502 - 3.16618I$	$-13.8126 + 4.1206I$
$u = 0.733727 - 0.454500I$ $a = -1.013730 - 0.749389I$ $b = -0.843469 + 0.867742I$	$1.53502 + 3.16618I$	$-13.8126 - 4.1206I$
$u = 0.733727 - 0.454500I$ $a = -2.96583 - 1.78018I$ $b = -0.738825 - 0.237774I$	$1.53502 + 3.16618I$	$-13.8126 - 4.1206I$
$u = 1.006090 + 0.548032I$ $a = 1.350300 + 0.212798I$ $b = 0.736568 - 0.185891I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$
$u = 1.006090 + 0.548032I$ $a = -0.004403 - 0.345202I$ $b = 0.586231 - 0.743195I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$
$u = 1.006090 - 0.548032I$ $a = 1.350300 - 0.212798I$ $b = 0.736568 + 0.185891I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$
$u = 1.006090 - 0.548032I$ $a = -0.004403 + 0.345202I$ $b = 0.586231 + 0.743195I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$
$u = 1.019320 + 0.615916I$ $a = 0.397656 + 0.603735I$ $b = -0.366959 + 0.715720I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$
$u = 1.019320 + 0.615916I$ $a = -1.81070 + 1.09398I$ $b = -1.213430 - 0.161296I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.019320 - 0.615916I$ $a = 0.397656 - 0.603735I$ $b = -0.366959 - 0.715720I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = 1.019320 - 0.615916I$ $a = -1.81070 - 1.09398I$ $b = -1.213430 + 0.161296I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = -0.366959 + 0.715720I$ $a = 0.932830 - 0.525065I$ $b = 1.019320 + 0.615916I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$
$u = -0.366959 + 0.715720I$ $a = -0.510617 - 0.708686I$ $b = -1.213430 - 0.161296I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$
$u = -0.366959 - 0.715720I$ $a = 0.932830 + 0.525065I$ $b = 1.019320 - 0.615916I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = -0.366959 - 0.715720I$ $a = -0.510617 + 0.708686I$ $b = -1.213430 + 0.161296I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = 0.449327 + 1.113840I$ $a = -0.502843 + 0.752573I$ $b = -0.897412 - 0.669456I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$
$u = 0.449327 + 1.113840I$ $a = 0.534004 + 0.646181I$ $b = 0.765456 - 0.633383I$	$4.48033 - 2.14866I$	$-2.67250 + 1.35700I$
$u = 0.449327 - 1.113840I$ $a = -0.502843 - 0.752573I$ $b = -0.897412 + 0.669456I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$
$u = 0.449327 - 1.113840I$ $a = 0.534004 - 0.646181I$ $b = 0.765456 + 0.633383I$	$4.48033 + 2.14866I$	$-2.67250 - 1.35700I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.843469+0.867742I$ $a=\ \ 0.571786+0.693885I$ $b=\ \ 0.733727-0.454500I$	$1.53502+3.16618I$	$-13.8126-4.1206I$
$u=-0.843469+0.867742I$ $a=-0.098320+0.115418I$ $b=-0.738825-0.237774I$	$1.53502+3.16618I$	$-13.8126-4.1206I$
$u=-0.843469-0.867742I$ $a=\ \ 0.571786-0.693885I$ $b=\ \ 0.733727+0.454500I$	$1.53502-3.16618I$	$-13.8126+4.1206I$
$u=-0.843469-0.867742I$ $a=-0.098320-0.115418I$ $b=-0.738825+0.237774I$	$1.53502-3.16618I$	$-13.8126+4.1206I$
$u=-0.738825+0.237774I$ $a=\ \ 0.093225-0.217239I$ $b=-0.843469-0.867742I$	$1.53502-3.16618I$	$-13.8126+4.1206I$
$u=-0.738825+0.237774I$ $a=\ \ 3.64477+1.22956I$ $b=\ \ 0.733727+0.454500I$	$1.53502-3.16618I$	$-13.8126+4.1206I$
$u=-0.738825-0.237774I$ $a=\ \ 0.093225+0.217239I$ $b=-0.843469+0.867742I$	$1.53502+3.16618I$	$-13.8126-4.1206I$
$u=-0.738825-0.237774I$ $a=\ \ 3.64477-1.22956I$ $b=\ \ 0.733727-0.454500I$	$1.53502+3.16618I$	$-13.8126-4.1206I$
$u=\ \ 1.030420+0.660763I$ $a=-0.390502+1.097780I$ $b=-0.667141+0.151533I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$
$u=\ \ 1.030420+0.660763I$ $a=-1.66395+1.22058I$ $b=-1.177730-0.499138I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$

Solutions to I^u_6	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.030420 - 0.660763I$ $a = -0.390502 - 1.097780I$ $b = -0.667141 - 0.151533I$	$-0.83225 + 6.33849I$	$-17.5584 - 8.2556I$
$u = 1.030420 - 0.660763I$ $a = -1.66395 - 1.22058I$ $b = -1.177730 + 0.499138I$	$-0.83225 + 6.33849I$	$-17.5584 - 8.2556I$
$u = -1.213430 + 0.161296I$ $a = -0.551140 - 0.160122I$ $b = -0.366959 - 0.715720I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = -1.213430 + 0.161296I$ $a = 2.04030 + 0.27111I$ $b = 1.019320 - 0.615916I$	$-1.44376 + 6.11028I$	$-13.9015 - 6.5551I$
$u = -1.213430 - 0.161296I$ $a = -0.551140 + 0.160122I$ $b = -0.366959 + 0.715720I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$
$u = -1.213430 - 0.161296I$ $a = 2.04030 - 0.27111I$ $b = 1.019320 + 0.615916I$	$-1.44376 - 6.11028I$	$-13.9015 + 6.5551I$
$u = 0.736568 + 0.185891I$ $a = 0.023413 + 0.480119I$ $b = 0.586231 + 0.743195I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$
$u = 0.736568 + 0.185891I$ $a = 1.27778 - 1.61781I$ $b = 1.006090 - 0.548032I$	$0.472211 + 0.976866I$	$-14.3955 - 0.4630I$
$u = 0.736568 - 0.185891I$ $a = 0.023413 - 0.480119I$ $b = 0.586231 - 0.743195I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$
$u = 0.736568 - 0.185891I$ $a = 1.27778 + 1.61781I$ $b = 1.006090 + 0.548032I$	$0.472211 - 0.976866I$	$-14.3955 + 0.4630I$

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.177730+0.499138I$ $a=-1.47958+0.27092I$ $b=-0.667141-0.151533I$	$-0.83225+6.33849I$	$-17.5584-8.2556I$
$u=-1.177730+0.499138I$ $a=1.76641+0.88298I$ $b=1.030420-0.660763I$	$-0.83225+6.33849I$	$-17.5584-8.2556I$
$u=-1.177730-0.499138I$ $a=-1.47958-0.27092I$ $b=-0.667141+0.151533I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$
$u=-1.177730-0.499138I$ $a=1.76641-0.88298I$ $b=1.030420+0.660763I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$
$u=-0.667141+0.151533I$ $a=1.89018-0.87945I$ $b=1.030420+0.660763I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$
$u=-0.667141+0.151533I$ $a=-1.94866-2.02787I$ $b=-1.177730-0.499138I$	$-0.83225-6.33849I$	$-17.5584+8.2556I$
$u=-0.667141-0.151533I$ $a=1.89018+0.87945I$ $b=1.030420-0.660763I$	$-0.83225+6.33849I$	$-17.5584-8.2556I$
$u=-0.667141-0.151533I$ $a=-1.94866+2.02787I$ $b=-1.177730+0.499138I$	$-0.83225+6.33849I$	$-17.5584-8.2556I$
$u=1.161280+0.806628I$ $a=-1.38684+1.18524I$ $b=-0.874503-0.590035I$	$2.36818-4.68398I$	0
$u=1.161280+0.806628I$ $a=0.1160880-0.0648776I$ $b=0.791040-0.669232I$	$2.36818-4.68398I$	0

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.161280 - 0.806628I$ $a = -1.38684 - 1.18524I$ $b = -0.874503 + 0.590035I$	$2.36818 + 4.68398I$	0
$u = 1.161280 - 0.806628I$ $a = 0.1160880 + 0.0648776I$ $b = 0.791040 + 0.669232I$	$2.36818 + 4.68398I$	0

VII.

$\boldsymbol{I^u_7 = \langle b+u,\ -u^6+2u^4-u^3-3u^2+a+2u+1,\ u^7+u^6-u^5-u^4+2u^3+u^2-u-1\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^6 - 2u^4 + u^3 + 3u^2 - 2u - 1 \\ -u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} u^6 - 2u^4 + u^3 + 3u^2 - u - 1 \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^6 - u^5 + 2u^4 + u^3 - 3u^2 + 2 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^6 + u^5 - 2u^4 - u^3 + 3u^2 + u - 2 \\ u^6 + u^5 - u^4 + 3u^2 - 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -2u^6 - u^5 + 3u^4 + u^3 - 4u^2 + 2 \\ -u^3 - u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^6 - u^5 - 2u^4 + u^3 + 2u^2 - 2u \\ u^3 - u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^6 - u^5 + u^4 - 3u^2 + 2 \\ u^3 + u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^6 - 7u^5 + u^4 + 2u^3 - 8u^2 - 6u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$u^7 - 3u^6 + 7u^5 - 9u^4 + 10u^3 - 7u^2 + 3u - 1$
c_2, c_5	$u^7 - u^6 - u^5 + u^4 + 2u^3 - u^2 - u + 1$
c_3	$u^7 - u^6 - u^5 + 2u^4 + u^3 - u^2 - u + 1$
c_4, c_{12}	$u^7 + u^6 + u^5 + u^4 - u^2 - u - 1$
c_6, c_{11}	$u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1$
c_7	$u^7 + 2u^6 + u^5 + 2u^3 + u^2 - u + 1$
c_8	$u^7 - 3u^6 + 7u^5 - 10u^4 + 9u^3 - 7u^2 + 3u - 1$
c_9	$u^7 + u^6 - u^5 - 2u^4 + u^3 + u^2 - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$y^7 + 5y^6 + 15y^5 + 23y^4 + 10y^3 - 7y^2 - 5y - 1$
c_2, c_5, c_6 c_{11}	$y^7 - 3y^6 + 7y^5 - 9y^4 + 10y^3 - 7y^2 + 3y - 1$
c_3, c_9	$y^7 - 3y^6 + 7y^5 - 10y^4 + 9y^3 - 7y^2 + 3y - 1$
c_4, c_{12}	$y^7 + y^6 - y^5 - y^4 + 2y^3 + y^2 - y - 1$
c_7	$y^7 - 2y^6 + 5y^5 - 2y^4 - 2y^3 - 5y^2 - y - 1$
c_8	$y^7 + 5y^6 + 7y^5 - 10y^4 - 23y^3 - 15y^2 - 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.793128 + 0.750889I$ $a = -0.681620 + 1.079830I$ $b = -0.793128 - 0.750889I$	$3.14237 - 2.89342I$	$-8.32420 + 3.05402I$
$u = 0.793128 - 0.750889I$ $a = -0.681620 - 1.079830I$ $b = -0.793128 + 0.750889I$	$3.14237 + 2.89342I$	$-8.32420 - 3.05402I$
$u = 0.879508$ $a = -0.491945$ $b = -0.879508$	-6.32616	-25.5040
$u = -0.610619 + 0.459179I$ $a = 1.29367 - 1.68827I$ $b = 0.610619 - 0.459179I$	$1.77813 - 1.30245I$	$-8.67647 + 1.87180I$
$u = -0.610619 - 0.459179I$ $a = 1.29367 + 1.68827I$ $b = 0.610619 + 0.459179I$	$1.77813 + 1.30245I$	$-8.67647 - 1.87180I$
$u = -1.122260 + 0.611121I$ $a = 1.63392 + 0.95531I$ $b = 1.122260 - 0.611121I$	$-0.11249 + 5.75449I$	$-9.24715 - 2.11869I$
$u = -1.122260 - 0.611121I$ $a = 1.63392 - 0.95531I$ $b = 1.122260 + 0.611121I$	$-0.11249 - 5.75449I$	$-9.24715 + 2.11869I$

VIII. $\boldsymbol{I^u_8 = \langle -u^6 - u^5 + u^4 + u^3 - 2u^2 + b - u + 1,\ -u^6 - u^5 - 2u^2 + a - u,\ u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -5u^6 - 7u^5 + u^4 + 2u^3 - 8u^2 - 6u - 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_8	$u^7 - 3u^6 + 7u^5 - 9u^4 + 10u^3 - 7u^2 + 3u - 1$
c_2, c_9	$u^7 - u^6 - u^5 + u^4 + 2u^3 - u^2 - u + 1$
c_3, c_6	$u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1$
c_4	$u^7 + 2u^6 + u^5 + 2u^3 + u^2 - u + 1$
c_5	$u^7 + u^6 - u^5 - 2u^4 + u^3 + u^2 - u - 1$
c_7, c_{12}	$u^7 + u^6 + u^5 + u^4 - u^2 - u - 1$
c_{10}	$u^7 - 3u^6 + 7u^5 - 10u^4 + 9u^3 - 7u^2 + 3u - 1$
c_{11}	$u^7 - u^6 - u^5 + 2u^4 + u^3 - u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_8	$y^7 + 5y^6 + 15y^5 + 23y^4 + 10y^3 - 7y^2 - 5y - 1$
c_2, c_3, c_6 c_9	$y^7 - 3y^6 + 7y^5 - 9y^4 + 10y^3 - 7y^2 + 3y - 1$
c_4	$y^7 - 2y^6 + 5y^5 - 2y^4 - 2y^3 - 5y^2 - y - 1$
c_5, c_{11}	$y^7 - 3y^6 + 7y^5 - 10y^4 + 9y^3 - 7y^2 + 3y - 1$
c_7, c_{12}	$y^7 + y^6 - y^5 - y^4 + 2y^3 + y^2 - y - 1$
c_{10}	$y^7 + 5y^6 + 7y^5 - 10y^4 - 23y^3 - 15y^2 - 5y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.793128 + 0.750889I$ $a = -0.592251 + 0.519555I$ $b = 0.664881 - 0.629473I$	$3.14237 - 2.89342I$	$-8.32420 + 3.05402I$
$u = 0.793128 - 0.750889I$ $a = -0.592251 - 0.519555I$ $b = 0.664881 + 0.629473I$	$3.14237 + 2.89342I$	$-8.32420 - 3.05402I$
$u = 0.879508$ $a = 3.41568$ $b = 1.13700$	-6.32616	-25.5040
$u = -0.610619 + 0.459179I$ $a = -0.175763 - 0.551563I$ $b = -1.046120 - 0.786669I$	$1.77813 - 1.30245I$	$-8.67647 + 1.87180I$
$u = -0.610619 - 0.459179I$ $a = -0.175763 + 0.551563I$ $b = -1.046120 + 0.786669I$	$1.77813 + 1.30245I$	$-8.67647 - 1.87180I$
$u = -1.122260 + 0.611121I$ $a = -0.939829 - 0.724033I$ $b = -0.687264 - 0.374245I$	$-0.11249 + 5.75449I$	$-9.24715 - 2.11869I$
$u = -1.122260 - 0.611121I$ $a = -0.939829 + 0.724033I$ $b = -0.687264 + 0.374245I$	$-0.11249 - 5.75449I$	$-9.24715 + 2.11869I$

IX. $I_9^u = \langle u^6 - u^5 - u^4 + 2u^3 + u^2 + b - u - 1,\ u^6 - u^5 - u^4 + u^3 + 2u^2 + a - u - 2,\ u^7 - u^6 - u^5 + 2u^4 + u^3 - u^2 - u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^7 - 3u^6 + 7u^5 - 10u^4 + 9u^3 - 7u^2 + 3u - 1$
c_2	$u^7 + u^6 - u^5 - 2u^4 + u^3 + u^2 - u - 1$
c_3, c_{11}	$u^7 + u^6 - u^5 - u^4 + 2u^3 + u^2 - u - 1$
c_4, c_7	$u^7 + u^6 + u^5 + u^4 - u^2 - u - 1$
c_5, c_9	$u^7 - u^6 - u^5 + u^4 + 2u^3 - u^2 - u + 1$
c_6	$u^7 - u^6 - u^5 + 2u^4 + u^3 - u^2 - u + 1$
c_8, c_{10}	$u^7 - 3u^6 + 7u^5 - 9u^4 + 10u^3 - 7u^2 + 3u - 1$
c_{12}	$u^7 + 2u^6 + u^5 + 2u^3 + u^2 - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^7 + 5y^6 + 7y^5 - 10y^4 - 23y^3 - 15y^2 - 5y - 1$
c_2, c_6	$y^7 - 3y^6 + 7y^5 - 10y^4 + 9y^3 - 7y^2 + 3y - 1$
c_3, c_5, c_9 c_{11}	$y^7 - 3y^6 + 7y^5 - 9y^4 + 10y^3 - 7y^2 + 3y - 1$
c_4, c_7	$y^7 + y^6 - y^5 - y^4 + 2y^3 + y^2 - y - 1$
c_8, c_{10}	$y^7 + 5y^6 + 15y^5 + 23y^4 + 10y^3 - 7y^2 - 5y - 1$
c_{12}	$y^7 - 2y^6 + 5y^5 - 2y^4 - 2y^3 - 5y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.664881 + 0.629473I$ $a = 0.657468 + 0.671547I$ $b = -0.793128 - 0.750889I$	$3.14237 - 2.89342I$	$-8.32420 + 3.05402I$
$u = -0.664881 - 0.629473I$ $a = 0.657468 - 0.671547I$ $b = -0.793128 + 0.750889I$	$3.14237 + 2.89342I$	$-8.32420 - 3.05402I$
$u = -1.13700$ $a = -2.64215$ $b = -0.879508$	-6.32616	-25.5040
$u = 0.687264 + 0.374245I$ $a = 1.82583 - 0.64764I$ $b = 1.122260 - 0.611121I$	$-0.11249 + 5.75449I$	$-9.24715 - 2.11869I$
$u = 0.687264 - 0.374245I$ $a = 1.82583 + 0.64764I$ $b = 1.122260 + 0.611121I$	$-0.11249 - 5.75449I$	$-9.24715 + 2.11869I$
$u = 1.046120 + 0.786669I$ $a = 0.337773 - 0.009203I$ $b = 0.610619 - 0.459179I$	$1.77813 - 1.30245I$	$-8.67647 + 1.87180I$
$u = 1.046120 - 0.786669I$ $a = 0.337773 + 0.009203I$ $b = 0.610619 + 0.459179I$	$1.77813 + 1.30245I$	$-8.67647 - 1.87180I$

X. $I^u_{10} = \langle b,\ a+1,\ u+1 \rangle$

(i) Arc colorings

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

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

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

$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$

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

$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(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_{12}	$y - 1$
c_5, c_{10}, c_{11}	y

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{10}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.00000$ $b = 0$	-4.93480	-18.0000

XI. $I^u_{11} = \langle b+1,\ a+2,\ u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_{11}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -2.00000$ $b = -1.00000$	-4.93480	-18.0000

XII. $I^u_{12} = \langle b+1,\ a+3,\ u+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{12}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -3.00000$ $b = -1.00000$	-4.93480	-18.0000

XIII. $\boldsymbol{I_1^v = \langle a,\ b+1,\ v-1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -18$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = \quad 1.00000$ $a = \qquad\qquad 0$ $b = -1.00000$	-4.93480	-18.0000

XIV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_8, c_{10}	$u(u+1)^3(u^7-3u^6+7u^5-10u^4+9u^3-7u^2+3u-1)$ $\cdot(u^7-3u^6+7u^5-9u^4+10u^3-7u^2+3u-1)^2$ $\cdot(u^7-3u^6+7u^5-9u^4+10u^3-6u^2+4u-1)$ $\cdot(u^7+3u^6+7u^5+9u^4+10u^3+10u^2+8u+1)$ $\cdot(u^{22}+7u^{21}+\cdots+2528u+64)(u^{22}+9u^{21}+\cdots-6u+1)^2$ $\cdot(u^{36}+13u^{35}+\cdots+124u+9)^2$
c_2, c_5, c_9	$u(u-1)^3(u^7-u^6-u^5+u^4+2u^3-u^2-u+1)^2$ $\cdot(u^7-u^6-u^5+3u^4-2u^2+2u+1)(u^7+u^6+\cdots-u-1)$ $\cdot(u^7+u^6-u^5-u^4+2u^3+2u^2-1)(u^{22}-9u^{21}+\cdots+8u-8)$ $\cdot((u^{22}+3u^{21}+\cdots+2u+1)^2)(u^{36}+3u^{35}+\cdots+4u+3)^2$
c_3, c_6, c_{11}	$u(u-1)^3(u^7-u^6-u^5+u^4+2u^3-2u^2+1)$ $\cdot(u^7-u^6+\cdots-u+1)(u^7-u^6-u^5+3u^4-2u^2+2u+1)$ $\cdot((u^7+u^6+\cdots-u-1)^2)(u^{22}-9u^{21}+\cdots+8u-8)$ $\cdot((u^{22}+3u^{21}+\cdots+2u+1)^2)(u^{36}+3u^{35}+\cdots+4u+3)^2$
c_4, c_7, c_{12}	$u(u-1)(u+1)^2(u^7-u^3+u^2-u+1)$ $\cdot(u^7-6u^6+18u^5-32u^4+35u^3-21u^2+3u+3)$ $\cdot(u^7+u^6+u^5+u^4-u^2-u-1)^2(u^7+2u^6+u^5+2u^3+u^2-u+1)$ $\cdot(u^{22}-24u^{21}+\cdots-53248u+4096)(u^{22}+4u^{21}+\cdots+4u+1)^2$ $\cdot(u^{36}+9u^{35}+\cdots+10u+1)^2$

XV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
	$y(y-1)^3(y^7+5y^6+7y^5-10y^4-23y^3-15y^2-5y-1)$
	$\cdot(y^7+5y^6+15y^5+15y^4+26y^3+42y^2+44y-1)$
c_1, c_8, c_{10}	$\cdot(y^7+5y^6+15y^5+23y^4+10y^3-7y^2-5y-1)^2$
	$\cdot(y^7+5y^6+15y^5+31y^4+42y^3+26y^2+4y-1)$
	$\cdot(y^{22}+11y^{21}+\cdots-54y+1)^2$
	$\cdot(y^{22}+13y^{21}+\cdots-5071360y+4096)$
	$\cdot(y^{36}+23y^{35}+\cdots+248y+81)^2$
	$y(y-1)^3(y^7-3y^6+7y^5-10y^4+9y^3-7y^2+3y-1)$
c_2, c_3, c_5	$\cdot(y^7-3y^6+7y^5-9y^4+10y^3-10y^2+8y-1)$
c_6, c_9, c_{11}	$\cdot(y^7-3y^6+7y^5-9y^4+10y^3-7y^2+3y-1)^2$
	$\cdot(y^7-3y^6+7y^5-9y^4+10y^3-6y^2+4y-1)$
	$\cdot((y^{22}-9y^{21}+\cdots+6y+1)^2)(y^{22}-7y^{21}+\cdots-2528y+64)$
	$\cdot(y^{36}-13y^{35}+\cdots-124y+9)^2$
	$y(y-1)^3(y^7-2y^5-2y^4+y^3+y^2-y-1)$
c_4, c_7, c_{12}	$\cdot(y^7+10y^5-10y^4+25y^3-39y^2+135y-9)$
	$\cdot(y^7-2y^6+5y^5-2y^4-2y^3-5y^2-y-1)$
	$\cdot(y^7+y^6-y^5-y^4+2y^3+y^2-y-1)^2$
	$\cdot(y^{22}+70y^{20}+\cdots-159383552y+16777216)$
	$\cdot((y^{22}+6y^{21}+\cdots+2y+1)^2)(y^{36}+9y^{35}+\cdots-2y+1)^2$