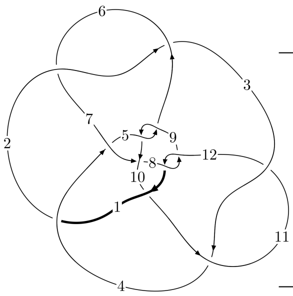
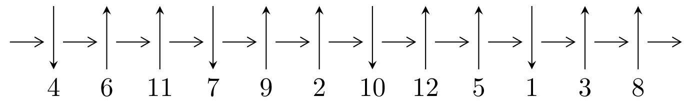
$12a_{0975}$ ($K12a_{0975}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -u^6 + u^5 - 3u^4 + 2u^3 - 4u^2 + b + 4u - 2,\ -u^6 + u^5 - 3u^4 + 2u^3 - 4u^2 + a + 4u - 1,$$
$$u^8 - 2u^7 + 5u^6 - 6u^5 + 9u^4 - 10u^3 + 8u^2 - 4u + 1\rangle$$

$$I_2^u = \langle 4u^{14}a - u^{14} + \cdots + 8b - 6,\ 4u^{14}a - u^{14} + \cdots + 4a + 4,\ u^{15} + 2u^{14} + \cdots - 2u - 2\rangle$$

$$I_3^u = \langle -1.77260 \times 10^{28}u^{29} + 1.42417 \times 10^{29}u^{28} + \cdots + 2.16558 \times 10^{29}b + 4.09260 \times 10^{29},$$
$$1.02276 \times 10^{29}u^{29} - 4.13857 \times 10^{29}u^{28} + \cdots + 4.65600 \times 10^{30}a - 8.84106 \times 10^{30},$$
$$u^{30} - 8u^{29} + \cdots - 148u + 43\rangle$$

$$I_4^u = \langle -32051170u^{19} + 10432934u^{18} + \cdots + 12423084b - 29249775,$$
$$-32051170u^{19} + 10432934u^{18} + \cdots + 12423084a - 16826691,\ 2u^{20} + 11u^{18} + \cdots + 4u + 1\rangle$$

$$I_5^u = \langle -25516394u^{19} + 1505498u^{18} + \cdots + 12423084b - 14885617,$$
$$-32363894u^{19} + 11810374u^{18} + \cdots + 6211542a - 28830039,\ 2u^{20} + 11u^{18} + \cdots + 4u + 1\rangle$$

$$I_6^u = \langle 2u^6a + 3u^5a + 5u^6 + 8u^4a + 6u^5 + 7u^3a + 17u^4 + 12u^2a + 16u^3 + 6au + 18u^2 + 6b - a + 15u + 2,$$
$$-u^6a - u^5a - 4u^4a - 3u^3a + u^4 - 5u^2a + a^2 - 2au + 2u^2 + 1,\ u^7 + u^6 + 4u^5 + 3u^4 + 5u^3 + 3u^2 + u + 1\rangle$$

$$I_7^u = \langle 177u^{13} - 1117u^{12} + \cdots + 52b - 1064,\ 296u^{13} - 1867u^{12} + \cdots + 52a - 1718,$$
$$u^{14} - 7u^{13} + \cdots - 20u + 4\rangle$$

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

$$I_9^u = \langle -2u^3 - 4u^2 + 4b - 3u + 1,\ 2u^3 + 2a + u - 3,\ 2u^4 + 2u^3 + 3u^2 + 1\rangle$$

$$I_{10}^u = \langle -2u^3 + 8u^2 + 4b + 13u + 7,\ -2u^3 + 8u^2 + 4a + 13u + 11,\ 2u^4 + 2u^3 + 3u^2 + 1\rangle$$

[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`).

$$
\begin{aligned}
I^u_{11} = \langle & u^{11} - 2u^{10} + 6u^9 - 7u^8 + 11u^7 - 7u^6 + 4u^5 - u^4 - 5u^3 - 2u^2 + 2b - 2u - 2, \\
& 5u^{11} - 11u^{10} + 32u^9 - 39u^8 + 60u^7 - 43u^6 + 31u^5 - 12u^4 - 16u^3 - 12u^2 + 4a - 8u - 16, \\
& u^{12} - 3u^{11} + 8u^{10} - 13u^9 + 18u^8 - 19u^7 + 13u^6 - 8u^5 - 2u^4 + 2u^3 + 4\rangle \\
I^u_{12} = \langle & 973497u^{11}a + 1110148u^{11} + \cdots + 28861189a - 48376404, \\
& 2096423u^{11}a + 1944076u^{11} + \cdots + 42713350a + 16958187, \\
& u^{12} + 4u^{11} + 14u^{10} + 31u^9 + 68u^8 + 107u^7 + 166u^6 + 189u^5 + 205u^4 + 163u^3 + 110u^2 + 52u + 17\rangle \\
I^u_{13} = \langle & u^2 + b,\ u^2 + a + 1,\ u^4 - u^3 + 3u^2 - 2u + 1\rangle \\
I^u_{14} = \langle & b - a - u,\ a^2 + 2au + a - 2,\ u^2 + u + 1\rangle
\end{aligned}
$$

* 14 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 192 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. $\boldsymbol{I_1^u = \langle -u^6 + u^5 - 3u^4 + 2u^3 - 4u^2 + b + 4u - 2,\ -u^6 + u^5 - 3u^4 + 2u^3 - 4u^2 + a + 4u - 1,\ u^8 - 2u^7 + \cdots - 4u + 1\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} u^6 - u^5 + 3u^4 - 2u^3 + 5u^2 - 4u + 1 \\ u^6 - u^5 + 3u^4 - 2u^3 + 5u^2 - 4u + 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^7 + u^6 - 3u^5 + 2u^4 - 4u^3 + 4u^2 \\ -u^7 + u^6 - 3u^5 + 2u^4 - 4u^3 + 4u^2 - u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^7 + 2u^5 + 2u^4 + 2u^3 + 2u^2 - 4u + 2 \\ u^7 - u^6 + 3u^5 - u^4 + 4u^3 - 2u^2 + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^7 - 3u^6 + 6u^5 - 9u^4 + 11u^3 - 14u^2 + 11u - 4 \\ u^3 + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^7 + 3u^6 - 6u^5 + 9u^4 - 10u^3 + 14u^2 - 11u + 4 \\ u^7 - u^6 + 3u^5 - 2u^4 + 5u^3 - 4u^2 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2u^7 + 4u^6 - 9u^5 + 11u^4 - 15u^3 + 18u^2 - 12u + 4 \\ -u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^6 + u^5 - 3u^4 + 2u^3 - 4u^2 + 4u - 1 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -12u^7 + 24u^6 - 56u^5 + 68u^4 - 92u^3 + 108u^2 - 72u + 28$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^8 - 6y^7 + 23y^6 - 42y^5 + 43y^4 - 6y^3 + 14y^2 + 1$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$y^8 + 6y^7 + 19y^6 + 30y^5 + 27y^4 + 6y^3 + 2y^2 + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.341045 + 0.670313I$ $a = -1.14930 - 1.40518I$ $b = -0.149303 - 1.405180I$	$-5.74556 + 5.06444I$	$-6.22905 - 4.15704I$
$u = 0.341045 - 0.670313I$ $a = -1.14930 + 1.40518I$ $b = -0.149303 + 1.405180I$	$-5.74556 - 5.06444I$	$-6.22905 + 4.15704I$
$u = -0.548152 + 1.211390I$ $a = 0.942196 - 0.385112I$ $b = 1.94220 - 0.38511I$	$-7.41391 - 7.06214I$	$0.57220 + 4.67413I$
$u = -0.548152 - 1.211390I$ $a = 0.942196 + 0.385112I$ $b = 1.94220 + 0.38511I$	$-7.41391 + 7.06214I$	$0.57220 - 4.67413I$
$u = 0.566503 + 0.259919I$ $a = -0.452212 + 0.073091I$ $b = 0.547788 + 0.073091I$	$1.156280 + 0.316293I$	$9.01033 - 1.88379I$
$u = 0.566503 - 0.259919I$ $a = -0.452212 - 0.073091I$ $b = 0.547788 - 0.073091I$	$1.156280 - 0.316293I$	$9.01033 + 1.88379I$
$u = 0.64060 + 1.47097I$ $a = 1.65932 + 0.19565I$ $b = 2.65932 + 0.19565I$	$-14.3158 + 20.3233I$	$-3.35347 - 9.42778I$
$u = 0.64060 - 1.47097I$ $a = 1.65932 - 0.19565I$ $b = 2.65932 - 0.19565I$	$-14.3158 - 20.3233I$	$-3.35347 + 9.42778I$

II.

$$\boldsymbol{I_2^u = \langle 4u^{14}a - u^{14} + \cdots + 8b - 6,\ 4u^{14}a - u^{14} + \cdots + 4a + 4,\ u^{15} + 2u^{14} + \cdots - 2u - 2\rangle}$$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} a \\ -\frac{1}{2}u^{14}a + \frac{1}{8}u^{14} + \cdots + 3u + \frac{3}{4} \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} \frac{1}{2}u^{14}a - \frac{3}{8}u^{14} + \cdots + a - \frac{5}{4} \\ -\frac{1}{4}u^{14} - \frac{1}{4}u^{13} + \cdots + 2u - \frac{1}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{8}u^{14}a + \frac{3}{8}u^{14} + \cdots - \frac{1}{4}a - \frac{3}{4} \\ \frac{1}{2}u^{14}a - \frac{1}{4}u^{14} + \cdots + a - \frac{3}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{2}u^{14}a - \frac{5}{8}u^{14} + \cdots + a + \frac{1}{4} \\ \frac{1}{2}u^{14}a - \frac{5}{8}u^{14} + \cdots + 2u + \frac{1}{4} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{7}{8}u^{14}a + \frac{9}{8}u^{14} + \cdots + \frac{7}{4}a - \frac{1}{4} \\ -\frac{1}{2}u^{14}a + u^{14} + \cdots + a + u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{3}{4}u^{14} + \frac{5}{4}u^{13} + \cdots - \frac{1}{2}u + \frac{3}{2} \\ \frac{1}{2}u^{13}a + \frac{3}{8}u^{14} + \cdots - a - \frac{3}{4} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{2}u^{13}a - \frac{1}{8}u^{14} + \cdots - a + \frac{9}{4} \\ \frac{1}{2}u^{13}a + \frac{1}{8}u^{14} + \cdots - a - \frac{1}{4} \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{2}u^{14}a + \frac{5}{4}u^{14} + \cdots - \frac{9}{2}u - \frac{1}{2} \\ -\frac{3}{8}u^{14}a + \frac{3}{8}u^{14} + \cdots + \frac{3}{4}a - \frac{3}{4} \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $=$
$u^{14}+u^{13}+7u^{12}+3u^{11}+13u^{10}-11u^9-14u^8-58u^7-71u^6-81u^5-66u^4-26u^3+2u^2+16u+14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{30} - 2u^{29} + \cdots + 22u + 1$
c_2, c_6, c_8 c_{12}	$u^{30} - 8u^{29} + \cdots - 148u + 43$
c_3, c_5, c_9 c_{11}	$(u^{15} + 2u^{14} + \cdots - 2u - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{30} - 18y^{29} + \cdots - 206y + 1$
c_2, c_6, c_8 c_{12}	$y^{30} + 16y^{29} + \cdots + 1144y + 1849$
c_3, c_5, c_9 c_{11}	$(y^{15} + 16y^{14} + \cdots - 32y - 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.784607 + 0.130638I$ $a = 0.350326 - 0.122670I$ $b = -0.439042 - 0.323007I$	$-1.36431 + 3.70005I$	$4.97943 - 3.63821I$
$u = -0.784607 + 0.130638I$ $a = -0.12761 + 1.99961I$ $b = -0.455331 + 0.530841I$	$-1.36431 + 3.70005I$	$4.97943 - 3.63821I$
$u = -0.784607 - 0.130638I$ $a = 0.350326 + 0.122670I$ $b = -0.439042 + 0.323007I$	$-1.36431 - 3.70005I$	$4.97943 + 3.63821I$
$u = -0.784607 - 0.130638I$ $a = -0.12761 - 1.99961I$ $b = -0.455331 - 0.530841I$	$-1.36431 - 3.70005I$	$4.97943 + 3.63821I$
$u = 0.013344 + 1.238380I$ $a = 0.482542 + 0.420194I$ $b = 0.083565 - 0.439251I$	$-9.63722 - 1.22028I$	$-4.95246 + 1.57507I$
$u = 0.013344 + 1.238380I$ $a = 1.32269 + 0.59357I$ $b = 2.47269 + 0.15514I$	$-9.63722 - 1.22028I$	$-4.95246 + 1.57507I$
$u = 0.013344 - 1.238380I$ $a = 0.482542 - 0.420194I$ $b = 0.083565 + 0.439251I$	$-9.63722 + 1.22028I$	$-4.95246 - 1.57507I$
$u = 0.013344 - 1.238380I$ $a = 1.32269 - 0.59357I$ $b = 2.47269 - 0.15514I$	$-9.63722 + 1.22028I$	$-4.95246 - 1.57507I$
$u = -0.520579 + 1.217160I$ $a = 0.310968 - 1.284780I$ $b = 0.120416 - 0.985660I$	$-9.00480 - 3.51911I$	$-6.70931 + 3.75254I$
$u = -0.520579 + 1.217160I$ $a = 1.41643 - 0.01039I$ $b = 2.34549 - 0.39766I$	$-9.00480 - 3.51911I$	$-6.70931 + 3.75254I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.520579 - 1.217160I$ $a = 0.310968 + 1.284780I$ $b = 0.120416 + 0.985660I$	$-9.00480 + 3.51911I$	$-6.70931 - 3.75254I$
$u = -0.520579 - 1.217160I$ $a = 1.41643 + 0.01039I$ $b = 2.34549 + 0.39766I$	$-9.00480 + 3.51911I$	$-6.70931 - 3.75254I$
$u = 0.261916 + 1.297730I$ $a = 0.020854 - 0.716031I$ $b = 0.182845 + 0.396366I$	$-4.42818 + 0.58231I$	$0.85328 - 2.04557I$
$u = 0.261916 + 1.297730I$ $a = -1.40607 - 0.80438I$ $b = -2.21703 - 0.91007I$	$-4.42818 + 0.58231I$	$0.85328 - 2.04557I$
$u = 0.261916 - 1.297730I$ $a = 0.020854 + 0.716031I$ $b = 0.182845 - 0.396366I$	$-4.42818 - 0.58231I$	$0.85328 + 2.04557I$
$u = 0.261916 - 1.297730I$ $a = -1.40607 + 0.80438I$ $b = -2.21703 + 0.91007I$	$-4.42818 - 0.58231I$	$0.85328 + 2.04557I$
$u = 0.585635$ $a = 0.23172 + 2.31597I$ $b = 0.989112 + 0.591455I$	-3.88049	1.05620
$u = 0.585635$ $a = 0.23172 - 2.31597I$ $b = 0.989112 - 0.591455I$	-3.88049	1.05620
$u = -0.43937 + 1.41900I$ $a = -0.136932 + 0.381950I$ $b = -0.399054 - 0.558077I$	$-9.7235 - 13.1451I$	$-2.87381 + 8.00014I$
$u = -0.43937 + 1.41900I$ $a = -1.83297 + 0.18088I$ $b = -2.83221 + 0.11599I$	$-9.7235 - 13.1451I$	$-2.87381 + 8.00014I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.43937-1.41900I$ $a=-0.136932-0.381950I$ $b=-0.399054+0.558077I$	$-9.7235+13.1451I$	$-2.87381-8.00014I$
$u=-0.43937-1.41900I$ $a=-1.83297-0.18088I$ $b=-2.83221-0.11599I$	$-9.7235+13.1451I$	$-2.87381-8.00014I$
$u=\ 0.035691+0.462074I$ $a=-0.047221-0.354434I$ $b=-0.399260+1.160460I$	$0.93924+2.34318I$	$11.9184+9.2243I$
$u=\ 0.035691+0.462074I$ $a=-1.88888+1.66026I$ $b=-0.014065+0.524425I$	$0.93924+2.34318I$	$11.9184+9.2243I$
$u=\ 0.035691-0.462074I$ $a=-0.047221+0.354434I$ $b=-0.399260-1.160460I$	$0.93924-2.34318I$	$11.9184-9.2243I$
$u=\ 0.035691-0.462074I$ $a=-1.88888-1.66026I$ $b=-0.014065-0.524425I$	$0.93924-2.34318I$	$11.9184-9.2243I$
$u=\ 0.14079+1.54845I$ $a=-1.080100+0.342845I$ $b=-2.23176-0.04950I$	$-15.8339+5.3491I$	$-7.74364-3.13359I$
$u=\ 0.14079+1.54845I$ $a=\ 1.88425-0.16237I$ $b=\ 2.79363-0.26921I$	$-15.8339+5.3491I$	$-7.74364-3.13359I$
$u=\ 0.14079-1.54845I$ $a=-1.080100-0.342845I$ $b=-2.23176+0.04950I$	$-15.8339-5.3491I$	$-7.74364+3.13359I$
$u=\ 0.14079-1.54845I$ $a=\ 1.88425+0.16237I$ $b=\ 2.79363+0.26921I$	$-15.8339-5.3491I$	$-7.74364+3.13359I$

III. $\boldsymbol{I_3^u = \langle -1.77\times 10^{28}u^{29} + 1.42\times 10^{29}u^{28} + \cdots + 2.17\times 10^{29}b + 4.09\times 10^{29},\ 1.02\times 10^{29}u^{29} - 4.14\times 10^{29}u^{28} + \cdots + 4.66\times 10^{30}a - 8.84\times 10^{30},\ u^{30} - 8u^{29} + \cdots - 148u + 43\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0219666u^{29} + 0.0888867u^{28} + \cdots + 0.298145u + 1.89885 \\ 0.0818533u^{29} - 0.657640u^{28} + \cdots + 9.92980u - 1.88984 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.0321478u^{29} + 0.0808101u^{28} + \cdots + 8.27059u - 1.71451 \\ 0.0716720u^{29} - 0.665717u^{28} + \cdots + 17.9022u - 5.50320 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0704699u^{29} + 0.550645u^{28} + \cdots - 8.18718u + 4.94852 \\ -0.0379149u^{29} + 0.345413u^{28} + \cdots - 6.57038u + 2.46631 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0366426u^{29} + 0.259362u^{28} + \cdots - 6.63127u + 4.11399 \\ 0.0300022u^{29} - 0.243000u^{28} + \cdots + 3.11454u + 0.123136 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.0280214u^{29} - 0.381962u^{28} + \cdots + 17.7589u - 8.40340 \\ 0.154881u^{29} - 1.25831u^{28} + \cdots + 21.8368u - 8.10010 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.104726u^{29} - 0.766133u^{28} + \cdots - 0.915910u + 2.40284 \\ -0.0946306u^{29} + 0.749606u^{28} + \cdots - 18.9034u + 10.2528 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0439498u^{29} - 0.269745u^{28} + \cdots - 6.25999u + 3.42523 \\ -0.0840317u^{29} + 0.682435u^{28} + \cdots - 11.5766u + 4.46425 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0573560u^{29} + 0.420933u^{28} + \cdots - 2.70616u + 1.91831 \\ -0.0552081u^{29} + 0.398971u^{28} + \cdots - 2.33592u + 1.39986 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.444120u^{29} + 3.62226u^{28} + \cdots - 75.2699u + 36.1756$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{30} - 2u^{29} + \cdots + 22u + 1$
c_2, c_6, c_8 c_{12}	$(u^{15} + 2u^{14} + \cdots - 2u - 2)^2$
c_3, c_5, c_9 c_{11}	$u^{30} - 8u^{29} + \cdots - 148u + 43$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{30} - 18y^{29} + \cdots - 206y + 1$
c_2, c_6, c_8 c_{12}	$(y^{15} + 16y^{14} + \cdots - 32y - 4)^2$
c_3, c_5, c_9 c_{11}	$y^{30} + 16y^{29} + \cdots + 1144y + 1849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.591752 + 0.825766I$ $a = -0.404241 + 0.288042I$ $b = -0.014065 + 0.524425I$	$0.93924 + 2.34318I$	$11.9184 + 9.2243I$
$u = 0.591752 - 0.825766I$ $a = -0.404241 - 0.288042I$ $b = -0.014065 - 0.524425I$	$0.93924 - 2.34318I$	$11.9184 - 9.2243I$
$u = -0.075236 + 1.080100I$ $a = -1.00453 + 1.06811I$ $b = -2.21703 + 0.91007I$	$-4.42818 - 0.58231I$	$0.85328 + 2.04557I$
$u = -0.075236 - 1.080100I$ $a = -1.00453 - 1.06811I$ $b = -2.21703 - 0.91007I$	$-4.42818 + 0.58231I$	$0.85328 - 2.04557I$
$u = 0.443554 + 1.009940I$ $a = 0.775618 - 0.105347I$ $b = 0.989112 - 0.591455I$	-3.88049	$-61.056179 + 0.10I$
$u = 0.443554 - 1.009940I$ $a = 0.775618 + 0.105347I$ $b = 0.989112 + 0.591455I$	-3.88049	$-61.056179 + 0.10I$
$u = 1.059000 + 0.505555I$ $a = 0.52794 + 1.39650I$ $b = 0.083565 + 0.439251I$	$-9.63722 + 1.22028I$	$-4.95246 - 1.57507I$
$u = 1.059000 - 0.505555I$ $a = 0.52794 - 1.39650I$ $b = 0.083565 - 0.439251I$	$-9.63722 - 1.22028I$	$-4.95246 + 1.57507I$
$u = 0.449007 + 1.109600I$ $a = -0.310623 - 0.117713I$ $b = -0.455331 + 0.530841I$	$-1.36431 + 3.70005I$	$4.97943 - 3.63821I$
$u = 0.449007 - 1.109600I$ $a = -0.310623 + 0.117713I$ $b = -0.455331 - 0.530841I$	$-1.36431 - 3.70005I$	$4.97943 + 3.63821I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.712558+0.108600I$ $a=-0.25372-1.78675I$ $b=-0.399260-1.160460I$	$0.93924-2.34318I$	$11.9184-9.2243I$
$u=-0.712558-0.108600I$ $a=-0.25372+1.78675I$ $b=-0.399260+1.160460I$	$0.93924+2.34318I$	$11.9184+9.2243I$
$u=-0.012294+1.332420I$ $a=\;\;1.42848-0.77990I$ $b=\;\;2.34549-0.39766I$	$-9.00480-3.51911I$	$-6.70931+3.75254I$
$u=-0.012294-1.332420I$ $a=\;\;1.42848+0.77990I$ $b=\;\;2.34549+0.39766I$	$-9.00480+3.51911I$	$-6.70931-3.75254I$
$u=\;\;0.645515+0.054065I$ $a=\;\;0.751134-0.625068I$ $b=-0.439042-0.323007I$	$-1.36431+3.70005I$	$4.97943-3.63821I$
$u=\;\;0.645515-0.054065I$ $a=\;\;0.751134+0.625068I$ $b=-0.439042+0.323007I$	$-1.36431-3.70005I$	$4.97943+3.63821I$
$u=\;\;0.29345+1.39308I$ $a=\;\;1.70894-0.39664I$ $b=\;\;2.79363-0.26921I$	$-15.8339+5.3491I$	$-7.74364-3.13359I$
$u=\;\;0.29345-1.39308I$ $a=\;\;1.70894+0.39664I$ $b=\;\;2.79363+0.26921I$	$-15.8339-5.3491I$	$-7.74364+3.13359I$
$u=\;\;1.44906+0.04107I$ $a=-0.12382-1.54513I$ $b=-0.399054-0.558077I$	$-9.7235-13.1451I$	$-2.87381+8.00014I$
$u=\;\;1.44906-0.04107I$ $a=-0.12382+1.54513I$ $b=-0.399054+0.558077I$	$-9.7235+13.1451I$	$-2.87381-8.00014I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.53111 + 1.38940I$ $a = -1.83564 - 0.05128I$ $b = -2.83221 - 0.11599I$	$-9.7235 + 13.1451I$	$-2.87381 - 8.00014I$
$u = 0.53111 - 1.38940I$ $a = -1.83564 + 0.05128I$ $b = -2.83221 + 0.11599I$	$-9.7235 - 13.1451I$	$-2.87381 + 8.00014I$
$u = -1.40117 + 0.50158I$ $a = 0.054654 + 1.276660I$ $b = 0.182845 + 0.396366I$	$-4.42818 + 0.58231I$	$0.85328 - 2.04557I$
$u = -1.40117 - 0.50158I$ $a = 0.054654 - 1.276660I$ $b = 0.182845 - 0.396366I$	$-4.42818 - 0.58231I$	$0.85328 + 2.04557I$
$u = 0.55829 + 1.41828I$ $a = 1.71347 - 0.13431I$ $b = 2.47269 + 0.15514I$	$-9.63722 - 1.22028I$	$-4.95246 + 1.57507I$
$u = 0.55829 - 1.41828I$ $a = 1.71347 + 0.13431I$ $b = 2.47269 - 0.15514I$	$-9.63722 + 1.22028I$	$-4.95246 - 1.57507I$
$u = -0.264872 + 0.387644I$ $a = 1.63538 - 1.39243I$ $b = 0.120416 + 0.985660I$	$-9.00480 + 3.51911I$	$-6.70931 - 3.75254I$
$u = -0.264872 - 0.387644I$ $a = 1.63538 + 1.39243I$ $b = 0.120416 - 0.985660I$	$-9.00480 - 3.51911I$	$-6.70931 + 3.75254I$
$u = 0.44538 + 1.83853I$ $a = -1.45375 + 0.31455I$ $b = -2.23176 + 0.04950I$	$-15.8339 - 5.3491I$	0
$u = 0.44538 - 1.83853I$ $a = -1.45375 - 0.31455I$ $b = -2.23176 - 0.04950I$	$-15.8339 + 5.3491I$	0

IV.

$\boldsymbol{I^u_4 = \langle -3.21\times10^7u^{19}+1.04\times10^7u^{18}+\cdots+1.24\times10^7b-2.92\times10^7,\ -3.21\times10^7u^{19}+1.04\times10^7u^{18}+\cdots+1.24\times10^7a-1.68\times10^7,\ 2u^{20}+11u^{18}+\cdots+4u+1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_8 = \begin{pmatrix}2.57997u^{19}-0.839802u^{18}+\cdots+5.83982u+1.35447\\2.57997u^{19}-0.839802u^{18}+\cdots+5.83982u+2.35447\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_9 = \begin{pmatrix}2.57997u^{19}-0.839802u^{18}+\cdots+5.83982u+1.35447\\2.57997u^{19}-0.839802u^{18}+\cdots+5.83982u+2.35447\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.839802u^{19}+0.560480u^{18}+\cdots+4.80547u+1.28998\\0.839802u^{19}+0.560480u^{18}+\cdots+3.80547u+1.28998\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-2.75425u^{19}+1.12237u^{18}+\cdots-0.266870u+0.439076\\-1.80815u^{19}+2.12100u^{18}+\cdots+2.27399u+0.719316\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.368104u^{19}+0.851099u^{18}+\cdots+1.54512u+0.318890\\1.07331u^{19}+1.27931u^{18}+\cdots+5.66065u+2.13487\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-2.33263u^{19}+4.14232u^{18}+\cdots+1.61849u-0.565148\\0.0638148u^{19}+2.08837u^{18}+\cdots+2.36860u-0.271319\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-2.39644u^{19}+2.05395u^{18}+\cdots-0.750113u-0.293830\\-1.78017u^{19}+0.847531u^{18}+\cdots-2.86952u-1.57817\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.946107u^{19}+0.998631u^{18}+\cdots+2.54086u+0.280240\\1.82394u^{19}+0.0731794u^{18}+\cdots+4.73492u+1.50906\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{201044}{3105771}u^{19}-\frac{4918603}{3105771}u^{18}+\cdots-\frac{11843897}{1035257}u+\frac{24068461}{6211542}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^{10} + 2u^9 + u^8 - 2u^7 - 3u^6 + 2u^4 + 2u^3 - 3u^2 - 2u - 2)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$2(2u^{20} + 11u^{18} + \cdots + 4u + 1)$
c_4, c_{10}	$4(4u^{20} - 28u^{19} + \cdots - 448u + 73)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^{10} - 2y^9 + 3y^8 - 6y^7 - y^6 - 6y^5 + 10y^4 - 4y^3 + 9y^2 + 8y + 4)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$4(4y^{20} + 44y^{19} + \cdots - 6y + 1)$
c_4, c_{10}	$16(16y^{20} - 8y^{19} + \cdots + 42678y + 5329)$

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.863041+0.424455I$		
$a=$	$0.150300-0.336990I$	$-1.77310+4.32568I$	$2.37801-5.30660I$
$b=$	$1.150300-0.336990I$		
$u=$	$0.863041-0.424455I$		
$a=$	$0.150300+0.336990I$	$-1.77310-4.32568I$	$2.37801+5.30660I$
$b=$	$1.150300+0.336990I$		
$u=$	$0.532247+0.733699I$		
$a=$	$0.094270-0.781019I$	-3.96232	$2.14246+0.I$
$b=$	$1.094270-0.781019I$		
$u=$	$0.532247-0.733699I$		
$a=$	$0.094270+0.781019I$	-3.96232	$2.14246+0.I$
$b=$	$1.094270+0.781019I$		
$u=$	$-0.854424+0.268587I$		
$a=$	$0.208143-1.003220I$	$-4.52678-8.23619I$	$1.62263+8.93292I$
$b=$	$1.20814-1.00322I$		
$u=$	$-0.854424-0.268587I$		
$a=$	$0.208143+1.003220I$	$-4.52678+8.23619I$	$1.62263-8.93292I$
$b=$	$1.20814+1.00322I$		
$u=$	$-0.294566+0.835743I$		
$a=$	$-1.091400+0.492363I$	-7.15291	$-10.64039+0.I$
$b=$	$-0.091403+0.492363I$		
$u=$	$-0.294566-0.835743I$		
$a=$	$-1.091400-0.492363I$	-7.15291	$-10.64039+0.I$
$b=$	$-0.091403-0.492363I$		
$u=$	$-0.219333+1.144070I$		
$a=$	$1.97577+0.10621I$	$-1.77310-4.32568I$	$2.37801+5.30660I$
$b=$	$2.97577+0.10621I$		
$u=$	$-0.219333-1.144070I$		
$a=$	$1.97577-0.10621I$	$-1.77310+4.32568I$	$2.37801-5.30660I$
$b=$	$2.97577-0.10621I$		

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.482255 + 0.664266I$ $a = -0.579450 + 0.348965I$ $b = 0.420550 + 0.348965I$	$0.97046 + 1.97408I$	$9.55166 - 2.43496I$
$u = 0.482255 - 0.664266I$ $a = -0.579450 - 0.348965I$ $b = 0.420550 - 0.348965I$	$0.97046 - 1.97408I$	$9.55166 + 2.43496I$
$u = -0.365634 + 1.127630I$ $a = 0.27691 - 1.63768I$ $b = 1.27691 - 1.63768I$	$-10.4971 - 10.3444I$	$-5.80333 + 10.34256I$
$u = -0.365634 - 1.127630I$ $a = 0.27691 + 1.63768I$ $b = 1.27691 + 1.63768I$	$-10.4971 + 10.3444I$	$-5.80333 - 10.34256I$
$u = -0.445937 + 1.170140I$ $a = 2.03642 - 0.41858I$ $b = 3.03642 - 0.41858I$	$-4.52678 - 8.23619I$	$1.62263 + 8.93292I$
$u = -0.445937 - 1.170140I$ $a = 2.03642 + 0.41858I$ $b = 3.03642 + 0.41858I$	$-4.52678 + 8.23619I$	$1.62263 - 8.93292I$
$u = -0.387590 + 0.116004I$ $a = -0.92490 + 1.07958I$ $b = 0.075100 + 1.079580I$	$0.97046 + 1.97408I$	$9.55166 - 2.43496I$
$u = -0.387590 - 0.116004I$ $a = -0.92490 - 1.07958I$ $b = 0.075100 - 1.079580I$	$0.97046 - 1.97408I$	$9.55166 + 2.43496I$
$u = 0.68994 + 1.64040I$ $a = 1.353940 + 0.198723I$ $b = 2.35394 + 0.19872I$	$-10.4971 + 10.3444I$	$-5.80333 - 10.34256I$
$u = 0.68994 - 1.64040I$ $a = 1.353940 - 0.198723I$ $b = 2.35394 - 0.19872I$	$-10.4971 - 10.3444I$	$-5.80333 + 10.34256I$

V.
$\boldsymbol{I_5^u = \langle -2.55\times 10^{7}u^{19} + 1.51\times 10^{6}u^{18} + \cdots + 1.24\times 10^{7}b - 1.49\times 10^{7},\ -3.24\times 10^{7}u^{19} + 1.18\times 10^{7}u^{18} + \cdots + 6.21\times 10^{6}a - 2.88\times 10^{7},\ 2u^{20} + 11u^{18} + \cdots + 4u + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5.21028u^{19} - 1.90136u^{18} + \cdots + 9.08615u + 4.64137 \\ 2.05395u^{19} - 0.121186u^{18} + \cdots + 4.49906u + 1.19822 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 4.36275u^{19} - 1.87619u^{18} + \cdots + 7.10397u + 3.75128 \\ 1.20642u^{19} - 0.0960206u^{18} + \cdots + 2.51688u + 0.308135 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -2.01949u^{19} - 0.106305u^{18} + \cdots - 6.22944u - 1.77437 \\ 0.998631u^{19} - 1.93025u^{18} + \cdots - 1.61197u - 0.473054 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2.08425u^{19} - 1.02147u^{18} + \cdots + 4.71094u + 2.53696 \\ 0.428211u^{19} - 1.79215u^{18} + \cdots + 0.405560u - 0.352605 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 5.54874u^{19} - 2.01949u^{18} + \cdots + 11.7767u + 4.86805 \\ u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -2.61627u^{19} + 1.20642u^{18} + \cdots - 2.88059u - 2.71566 \\ -0.925452u^{19} + 0.450391u^{18} + \cdots - 0.526847u - 0.438917 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -4.70894u^{19} + 2.57997u^{18} + \cdots - 7.97120u - 3.57806 \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2.57997u^{19} + 0.839802u^{18} + \cdots - 5.83982u - 1.35447 \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{201044}{3105771}u^{19} - \frac{4918603}{3105771}u^{18} + \cdots - \frac{11843897}{1035257}u + \frac{24068461}{6211542}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$4(4u^{20} - 28u^{19} + \cdots - 448u + 73)$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$2(2u^{20} + 11u^{18} + \cdots + 4u + 1)$
c_4, c_{10}	$(u^{10} + 2u^9 + u^8 - 2u^7 - 3u^6 + 2u^4 + 2u^3 - 3u^2 - 2u - 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$16(16y^{20} - 8y^{19} + \cdots + 42678y + 5329)$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$4(4y^{20} + 44y^{19} + \cdots - 6y + 1)$
c_4, c_{10}	$(y^{10} - 2y^9 + 3y^8 - 6y^7 - y^6 - 6y^5 + 10y^4 - 4y^3 + 9y^2 + 8y + 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.863041 + 0.424455I$ $a = 0.485394 + 0.775205I$ $b = -0.244227 - 0.191588I$	$-1.77310 + 4.32568I$	$2.37801 - 5.30660I$
$u = 0.863041 - 0.424455I$ $a = 0.485394 - 0.775205I$ $b = -0.244227 + 0.191588I$	$-1.77310 - 4.32568I$	$2.37801 + 5.30660I$
$u = 0.532247 + 0.733699I$ $a = 1.44676 + 0.95061I$ $b = 1.13636$	-3.96232	$2.14246 + 0.I$
$u = 0.532247 - 0.733699I$ $a = 1.44676 - 0.95061I$ $b = 1.13636$	-3.96232	$2.14246 + 0.I$
$u = -0.854424 + 0.268587I$ $a = -0.30663 + 1.50788I$ $b = 0.560140 + 0.410838I$	$-4.52678 - 8.23619I$	$1.62263 + 8.93292I$
$u = -0.854424 - 0.268587I$ $a = -0.30663 - 1.50788I$ $b = 0.560140 - 0.410838I$	$-4.52678 + 8.23619I$	$1.62263 - 8.93292I$
$u = -0.294566 + 0.835743I$ $a = -2.23987 - 0.62703I$ $b = -3.01887$	-7.15291	$-10.64039 + 0.I$
$u = -0.294566 - 0.835743I$ $a = -2.23987 + 0.62703I$ $b = -3.01887$	-7.15291	$-10.64039 + 0.I$
$u = -0.219333 + 1.144070I$ $a = 0.253117 + 0.850599I$ $b = -0.244227 + 0.191588I$	$-1.77310 - 4.32568I$	$2.37801 + 5.30660I$
$u = -0.219333 - 1.144070I$ $a = 0.253117 - 0.850599I$ $b = -0.244227 - 0.191588I$	$-1.77310 + 4.32568I$	$2.37801 - 5.30660I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.482255 + 0.664266I$ $a = -0.071592 + 0.163124I$ $b = -0.234632 + 0.628244I$	$0.97046 + 1.97408I$	$9.55166 - 2.43496I$
$u = 0.482255 - 0.664266I$ $a = -0.071592 - 0.163124I$ $b = -0.234632 - 0.628244I$	$0.97046 - 1.97408I$	$9.55166 + 2.43496I$
$u = -0.365634 + 1.127630I$ $a = -1.144170 + 0.105482I$ $b = -2.64003 - 0.02134I$	$-10.4971 - 10.3444I$	$-5.80333 + 10.34256I$
$u = -0.365634 - 1.127630I$ $a = -1.144170 - 0.105482I$ $b = -2.64003 + 0.02134I$	$-10.4971 + 10.3444I$	$-5.80333 - 10.34256I$
$u = -0.445937 + 1.170140I$ $a = 0.116733 - 0.150369I$ $b = 0.560140 + 0.410838I$	$-4.52678 - 8.23619I$	$1.62263 + 8.93292I$
$u = -0.445937 - 1.170140I$ $a = 0.116733 + 0.150369I$ $b = 0.560140 - 0.410838I$	$-4.52678 + 8.23619I$	$1.62263 - 8.93292I$
$u = -0.387590 + 0.116004I$ $a = 0.43654 + 2.54296I$ $b = -0.234632 + 0.628244I$	$0.97046 + 1.97408I$	$9.55166 - 2.43496I$
$u = -0.387590 - 0.116004I$ $a = 0.43654 - 2.54296I$ $b = -0.234632 - 0.628244I$	$0.97046 - 1.97408I$	$9.55166 + 2.43496I$
$u = 0.68994 + 1.64040I$ $a = -1.97628 + 0.07761I$ $b = -2.64003 + 0.02134I$	$-10.4971 + 10.3444I$	$-5.80333 - 10.34256I$
$u = 0.68994 - 1.64040I$ $a = -1.97628 - 0.07761I$ $b = -2.64003 - 0.02134I$	$-10.4971 - 10.3444I$	$-5.80333 + 10.34256I$

VI. $\boldsymbol{I_6^u = \langle 2u^6a + 5u^6 + \cdots - a + 2,\ -u^6a - u^5a + \cdots + a^2 + 1,\ u^7 + u^6 + 4u^5 + 3u^4 + 5u^3 + 3u^2 + u + 1\rangle}$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}a\\-\frac{1}{3}u^6a - \frac{5}{6}u^6 + \cdots + \frac{1}{6}a - \frac{1}{3}\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}\frac{1}{6}u^6a + \frac{2}{3}u^6 + \cdots + \frac{7}{6}a + \frac{1}{6}\\-\frac{1}{6}u^6a - \frac{1}{6}u^6 + \cdots + \frac{1}{3}a - \frac{1}{6}\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-\frac{1}{6}u^6a + \frac{1}{3}u^6 + \cdots - \frac{7}{6}a + \frac{5}{6}\\\frac{1}{2}u^6a + u^6 + \cdots - \frac{1}{2}a + \frac{1}{2}\end{pmatrix}$$

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

$$a_7 = \begin{pmatrix}\frac{2}{3}u^6a + \frac{1}{6}u^6 + \cdots + \frac{13}{6}a - \frac{1}{3}\\-\frac{1}{2}u^6a - \frac{1}{2}u^6 + \cdots + a - \frac{1}{2}\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-\frac{1}{6}u^6a - \frac{1}{6}u^6 + \cdots + \frac{4}{3}a + \frac{5}{6}\\-\frac{1}{3}u^6a + \frac{1}{6}u^6 + \cdots + \frac{1}{6}a - \frac{4}{3}\end{pmatrix}$$

$$a_6 = \begin{pmatrix}\frac{1}{6}u^6a - \frac{1}{3}u^6 + \cdots + \frac{7}{6}a + \frac{1}{6}\\-\frac{1}{6}u^6a - \frac{1}{6}u^6 + \cdots + \frac{1}{3}a - \frac{7}{6}\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-\frac{1}{2}u^6a - \frac{1}{2}u^6 + \cdots - a + \frac{1}{2}\\\frac{1}{3}u^6a + \frac{1}{3}u^6 + \cdots - \frac{2}{3}a + \frac{1}{3}\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^6 - 10u^5 - 13u^4 - 32u^3 - 22u^2 - 29u - 16$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{14} - u^{13} + \cdots - 6u + 1$
c_2, c_8	$u^{14} + 7u^{13} + \cdots + 20u + 4$
c_3, c_9	$(u^7 + u^6 + 4u^5 + 3u^4 + 5u^3 + 3u^2 + u + 1)^2$
c_5, c_{11}	$(u^7 - u^6 + 4u^5 - 3u^4 + 5u^3 - 3u^2 + u - 1)^2$
c_6, c_{12}	$u^{14} - 7u^{13} + \cdots - 20u + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{14} + 7y^{13} + \cdots - 6y + 1$
c_2, c_6, c_8 c_{12}	$y^{14} + 3y^{13} + \cdots + 16y + 16$
c_3, c_5, c_9 c_{11}	$(y^7 + 7y^6 + 20y^5 + 27y^4 + 13y^3 - 5y^2 - 5y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.727632$ $a = 0.55098 + 1.42676I$ $b = 0.190731 - 0.051917I$	-1.45874	3.88000
$u = -0.727632$ $a = 0.55098 - 1.42676I$ $b = 0.190731 + 0.051917I$	-1.45874	3.88000
$u = 0.181669 + 1.341540I$ $a = 0.102984 + 0.460514I$ $b = 0.021966 - 0.804617I$	$-5.18918 + 0.24371I$	$-8.52695 + 1.31812I$
$u = 0.181669 + 1.341540I$ $a = -1.38378 - 1.07006I$ $b = -2.13249 - 1.12742I$	$-5.18918 + 0.24371I$	$-8.52695 + 1.31812I$
$u = 0.181669 - 1.341540I$ $a = 0.102984 - 0.460514I$ $b = 0.021966 + 0.804617I$	$-5.18918 - 0.24371I$	$-8.52695 - 1.31812I$
$u = 0.181669 - 1.341540I$ $a = -1.38378 + 1.07006I$ $b = -2.13249 + 1.12742I$	$-5.18918 - 0.24371I$	$-8.52695 - 1.31812I$
$u = 0.111545 + 0.598906I$ $a = -0.098390 - 0.225904I$ $b = 0.208665 - 1.320170I$	$0.76719 + 2.52853I$	$-9.7693 - 13.5452I$
$u = 0.111545 + 0.598906I$ $a = -1.31371 + 1.24073I$ $b = 0.148089 + 0.421187I$	$0.76719 + 2.52853I$	$-9.7693 - 13.5452I$
$u = 0.111545 - 0.598906I$ $a = -0.098390 + 0.225904I$ $b = 0.208665 + 1.320170I$	$0.76719 - 2.52853I$	$-9.7693 + 13.5452I$
$u = 0.111545 - 0.598906I$ $a = -1.31371 - 1.24073I$ $b = 0.148089 - 0.421187I$	$0.76719 - 2.52853I$	$-9.7693 + 13.5452I$

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.42940 + 1.35504I$ $a = -1.291350 + 0.284587I$ $b = -2.47211 + 0.16468I$	$-9.65304 - 8.50275I$	$-4.64372 + 5.74713I$
$u = -0.42940 + 1.35504I$ $a = \quad 0.933270 - 0.968989I$ $b = \quad 1.53514 - 0.86559I$	$-9.65304 - 8.50275I$	$-4.64372 + 5.74713I$
$u = -0.42940 - 1.35504I$ $a = -1.291350 - 0.284587I$ $b = -2.47211 - 0.16468I$	$-9.65304 + 8.50275I$	$-4.64372 - 5.74713I$
$u = -0.42940 - 1.35504I$ $a = \quad 0.933270 + 0.968989I$ $b = \quad 1.53514 + 0.86559I$	$-9.65304 + 8.50275I$	$-4.64372 - 5.74713I$

VII. $I_7^u = \langle 177u^{13} - 1117u^{12} + \cdots + 52b - 1064,\ 296u^{13} - 1867u^{12} + \cdots + 52a - 1718,\ u^{14} - 7u^{13} + \cdots - 20u + 4\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.69231u^{13} + 35.9038u^{12} + \cdots - 118.846u + 33.0385 \\ -3.40385u^{13} + 21.4808u^{12} + \cdots - 73.0385u + 20.4615 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -4.69231u^{13} + 29.5577u^{12} + \cdots - 96.0769u + 26.6538 \\ -2.40385u^{13} + 15.1346u^{12} + \cdots - 50.2692u + 14.0769 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.21154u^{13} - 8.11538u^{12} + \cdots + 27u - 7.57692 \\ 0.480769u^{13} - 3.51923u^{12} + \cdots + 14.1923u - 3.38462 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.13462u^{13} + 7.46154u^{12} + \cdots - 25.4231u + 6.19231 \\ -0.173077u^{13} + 1.09615u^{12} + \cdots - 10.4231u + 2.61538 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -4.75000u^{13} + 29.8846u^{12} + \cdots - 99.0769u + 28.0385 \\ -1.01923u^{13} + 6.21154u^{12} + \cdots - 18.6538u + 5.53846 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.67308u^{13} + 10.0769u^{12} + \cdots - 25.2692u + 7.03846 \\ -0.403846u^{13} + 2.40385u^{12} + \cdots - 1.42308u + 0.153846 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -5.11538u^{13} + 32.4038u^{12} + \cdots - 105u + 29.2692 \\ -1.59615u^{13} + 10.1731u^{12} + \cdots - 33.1923u + 9.15385 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.846154u^{13} - 5.44231u^{12} + \cdots + 10.3462u - 2.73077 \\ 0.519231u^{13} - 3.55769u^{12} + \cdots + 10.4231u - 2.92308 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{454}{13}u^{13} + \frac{2870}{13}u^{12} - \frac{9845}{13}u^{11} + \frac{23675}{13}u^{10} - \frac{42801}{13}u^9 + \frac{62428}{13}u^8 - \frac{76369}{13}u^7 + \frac{78835}{13}u^6 - \frac{71328}{13}u^5 + \frac{55147}{13}u^4 - \frac{37555}{13}u^3 + \frac{20790}{13}u^2 - \frac{9494}{13}u + \frac{2552}{13}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$u^{14} - u^{13} + \cdots - 6u + 1$
c_2, c_8	$(u^7 - u^6 + 4u^5 - 3u^4 + 5u^3 - 3u^2 + u - 1)^2$
c_3, c_9	$u^{14} - 7u^{13} + \cdots - 20u + 4$
c_5, c_{11}	$u^{14} + 7u^{13} + \cdots + 20u + 4$
c_6, c_{12}	$(u^7 + u^6 + 4u^5 + 3u^4 + 5u^3 + 3u^2 + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^{14} + 7y^{13} + \cdots - 6y + 1$
c_2, c_6, c_8 c_{12}	$(y^7 + 7y^6 + 20y^5 + 27y^4 + 13y^3 - 5y^2 - 5y - 1)^2$
c_3, c_5, c_9 c_{11}	$y^{14} + 3y^{13} + \cdots + 16y + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_7	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.059064 + 1.014840I$ $a = -0.80465 + 1.22915I$ $b = -2.13249 + 1.12742I$	$-5.18918 - 0.24371I$	$-8.52695 - 1.31812I$
$u = -0.059064 - 1.014840I$ $a = -0.80465 - 1.22915I$ $b = -2.13249 - 1.12742I$	$-5.18918 + 0.24371I$	$-8.52695 + 1.31812I$
$u = 0.653886 + 0.784063I$ $a = -0.372401 + 0.129379I$ $b = 0.148089 + 0.421187I$	$0.76719 + 2.52853I$	$-9.7693 - 13.5452I$
$u = 0.653886 - 0.784063I$ $a = -0.372401 - 0.129379I$ $b = 0.148089 - 0.421187I$	$0.76719 - 2.52853I$	$-9.7693 + 13.5452I$
$u = 0.262126 + 1.075930I$ $a = 0.346261 - 0.690308I$ $b = 0.190731 - 0.051917I$	-1.45874	$3.87999 + 0.I$
$u = 0.262126 - 1.075930I$ $a = 0.346261 + 0.690308I$ $b = 0.190731 + 0.051917I$	-1.45874	$3.87999 + 0.I$
$u = -0.398553 + 0.771164I$ $a = -0.078706 - 0.588337I$ $b = 1.53514 - 0.86559I$	$-9.65304 - 8.50275I$	$-4.64372 + 5.74713I$
$u = -0.398553 - 0.771164I$ $a = -0.078706 + 0.588337I$ $b = 1.53514 + 0.86559I$	$-9.65304 + 8.50275I$	$-4.64372 - 5.74713I$
$u = 0.689615 + 0.061837I$ $a = -0.02905 - 2.16732I$ $b = 0.208665 - 1.320170I$	$0.76719 + 2.52853I$	$-9.7693 - 13.5452I$
$u = 0.689615 - 0.061837I$ $a = -0.02905 + 2.16732I$ $b = 0.208665 + 1.320170I$	$0.76719 - 2.52853I$	$-9.7693 + 13.5452I$

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.66949 + 1.54849I$ $a = -1.63384 - 0.07956I$ $b = -2.47211 - 0.16468I$	$-9.65304 + 8.50275I$	$-4.64372 - 5.74713I$
$u = 0.66949 - 1.54849I$ $a = -1.63384 + 0.07956I$ $b = -2.47211 + 0.16468I$	$-9.65304 - 8.50275I$	$-4.64372 + 5.74713I$
$u = 1.68250 + 0.33852I$ $a = 0.07238 + 1.59182I$ $b = 0.021966 + 0.804617I$	$-5.18918 - 0.24371I$	$-8.52695 - 1.31812I$
$u = 1.68250 - 0.33852I$ $a = 0.07238 - 1.59182I$ $b = 0.021966 - 0.804617I$	$-5.18918 + 0.24371I$	$-8.52695 + 1.31812I$

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 16u + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$y^4 - 3y^3 + 5y^2 - 12y + 16$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$(y^2 + y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -0.395644 + 0.228425I$ $b = 0.604356 + 0.228425I$	$-4.93480 - 8.11953I$	$-2.00000 + 13.85641I$
$u = -0.500000 + 0.866025I$ $a = 1.89564 - 1.09445I$ $b = 2.89564 - 1.09445I$	$-4.93480 - 8.11953I$	$-2.00000 + 13.85641I$
$u = -0.500000 - 0.866025I$ $a = -0.395644 - 0.228425I$ $b = 0.604356 - 0.228425I$	$-4.93480 + 8.11953I$	$-2.00000 - 13.85641I$
$u = -0.500000 - 0.866025I$ $a = 1.89564 + 1.09445I$ $b = 2.89564 + 1.09445I$	$-4.93480 + 8.11953I$	$-2.00000 - 13.85641I$

IX. $\boldsymbol{I^u_9 = \langle -2u^3 - 4u^2 + 4b - 3u + 1,\ 2u^3 + 2a + u - 3,\ 2u^4 + 2u^3 + 3u^2 + 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u^3 - \frac{1}{2}u + \frac{3}{2} \\ \frac{1}{2}u^3 + u^2 + \frac{3}{4}u - \frac{1}{4} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{3}{2}u^3 - u^2 - \frac{5}{4}u + \frac{7}{4} \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 + 2u^2 + \frac{7}{2}u + \frac{3}{2} \\ \frac{1}{2}u^3 + \frac{3}{4}u - \frac{3}{4} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2u^3 - u - 3 \\ -\frac{1}{2}u^3 - u^2 - \frac{3}{4}u + \frac{1}{4} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^3 + \frac{1}{2}u - \frac{7}{2} \\ -u^3 - u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 4u^3 + 6u^2 + 6u - 1 \\ -u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{7}{2}u^3 + 4u^2 + \frac{13}{4}u - \frac{13}{4} \\ -u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{1}{2}u^3 + 2u^2 + \frac{13}{4}u + \frac{11}{4} \\ u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^3 - 4u^2 - 3u - \frac{5}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$4(4u^4 - 15u^2 - 2u + 17)$
c_2, c_5, c_8 c_{11}	$2(2u^4 - 2u^3 + 3u^2 + 1)$
c_3, c_6, c_9 c_{12}	$2(2u^4 + 2u^3 + 3u^2 + 1)$
c_4, c_{10}	$(u^2 - 2u + 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$16(16y^4 - 120y^3 + 361y^2 - 514y + 289)$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$4(4y^4 + 8y^3 + 13y^2 + 6y + 1)$
c_4, c_{10}	$(y^2 + 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.637550 + 1.056350I$ $a = -0.056347 - 0.637550I$ $b = -0.500000 - 0.500000I$	$-4.93480 - 7.32772I$	$-1.50000 + 2.00000I$
$u = -0.637550 - 1.056350I$ $a = -0.056347 + 0.637550I$ $b = -0.500000 + 0.500000I$	$-4.93480 + 7.32772I$	$-1.50000 - 2.00000I$
$u = 0.137550 + 0.556347I$ $a = 1.55635 - 0.13755I$ $b = -0.500000 + 0.500000I$	$-4.93480 + 7.32772I$	$-1.50000 - 2.00000I$
$u = 0.137550 - 0.556347I$ $a = 1.55635 + 0.13755I$ $b = -0.500000 - 0.500000I$	$-4.93480 - 7.32772I$	$-1.50000 + 2.00000I$

X.

$$I^u_{10} = \langle -2u^3+8u^2+4b+13u+7,\ -2u^3+8u^2+4a+13u+11,\ 2u^4+2u^3+3u^2+1\rangle$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{1}{2}u^3 - 2u^2 - \frac{13}{4}u - \frac{11}{4} \\ \frac{1}{2}u^3 - 2u^2 - \frac{13}{4}u - \frac{7}{4} \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{1}{2}u^3 - u^2 - \frac{13}{4}u - \frac{11}{4} \\ \frac{1}{2}u^3 - u^2 - \frac{13}{4}u - \frac{7}{4} \end{pmatrix}$$
$$a_1 = \begin{pmatrix} \frac{5}{2}u^3 + 4u^2 + \frac{15}{4}u + \frac{1}{4} \\ \frac{5}{2}u^3 + 4u^2 + \frac{11}{4}u + \frac{1}{4} \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{7}{2}u^3 - \frac{7}{2}u^2 - \frac{23}{4}u + \frac{1}{2} \\ -2u^3 - \frac{3}{2}u^2 - \frac{7}{2}u + \frac{5}{4} \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{9}{4}u^3 + \frac{5}{2}u^2 + \frac{31}{8}u - \frac{1}{8} \\ \frac{7}{4}u^3 + \frac{3}{2}u^2 + \frac{17}{8}u - \frac{7}{8} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{13}{4}u^3 - \frac{11}{2}u^2 - \frac{43}{8}u - \frac{3}{8} \\ -\frac{11}{4}u^3 - \frac{9}{2}u^2 - \frac{29}{8}u + \frac{3}{8} \end{pmatrix}$$
$$a_6 = \begin{pmatrix} \frac{1}{2}u^3 + u^2 + \frac{7}{4}u + \frac{3}{4} \\ \frac{1}{2}u^3 + u^2 + \frac{7}{4}u + \frac{3}{4} \end{pmatrix}$$
$$a_2 = \begin{pmatrix} \frac{3}{2}u^3 + 2u^2 + \frac{9}{4}u + \frac{3}{4} \\ \frac{3}{2}u^3 + 2u^2 + \frac{9}{4}u - \frac{1}{4} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -2u^3 - 4u^2 - 3u - \frac{5}{2}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_7	$(u^2 - 2u + 2)^2$
c_2, c_5, c_8 c_{11}	$2(2u^4 - 2u^3 + 3u^2 + 1)$
c_3, c_6, c_9 c_{12}	$2(2u^4 + 2u^3 + 3u^2 + 1)$
c_4, c_{10}	$4(4u^4 - 15u^2 - 2u + 17)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_7	$(y^2+4)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$4(4y^4+8y^3+13y^2+6y+1)$
c_4, c_{10}	$16(16y^4-120y^3+361y^2-514y+289)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{10}	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.637550 + 1.056350I$ $a = 1.67840 - 0.68454I$ $b = 2.67840 - 0.68454I$	$-4.93480 - 7.32772I$	$-1.50000 + 2.00000I$
$u = -0.637550 - 1.056350I$ $a = 1.67840 + 0.68454I$ $b = 2.67840 + 0.68454I$	$-4.93480 + 7.32772I$	$-1.50000 - 2.00000I$
$u = 0.137550 + 0.556347I$ $a = -2.67840 - 2.18454I$ $b = -1.67840 - 2.18454I$	$-4.93480 + 7.32772I$	$-1.50000 - 2.00000I$
$u = 0.137550 - 0.556347I$ $a = -2.67840 + 2.18454I$ $b = -1.67840 + 2.18454I$	$-4.93480 - 7.32772I$	$-1.50000 + 2.00000I$

XI. $I^u_{11} = \langle u^{11}-2u^{10}+\cdots+2b-2,\ 5u^{11}-11u^{10}+\cdots+4a-16,\ u^{12}-3u^{11}+\cdots+2u^3+4\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{5}{4}u^{11} + \frac{11}{4}u^{10} + \cdots + 2u + 4 \\ -\frac{1}{2}u^{11} + u^{10} + \cdots + u + 1 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -\frac{3}{4}u^{11} + \frac{9}{4}u^{10} + \cdots - u + 2 \\ \frac{1}{2}u^{10} - \frac{1}{2}u^9 + \cdots - 2u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{2}u^{11} - u^{10} + \cdots - u - 1 \\ -\frac{1}{2}u^7 + u^6 - \frac{3}{2}u^5 + u^4 - \frac{1}{2}u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{3}{4}u^{11} + \frac{5}{4}u^{10} + \cdots + 3u + 3 \\ \frac{1}{2}u^{11} - \frac{3}{2}u^{10} + \cdots + u - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{1}{2}u^{10} - \frac{1}{2}u^9 + \cdots - 3u - 1 \\ -\frac{1}{2}u^{11} + u^{10} + \cdots + \frac{3}{2}u^3 - u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{4}u^{11} + \frac{3}{4}u^{10} + \cdots + 3u + 4 \\ \frac{1}{2}u^{10} - 2u^9 + \cdots + 2u + 3 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{4}u^{11} + \frac{1}{4}u^{10} + \cdots + u + 1 \\ -\frac{1}{2}u^{11} + u^{10} + \cdots + 3u + 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{2}u^6 + u^5 - \frac{3}{2}u^4 + u^3 - \frac{1}{2}u^2 + 1 \\ \frac{1}{2}u^{11} - u^{10} + \cdots - u - 2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= -4u^{11} + 8u^{10} - 24u^9 + 27u^8 - 42u^7 + 25u^6 - 14u^5 + u^4 + 22u^3 + 6u^2 + 8u + 10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(u^6 + u^5 - 2u^4 - 3u^3 + 2u^2 + 3u + 1)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$u^{12} - 3u^{11} + 8u^{10} - 13u^9 + 18u^8 - 19u^7 + 13u^6 - 8u^5 - 2u^4 + 2u^3 + 4$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(y^6 - 5y^5 + 14y^4 - 21y^3 + 18y^2 - 5y + 1)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$y^{12} + 7y^{11} + \cdots - 16y^2 + 16$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{11}	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.100452 + 1.034960I$ $a = -0.202900 - 0.823189I$ $b = -0.530318 - 0.263992I$	$-2.48820 + 1.50089I$	$-2.33482 - 4.37930I$
$u = 0.100452 - 1.034960I$ $a = -0.202900 + 0.823189I$ $b = -0.530318 + 0.263992I$	$-2.48820 - 1.50089I$	$-2.33482 + 4.37930I$
$u = 1.131900 + 0.019003I$ $a = -0.04695 - 1.79866I$ $b = 0.247955 - 0.704157I$	$-5.26528 + 7.27175I$	$-1.11360 - 6.02948I$
$u = 1.131900 - 0.019003I$ $a = -0.04695 + 1.79866I$ $b = 0.247955 + 0.704157I$	$-5.26528 - 7.27175I$	$-1.11360 + 6.02948I$
$u = -0.248729 + 1.238530I$ $a = -1.062330 + 0.867734I$ $b = -2.21764 + 0.44171I$	$-11.98570 - 5.80683I$	$-6.55158 + 2.46615I$
$u = -0.248729 - 1.238530I$ $a = -1.062330 - 0.867734I$ $b = -2.21764 - 0.44171I$	$-11.98570 + 5.80683I$	$-6.55158 - 2.46615I$
$u = 0.313008 + 1.244470I$ $a = 0.018436 + 0.147658I$ $b = 0.247955 - 0.704157I$	$-5.26528 + 7.27175I$	$-1.11360 - 6.02948I$
$u = 0.313008 - 1.244470I$ $a = 0.018436 - 0.147658I$ $b = 0.247955 + 0.704157I$	$-5.26528 - 7.27175I$	$-1.11360 + 6.02948I$
$u = -0.611635 + 0.282691I$ $a = 0.249427 - 1.067740I$ $b = -0.530318 + 0.263992I$	$-2.48820 - 1.50089I$	$-2.33482 + 4.37930I$
$u = -0.611635 - 0.282691I$ $a = 0.249427 + 1.067740I$ $b = -0.530318 - 0.263992I$	$-2.48820 + 1.50089I$	$-2.33482 - 4.37930I$

Solutions to I_{11}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.81501 + 1.32491I$ $a = -1.45568 - 0.16073I$ $b = -2.21764 - 0.44171I$	$-11.98570 + 5.80683I$	$-6.55158 - 2.46615I$
$u = 0.81501 - 1.32491I$ $a = -1.45568 + 0.16073I$ $b = -2.21764 + 0.44171I$	$-11.98570 - 5.80683I$	$-6.55158 + 2.46615I$

XII.
$I^u_{12} = \langle 9.73\times 10^5 au^{11} + 1.11\times 10^6 u^{11} + \cdots + 2.89\times 10^7 a - 4.84\times 10^7,\ 2.10\times 10^6 au^{11} + 1.94\times 10^6 u^{11} + \cdots + 4.27\times 10^7 a + 1.70\times 10^7,\ u^{12} + 4u^{11} + \cdots + 52u + 17\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} a \\ -0.0499024au^{11} - 0.0569073u^{11} + \cdots - 1.47945a + 2.47982 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.0222156au^{11} - 0.0306909u^{11} + \cdots + 1.34178a - 3.88802 \\ -0.0276868au^{11} - 0.0875982u^{11} + \cdots - 1.13767a - 1.40820 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.0255248au^{11} + 0.180008u^{11} + \cdots + 2.61958a + 3.43610 \\ -0.0961964au^{11} + 0.157732u^{11} + \cdots - 0.610904a + 3.97712 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0.240086au^{11} - 0.00795682u^{11} + \cdots - 7.82112a - 5.40507 \\ 0.269684au^{11} + 0.194341u^{11} + \cdots - 4.35659a + 3.23725 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.00536180au^{11} - 0.0898213u^{11} + \cdots - 5.46984a - 5.37452 \\ -0.0396490au^{11} - 0.0367192u^{11} + \cdots - 3.23173a - 1.66928 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.117320au^{11} - 0.00298672u^{11} + \cdots + 2.31111a - 0.617584 \\ -0.257941au^{11} - 0.0450108u^{11} + \cdots + 1.14812a + 2.23811 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.0870267au^{11} + 0.233711u^{11} + \cdots - 0.177121a - 3.05750 \\ -0.0201047au^{11} - 0.0255248u^{11} + \cdots + 0.848341a + 2.61958 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.0359355au^{11} - 0.0243270u^{11} + \cdots + 3.05350a - 2.36536 \\ -0.147896au^{11} + 0.00387902u^{11} + \cdots + 1.20142a + 0.110022 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{3584}{18491}u^{11} + \frac{23252}{18491}u^{10} + \frac{176}{41}u^9 + \frac{208520}{18491}u^8 + \frac{424496}{18491}u^7 + \frac{769548}{18491}u^6 + \frac{1073920}{18491}u^5 + \frac{1399512}{18491}u^4 + \frac{1275424}{18491}u^3 + \frac{1084484}{18491}u^2 + \frac{519328}{18491}u + \frac{102714}{18491}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(u^{12} + 4u^{11} + \cdots - 36u + 7)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$(u^{12} + 4u^{11} + \cdots + 52u + 17)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$(y^{12} - 24y^{11} + \cdots - 652y + 49)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$(y^{12} + 12y^{11} + \cdots + 1036y + 289)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_{12}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.056683 + 0.913161I$ $a = -0.505160 - 0.428841I$ $b = -2.00428 + 1.18705I$	-4.79131	$-9.01951 + 0.I$
$u = -0.056683 + 0.913161I$ $a = 4.39644 - 0.12367I$ $b = 3.40412$	-4.79131	$-9.01951 + 0.I$
$u = -0.056683 - 0.913161I$ $a = -0.505160 + 0.428841I$ $b = -2.00428 - 1.18705I$	-4.79131	$-9.01951 + 0.I$
$u = -0.056683 - 0.913161I$ $a = 4.39644 + 0.12367I$ $b = 3.40412$	-4.79131	$-9.01951 + 0.I$
$u = -0.603528 + 0.422967I$ $a = -1.191060 + 0.457673I$ $b = -0.254482 - 1.035470I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = -0.603528 + 0.422967I$ $a = 0.04338 - 1.85087I$ $b = -0.389899 + 0.085684I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = -0.603528 - 0.422967I$ $a = -1.191060 - 0.457673I$ $b = -0.254482 + 1.035470I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = -0.603528 - 0.422967I$ $a = 0.04338 + 1.85087I$ $b = -0.389899 - 0.085684I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = 0.066299 + 1.297300I$ $a = 1.254580 + 0.220823I$ $b = 2.43003 - 0.13698I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = 0.066299 + 1.297300I$ $a = -0.55596 - 1.51610I$ $b = -0.254482 - 1.035470I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$

Solutions to I^u_{12}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.066299 - 1.297300I$ $a = 1.254580 - 0.220823I$ $b = 2.43003 + 0.13698I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = 0.066299 - 1.297300I$ $a = -0.55596 + 1.51610I$ $b = -0.254482 + 1.035470I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = -0.55760 + 1.35203I$ $a = -0.279872 - 0.577449I$ $b = -0.389899 - 0.085684I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = -0.55760 + 1.35203I$ $a = -1.48032 + 0.17170I$ $b = -2.57057 + 0.22037I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = -0.55760 - 1.35203I$ $a = -0.279872 + 0.577449I$ $b = -0.389899 + 0.085684I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = -0.55760 - 1.35203I$ $a = -1.48032 - 0.17170I$ $b = -2.57057 - 0.22037I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = 0.54211 + 1.50118I$ $a = -1.65517 - 0.26125I$ $b = -2.57057 - 0.22037I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = 0.54211 + 1.50118I$ $a = 1.65143 - 0.37398I$ $b = 2.43003 - 0.13698I$	$-8.29642 + 6.59895I$	$-2.49024 - 2.97945I$
$u = 0.54211 - 1.50118I$ $a = -1.65517 + 0.26125I$ $b = -2.57057 + 0.22037I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$
$u = 0.54211 - 1.50118I$ $a = 1.65143 + 0.37398I$ $b = 2.43003 + 0.13698I$	$-8.29642 - 6.59895I$	$-2.49024 + 2.97945I$

Solutions to I^u_{12}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.39060+1.46053I$ $a=\ \ 0.223311-0.998797I$ $b=\ \ 0.174283$	-4.79131	$-9.01951+0.I$
$u=-1.39060+1.46053I$ $a=-1.69572-1.51965I$ $b=-2.00428-1.18705I$	-4.79131	$-9.01951+0.I$
$u=-1.39060-1.46053I$ $a=\ \ 0.223311+0.998797I$ $b=\ \ 0.174283$	-4.79131	$-9.01951+0.I$
$u=-1.39060-1.46053I$ $a=-1.69572+1.51965I$ $b=-2.00428+1.18705I$	-4.79131	$-9.01951+0.I$

XIII. $I^u_{13} = \langle u^2 + b,\ u^2 + a + 1,\ u^4 - u^3 + 3u^2 - 2u + 1\rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

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

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

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

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

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

$$a_5 = \begin{pmatrix} 0 \\ -u \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -8u^3 + 8u^2 - 24u + 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_{13}^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.395123 + 0.506844I$ $a = -0.899232 - 0.400532I$ $b = 0.100768 - 0.400532I$	$0.42201 + 2.83021I$	$3.65348 - 9.81749I$
$u = 0.395123 - 0.506844I$ $a = -0.899232 + 0.400532I$ $b = 0.100768 + 0.400532I$	$0.42201 - 2.83021I$	$3.65348 + 9.81749I$
$u = 0.10488 + 1.55249I$ $a = 1.39923 - 0.32564I$ $b = 2.39923 - 0.32564I$	$-13.5815 + 6.3279I$	$-3.65348 - 5.12960I$
$u = 0.10488 - 1.55249I$ $a = 1.39923 + 0.32564I$ $b = 2.39923 + 0.32564I$	$-13.5815 - 6.3279I$	$-3.65348 + 5.12960I$

XIV. $I^u_{14} = \langle b - a - u,\ a^2 + 2au + a - 2,\ u^2 + u + 1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_{14}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = 1.118030 - 0.866030I$ $b = 0.618034$	-4.93480	-2.00000
$u = -0.500000 + 0.866025I$ $a = -1.118030 - 0.866030I$ $b = -1.61803$	-4.93480	-2.00000
$u = -0.500000 - 0.866025I$ $a = 1.118030 + 0.866030I$ $b = 0.618034$	-4.93480	-2.00000
$u = -0.500000 - 0.866025I$ $a = -1.118030 + 0.866030I$ $b = -1.61803$	-4.93480	-2.00000

XV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$16(u^2-2u+2)^2(u^2+u-1)^2(u^4-u^3+\cdots-2u+4)(u^4+u^3+u^2+1)$ $\cdot(4u^4-15u^2-2u+17)(u^6+u^5-2u^4-3u^3+2u^2+3u+1)^2$ $\cdot(u^8-2u^7-u^6+6u^5-u^4-6u^3+8u^2-4u+1)$ $\cdot(u^{10}+2u^9+u^8-2u^7-3u^6+2u^4+2u^3-3u^2-2u-2)^2$ $\cdot((u^{12}+4u^{11}+\cdots-36u+7)^2)(u^{14}-u^{13}+\cdots-6u+1)^2$ $\cdot(4u^{20}-28u^{19}+\cdots-448u+73)(u^{30}-2u^{29}+\cdots+22u+1)^2$
c_2, c_5, c_8 c_{11}	$16(u^2+u+1)^4(u^4+u^3+3u^2+2u+1)(2u^4-2u^3+3u^2+1)^2$ $\cdot(u^7-u^6+4u^5-3u^4+5u^3-3u^2+u-1)^2$ $\cdot(u^8-2u^7+5u^6-6u^5+9u^4-10u^3+8u^2-4u+1)$ $\cdot(u^{12}-3u^{11}+8u^{10}-13u^9+18u^8-19u^7+13u^6-8u^5-2u^4+2u^3+4)$ $\cdot((u^{12}+4u^{11}+\cdots+52u+17)^2)(u^{14}+7u^{13}+\cdots+20u+4)$ $\cdot((u^{15}+2u^{14}+\cdots-2u-2)^2)(2u^{20}+11u^{18}+\cdots+4u+1)^2$ $\cdot(u^{30}-8u^{29}+\cdots-148u+43)$
c_3, c_6, c_9 c_{12}	$16(u^2+u+1)^4(u^4-u^3+3u^2-2u+1)(2u^4+2u^3+3u^2+1)^2$ $\cdot(u^7+u^6+4u^5+3u^4+5u^3+3u^2+u+1)^2$ $\cdot(u^8-2u^7+5u^6-6u^5+9u^4-10u^3+8u^2-4u+1)$ $\cdot(u^{12}-3u^{11}+8u^{10}-13u^9+18u^8-19u^7+13u^6-8u^5-2u^4+2u^3+4)$ $\cdot((u^{12}+4u^{11}+\cdots+52u+17)^2)(u^{14}-7u^{13}+\cdots-20u+4)$ $\cdot((u^{15}+2u^{14}+\cdots-2u-2)^2)(2u^{20}+11u^{18}+\cdots+4u+1)^2$ $\cdot(u^{30}-8u^{29}+\cdots-148u+43)$

XVI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_7 c_{10}	$256(y^2+4)^2(y^2-3y+1)^2(y^4-3y^3+5y^2-12y+16)$ $\cdot(y^4+y^3+3y^2+2y+1)(16y^4-120y^3+361y^2-514y+289)$ $\cdot(y^6-5y^5+14y^4-21y^3+18y^2-5y+1)^2$ $\cdot(y^8-6y^7+23y^6-42y^5+43y^4-6y^3+14y^2+1)$ $\cdot(y^{10}-2y^9+3y^8-6y^7-y^6-6y^5+10y^4-4y^3+9y^2+8y+4)^2$ $\cdot((y^{12}-24y^{11}+\cdots-652y+49)^2)(y^{14}+7y^{13}+\cdots-6y+1)^2$ $\cdot(16y^{20}-8y^{19}+\cdots+42678y+5329)$ $\cdot(y^{30}-18y^{29}+\cdots-206y+1)^2$
c_2, c_3, c_5 c_6, c_8, c_9 c_{11}, c_{12}	$256(y^2+y+1)^4(y^4+5y^3+7y^2+2y+1)$ $\cdot(4y^4+8y^3+13y^2+6y+1)^2$ $\cdot(y^7+7y^6+20y^5+27y^4+13y^3-5y^2-5y-1)^2$ $\cdot(y^8+6y^7+19y^6+30y^5+27y^4+6y^3+2y^2+1)$ $\cdot(y^{12}+7y^{11}+\cdots-16y^2+16)(y^{12}+12y^{11}+\cdots+1036y+289)^2$ $\cdot(y^{14}+3y^{13}+\cdots+16y+16)(y^{15}+16y^{14}+\cdots-32y-4)^2$ $\cdot((4y^{20}+44y^{19}+\cdots-6y+1)^2)(y^{30}+16y^{29}+\cdots+1144y+1849)$