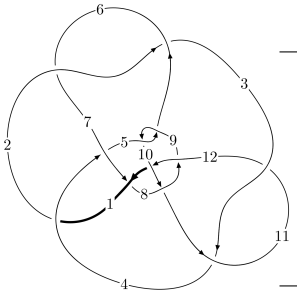
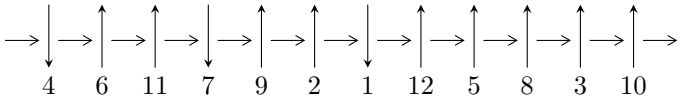
$12a_{0976}$ $(K12a_{0976})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -9.36792 \times 10^{27} u^{40} + 8.13492 \times 10^{26} u^{39} + \cdots + 1.40941 \times 10^{28} b + 7.10735 \times 10^{27},$$
$$- 7.39544 \times 10^{27} u^{40} + 5.79824 \times 10^{27} u^{39} + \cdots + 4.69805 \times 10^{27} a - 1.57638 \times 10^{28},\ u^{41} - u^{40} + \cdots + 16u -$$
$$I_2^u = \langle 3.76586 \times 10^{963} u^{151} + 1.26628 \times 10^{964} u^{150} + \cdots + 6.29219 \times 10^{964} b - 9.83778 \times 10^{965},$$
$$3.81143 \times 10^{966} u^{151} + 1.59111 \times 10^{967} u^{150} + \cdots + 7.99108 \times 10^{966} a - 5.06361 \times 10^{967},$$
$$u^{152} + 4u^{151} + \cdots + 5344u + 127 \rangle$$
$$I_3^u = \langle -4u^{15} - 2u^{14} + \cdots + b + 11,\ 4u^{15} + 25u^{14} + \cdots + 3a + 48,\ u^{16} + u^{15} + \cdots - 3u + 3 \rangle$$
$$I_4^u = \langle 1.46396 \times 10^{31} u^{35} - 5.32684 \times 10^{31} u^{34} + \cdots + 6.50328 \times 10^{30} b - 1.74691 \times 10^{32},$$
$$2.40645 \times 10^{32} u^{35} - 8.53847 \times 10^{32} u^{34} + \cdots + 1.30066 \times 10^{31} a + 2.12996 \times 10^{33},\ u^{36} - 5u^{35} + \cdots - 24u +$$

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

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 247 representations.

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

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

I.

$\boldsymbol{I_1^u = \langle -9.37\times10^{27}u^{40}+8.13\times10^{26}u^{39}+\cdots+1.41\times10^{28}b+7.11\times10^{27},\ -7.40\times10^{27}u^{40}+5.80\times10^{27}u^{39}+\cdots+4.70\times10^{27}a-1.58\times10^{28},\ u^{41}-u^{40}+\cdots+16u-4\rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix}1.57415u^{40} - 1.23418u^{39} + \cdots - 15.1906u + 3.35539\\0.664667u^{40} - 0.0577185u^{39} + \cdots - 1.60599u - 0.504277\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-1.08851u^{40} + 1.67936u^{39} + \cdots + 22.4118u - 4.32639\\-0.617870u^{40} + 0.662158u^{39} + \cdots + 8.27389u - 1.88526\end{pmatrix}$$

$$a_7 = \begin{pmatrix}1.85378u^{40} - 2.97661u^{39} + \cdots - 44.3273u + 10.8054\\1.40222u^{40} - 1.50444u^{39} + \cdots - 19.8467u + 4.01319\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.478088u^{40} + 1.13344u^{39} + \cdots + 16.8780u - 3.84825\\-0.165222u^{40} + 0.391963u^{39} + \cdots + 6.86426u - 2.14327\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.0710383u^{40} + 0.170175u^{39} + \cdots + 1.05064u + 1.10767\\-0.763787u^{40} + 1.64557u^{39} + \cdots + 24.2806u - 6.20023\end{pmatrix}$$

$$a_9 = \begin{pmatrix}1.10180u^{40} - 0.871388u^{39} + \cdots - 12.5378u + 3.66997\\0.266978u^{40} + 0.604011u^{39} + \cdots + 10.6921u - 3.63794\end{pmatrix}$$

$$a_5 = \begin{pmatrix}1.34374u^{40} + 0.0709335u^{39} + \cdots - 1.23170u - 1.05183\\-0.206321u^{40} + 0.857204u^{39} + \cdots + 6.30360u - 1.57219\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.312866u^{40} - 0.741479u^{39} + \cdots - 10.0138u + 1.70498\\0.383904u^{40} - 0.571305u^{39} + \cdots - 8.96313u + 2.81265\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{303475248224407242356686780 2}{1174511702315840550034715077}u^{40} - \frac{142264458706085874111596356}{1174511702315840550034715077}u^{39} + \cdots - \frac{3885981032495859078492903379 8}{1174511702315840550034715077}u + \frac{260458163578722761947203339 66}{1174511702315840550034715077}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{41} - u^{40} + \cdots + 5u - 1$
c_2, c_6	$u^{41} - 18u^{40} + \cdots + 3856u - 272$
c_3, c_5, c_9 c_{11}	$u^{41} - u^{40} + \cdots + 16u - 4$
c_7	$u^{41} - 35u^{40} + \cdots + 9437184u - 524288$
c_8	$u^{41} - 28u^{40} + \cdots + 146856u - 11968$
c_{10}, c_{12}	$u^{41} + u^{40} + \cdots - u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{41} - 17y^{40} + \cdots + 47y - 1$
c_2, c_6	$y^{41} + 30y^{40} + \cdots + 474496y - 73984$
c_3, c_5, c_9 c_{11}	$y^{41} + 29y^{40} + \cdots + 208y^2 - 16$
c_7	$y^{41} + 9y^{40} + \cdots + 1649267441664y - 274877906944$
c_8	$y^{41} - 8y^{40} + \cdots - 428680128y - 143233024$
c_{10}, c_{12}	$y^{41} + 7y^{40} + \cdots + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.355254 + 0.957355I$ $a = -0.943476 - 0.548882I$ $b = -0.725619 + 0.128110I$	$-1.17120 + 5.93299I$	$4.82099 - 13.25602I$
$u = 0.355254 - 0.957355I$ $a = -0.943476 + 0.548882I$ $b = -0.725619 - 0.128110I$	$-1.17120 - 5.93299I$	$4.82099 + 13.25602I$
$u = 0.182709 + 0.955930I$ $a = 0.59415 - 2.33874I$ $b = -0.78874 - 1.31820I$	$-3.41939 - 0.61188I$	$-4.06956 + 3.27847I$
$u = 0.182709 - 0.955930I$ $a = 0.59415 + 2.33874I$ $b = -0.78874 + 1.31820I$	$-3.41939 + 0.61188I$	$-4.06956 - 3.27847I$
$u = 0.312542 + 1.016120I$ $a = -0.170843 + 0.707646I$ $b = 0.887449 + 0.244109I$	$-2.15556 + 2.75564I$	$2.75882 - 3.02176I$
$u = 0.312542 - 1.016120I$ $a = -0.170843 - 0.707646I$ $b = 0.887449 - 0.244109I$	$-2.15556 - 2.75564I$	$2.75882 + 3.02176I$
$u = -0.829768 + 0.414937I$ $a = 0.401759 + 0.549858I$ $b = -0.795790 + 0.091594I$	$3.84345 + 4.13042I$	$11.18782 - 2.61819I$
$u = -0.829768 - 0.414937I$ $a = 0.401759 - 0.549858I$ $b = -0.795790 - 0.091594I$	$3.84345 - 4.13042I$	$11.18782 + 2.61819I$
$u = 1.057050 + 0.246411I$ $a = 0.173938 + 0.652642I$ $b = -0.417916 + 1.222970I$	$0.36430 - 8.56808I$	$5.99108 + 6.74347I$
$u = 1.057050 - 0.246411I$ $a = 0.173938 - 0.652642I$ $b = -0.417916 - 1.222970I$	$0.36430 + 8.56808I$	$5.99108 - 6.74347I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.282856 + 1.165060I$ $a = -0.606099 - 0.167833I$ $b = -1.38265 + 0.62746I$	$-5.75137 + 3.96802I$	$-4.24316 - 1.27024I$
$u = \ 0.282856 - 1.165060I$ $a = -0.606099 + 0.167833I$ $b = -1.38265 - 0.62746I$	$-5.75137 - 3.96802I$	$-4.24316 + 1.27024I$
$u = -0.765233 + 0.027384I$ $a = \ 0.544878 + 0.272827I$ $b = -0.346266 + 1.126520I$	$-1.84700 - 2.91345I$	$3.24294 + 4.74634I$
$u = -0.765233 - 0.027384I$ $a = \ 0.544878 - 0.272827I$ $b = -0.346266 - 1.126520I$	$-1.84700 + 2.91345I$	$3.24294 - 4.74634I$
$u = -0.355013 + 1.204340I$ $a = -0.592249 + 0.345245I$ $b = \ 0.348655 + 0.463430I$	$-5.80010 - 0.30487I$	$-4.31941 - 0.73616I$
$u = -0.355013 - 1.204340I$ $a = -0.592249 - 0.345245I$ $b = \ 0.348655 - 0.463430I$	$-5.80010 + 0.30487I$	$-4.31941 + 0.73616I$
$u = -0.357497 + 1.225470I$ $a = \ 0.65659 + 2.23078I$ $b = -0.481655 + 1.303690I$	$-4.91754 - 10.74480I$	$4.64446 + 9.26386I$
$u = -0.357497 - 1.225470I$ $a = \ 0.65659 - 2.23078I$ $b = -0.481655 - 1.303690I$	$-4.91754 + 10.74480I$	$4.64446 - 9.26386I$
$u = \ 0.198188 + 0.673749I$ $a = -1.44436 + 0.31882I$ $b = -0.520200 - 0.640823I$	$-1.58494 + 6.26446I$	$1.10892 - 8.48549I$
$u = \ 0.198188 - 0.673749I$ $a = -1.44436 - 0.31882I$ $b = -0.520200 + 0.640823I$	$-1.58494 - 6.26446I$	$1.10892 + 8.48549I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.470339 + 0.520796I$ $a = 0.949040 - 0.250865I$ $b = -0.692863 - 0.570833I$	$1.54510 + 1.18608I$	$8.80668 + 0.32091I$
$u = 0.470339 - 0.520796I$ $a = 0.949040 + 0.250865I$ $b = -0.692863 + 0.570833I$	$1.54510 - 1.18608I$	$8.80668 - 0.32091I$
$u = -0.541532 + 0.429703I$ $a = 0.798167 - 0.298634I$ $b = -0.584304 - 1.023470I$	$0.13834 + 3.71774I$	$8.24552 - 0.59208I$
$u = -0.541532 - 0.429703I$ $a = 0.798167 + 0.298634I$ $b = -0.584304 + 1.023470I$	$0.13834 - 3.71774I$	$8.24552 + 0.59208I$
$u = 0.201344 + 1.294790I$ $a = -0.60451 + 1.70665I$ $b = -0.53100 + 2.37595I$	$-7.25907 + 6.02782I$	$-24.9299 - 9.4175I$
$u = 0.201344 - 1.294790I$ $a = -0.60451 - 1.70665I$ $b = -0.53100 - 2.37595I$	$-7.25907 - 6.02782I$	$-24.9299 + 9.4175I$
$u = -0.507037 + 1.212430I$ $a = 0.94888 + 1.67421I$ $b = -0.74687 + 1.42147I$	$-8.9112 - 11.8653I$	$-2.47418 + 10.59886I$
$u = -0.507037 - 1.212430I$ $a = 0.94888 - 1.67421I$ $b = -0.74687 - 1.42147I$	$-8.9112 + 11.8653I$	$-2.47418 - 10.59886I$
$u = -0.652124 + 1.149880I$ $a = -1.07807 - 1.24272I$ $b = 0.270848 - 1.313070I$	$-7.26445 - 6.58554I$	$0. + 6.24258I$
$u = -0.652124 - 1.149880I$ $a = -1.07807 + 1.24272I$ $b = 0.270848 + 1.313070I$	$-7.26445 + 6.58554I$	$0. - 6.24258I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.553913+1.274090I$ $a=-0.220887+0.527421I$ $b=-1.392050+0.043136I$	$-1.6816-14.7698I$	$0.+10.08826I$
$u=-0.553913-1.274090I$ $a=-0.220887-0.527421I$ $b=-1.392050-0.043136I$	$-1.6816+14.7698I$	$0.-10.08826I$
$u=0.486851+0.244403I$ $a=1.85925-0.90732I$ $b=-0.273613-0.988318I$	$0.022808-0.870233I$	$6.94699+0.81647I$
$u=0.486851-0.244403I$ $a=1.85925+0.90732I$ $b=-0.273613+0.988318I$	$0.022808+0.870233I$	$6.94699-0.81647I$
$u=-0.05192+1.46914I$ $a=-0.22904-1.73436I$ $b=-0.21282-1.46235I$	$-13.31590+0.60859I$	0
$u=-0.05192-1.46914I$ $a=-0.22904+1.73436I$ $b=-0.21282+1.46235I$	$-13.31590-0.60859I$	0
$u=0.65516+1.35458I$ $a=-1.01542+1.19287I$ $b=0.174557+1.168400I$	$-8.10806+2.31475I$	0
$u=0.65516-1.35458I$ $a=-1.01542-1.19287I$ $b=0.174557-1.168400I$	$-8.10806-2.31475I$	0
$u=0.70626+1.36288I$ $a=0.87484-1.51677I$ $b=-0.61588-1.45307I$	$-6.3818+21.6497I$	0
$u=0.70626-1.36288I$ $a=0.87484+1.51677I$ $b=-0.61588+1.45307I$	$-6.3818-21.6497I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.410975$		
$a = \quad 1.20694$	0.911167	11.2160
$b = -0.346533$		

II. $\boldsymbol{I_2^u = \langle 3.77 \times 10^{963} u^{151} + 1.27 \times 10^{964} u^{150} + \cdots + 6.29 \times 10^{964} b - 9.84 \times 10^{965},\ 3.81 \times 10^{966} u^{151} + 1.59 \times 10^{967} u^{150} + \cdots + 7.99 \times 10^{966} a - 5.06 \times 10^{967},\ u^{152} + 4u^{151} + \cdots + 5344u + 127 \rangle}$

(i) Arc colorings

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

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

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

$$a_6 = \begin{pmatrix} -0.476961u^{151} - 1.99111u^{150} + \cdots - 829.800u + 6.33658 \\ -0.0598497u^{151} - 0.201247u^{150} + \cdots + 601.956u + 15.6349 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.550082u^{151} - 1.82843u^{150} + \cdots + 1728.55u + 60.0372 \\ -0.286239u^{151} - 0.977703u^{150} + \cdots + 1408.59u + 35.6321 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.476089u^{151} - 1.67154u^{150} + \cdots + 290.281u + 41.1953 \\ -0.407293u^{151} - 1.47309u^{150} + \cdots + 1449.28u + 37.6940 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.390488u^{151} - 1.29157u^{150} + \cdots + 1219.57u + 48.4380 \\ -0.0987343u^{151} - 0.315899u^{150} + \cdots + 886.357u + 22.7394 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.201437u^{151} + 0.956029u^{150} + \cdots + 1264.00u + 65.5938 \\ -0.0108564u^{151} - 0.0121123u^{150} + \cdots + 553.852u + 14.7828 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.278529u^{151} + 1.33447u^{150} + \cdots + 1926.73u + 80.7029 \\ 0.0662356u^{151} + 0.366329u^{150} + \cdots + 1216.58u + 29.8919 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.421507u^{151} - 1.67481u^{150} + \cdots - 2145.24u - 39.1653 \\ -0.351584u^{151} - 1.43290u^{150} + \cdots + 101.022u + 4.75533 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.475745u^{151} - 1.99625u^{150} + \cdots - 2006.72u - 31.0923 \\ -0.563910u^{151} - 2.24307u^{150} + \cdots + 90.2285u + 5.33301 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6.75818u^{151} - 30.4274u^{150} + \cdots - 15015.3u - 319.503$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{152} - 12u^{151} + \cdots - 8870u + 337$
c_2, c_6	$(u^{76} + 8u^{75} + \cdots + 21348u + 1357)^2$
c_3, c_5, c_9 c_{11}	$u^{152} + 4u^{151} + \cdots + 5344u + 127$
c_7	$(u^{76} + 14u^{75} + \cdots + 18u + 1)^2$
c_8	$(u^{76} + 11u^{75} + \cdots + 3116u + 157)^2$
c_{10}, c_{12}	$u^{152} + 16u^{151} + \cdots + 41u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{152} - 10y^{151} + \cdots - 12017626y + 113569$
c_2, c_6	$(y^{76} + 56y^{75} + \cdots + 18480116y + 1841449)^2$
c_3, c_5, c_9 c_{11}	$y^{152} + 94y^{151} + \cdots + 27521308y + 16129$
c_7	$(y^{76} + 28y^{75} + \cdots - 14y + 1)^2$
c_8	$(y^{76} - y^{75} + \cdots - 25068y + 24649)^2$
c_{10}, c_{12}	$y^{152} - 12y^{151} + \cdots + 199y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.321675 + 0.948571I$ $a = -0.555763 - 0.631177I$ $b = 0.098447 + 0.825085I$	$-2.38966 + 1.51567I$	0
$u = 0.321675 - 0.948571I$ $a = -0.555763 + 0.631177I$ $b = 0.098447 - 0.825085I$	$-2.38966 - 1.51567I$	0
$u = -0.205022 + 1.014360I$ $a = -0.901906 + 0.599388I$ $b = -1.52601 + 0.32594I$	$-1.36965 - 5.17554I$	0
$u = -0.205022 - 1.014360I$ $a = -0.901906 - 0.599388I$ $b = -1.52601 - 0.32594I$	$-1.36965 + 5.17554I$	0
$u = 0.134529 + 0.951621I$ $a = 3.08877 + 2.50158I$ $b = -0.132437 + 1.101920I$	$-1.35819 + 0.58027I$	0
$u = 0.134529 - 0.951621I$ $a = 3.08877 - 2.50158I$ $b = -0.132437 - 1.101920I$	$-1.35819 - 0.58027I$	0
$u = -0.948627 + 0.151897I$ $a = -0.906818 - 0.940951I$ $b = 0.962946 + 0.117211I$	$1.78749 + 9.29186I$	0
$u = -0.948627 - 0.151897I$ $a = -0.906818 + 0.940951I$ $b = 0.962946 - 0.117211I$	$1.78749 - 9.29186I$	0
$u = 0.677106 + 0.791269I$ $a = 0.672491 + 0.225401I$ $b = -0.153567 - 0.947062I$	$1.44692 + 2.60945I$	0
$u = 0.677106 - 0.791269I$ $a = 0.672491 - 0.225401I$ $b = -0.153567 + 0.947062I$	$1.44692 - 2.60945I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.068993 + 0.937182I$ $a = 0.64758 - 2.46758I$ $b = 0.088101 - 1.173320I$	$0.01967 - 1.55847I$	0
$u = 0.068993 - 0.937182I$ $a = 0.64758 + 2.46758I$ $b = 0.088101 + 1.173320I$	$0.01967 + 1.55847I$	0
$u = 0.022949 + 0.929780I$ $a = -0.064307 + 0.800528I$ $b = 0.773085 + 0.134427I$	$-2.25254 + 2.60045I$	0
$u = 0.022949 - 0.929780I$ $a = -0.064307 - 0.800528I$ $b = 0.773085 - 0.134427I$	$-2.25254 - 2.60045I$	0
$u = -0.452279 + 0.970743I$ $a = 0.0858293 - 0.0527863I$ $b = -0.780417 + 0.103082I$	$2.28261 - 3.79252I$	0
$u = -0.452279 - 0.970743I$ $a = 0.0858293 + 0.0527863I$ $b = -0.780417 - 0.103082I$	$2.28261 + 3.79252I$	0
$u = -0.118444 + 0.916031I$ $a = -0.617624 + 0.906027I$ $b = -1.17122 + 0.90354I$	$-2.50522 - 4.14089I$	0
$u = -0.118444 - 0.916031I$ $a = -0.617624 - 0.906027I$ $b = -1.17122 - 0.90354I$	$-2.50522 + 4.14089I$	0
$u = 0.075286 + 0.909043I$ $a = -8.26782 + 8.73603I$ $b = 0.026371 + 1.031480I$	$-1.340640 + 0.177537I$	0
$u = 0.075286 - 0.909043I$ $a = -8.26782 - 8.73603I$ $b = 0.026371 - 1.031480I$	$-1.340640 - 0.177537I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.831746 + 0.354007I$ $a = -0.281841 + 0.089434I$ $b = 0.401952 + 1.167590I$	$-2.07001 + 7.87140I$	0
$u = 0.831746 - 0.354007I$ $a = -0.281841 - 0.089434I$ $b = 0.401952 - 1.167590I$	$-2.07001 - 7.87140I$	0
$u = -0.597534 + 0.674451I$ $a = 0.308248 - 1.053050I$ $b = 0.436612 - 0.151450I$	$3.23978 - 0.43349I$	0
$u = -0.597534 - 0.674451I$ $a = 0.308248 + 1.053050I$ $b = 0.436612 + 0.151450I$	$3.23978 + 0.43349I$	0
$u = 0.119306 + 1.117480I$ $a = 0.226897 + 0.055159I$ $b = 0.640072 + 0.133424I$	$-2.23820 + 2.40729I$	0
$u = 0.119306 - 1.117480I$ $a = 0.226897 - 0.055159I$ $b = 0.640072 - 0.133424I$	$-2.23820 - 2.40729I$	0
$u = -0.165583 + 0.857911I$ $a = 0.31669 + 3.42620I$ $b = -0.67356 + 2.01674I$	$-4.35700 - 6.39751I$	0
$u = -0.165583 - 0.857911I$ $a = 0.31669 - 3.42620I$ $b = -0.67356 - 2.01674I$	$-4.35700 + 6.39751I$	0
$u = 1.048890 + 0.436709I$ $a = 0.300540 + 0.319529I$ $b = 0.068044 + 1.150610I$	$-5.14281 + 4.26286I$	0
$u = 1.048890 - 0.436709I$ $a = 0.300540 - 0.319529I$ $b = 0.068044 - 1.150610I$	$-5.14281 - 4.26286I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.632901 + 0.573670I$ $a = 0.848775 - 0.143924I$ $b = -0.615975 - 0.614978I$	$1.52205 + 1.28713I$	0
$u = 0.632901 - 0.573670I$ $a = 0.848775 + 0.143924I$ $b = -0.615975 + 0.614978I$	$1.52205 - 1.28713I$	0
$u = -0.689072 + 0.919953I$ $a = 0.151660 + 0.635912I$ $b = 0.58156 + 1.35705I$	$-5.16537 + 3.34404I$	0
$u = -0.689072 - 0.919953I$ $a = 0.151660 - 0.635912I$ $b = 0.58156 - 1.35705I$	$-5.16537 - 3.34404I$	0
$u = 0.504987 + 1.037680I$ $a = 0.302256 - 1.050710I$ $b = 0.005795 - 0.617905I$	$-0.477490 - 0.597383I$	0
$u = 0.504987 - 1.037680I$ $a = 0.302256 + 1.050710I$ $b = 0.005795 + 0.617905I$	$-0.477490 + 0.597383I$	0
$u = 0.824830 + 0.185756I$ $a = -0.131095 + 1.387960I$ $b = 0.436612 - 0.151450I$	$3.23978 - 0.43349I$	0
$u = 0.824830 - 0.185756I$ $a = -0.131095 - 1.387960I$ $b = 0.436612 + 0.151450I$	$3.23978 + 0.43349I$	0
$u = 0.623399 + 0.981915I$ $a = 0.216002 + 0.611821I$ $b = 0.746181 - 0.367556I$	$0.47029 + 3.49839I$	0
$u = 0.623399 - 0.981915I$ $a = 0.216002 - 0.611821I$ $b = 0.746181 + 0.367556I$	$0.47029 - 3.49839I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.197928 + 0.813159I$ $a = 0.744719 + 0.190342I$ $b = 0.556125 - 0.799527I$	$-3.02657 + 2.42547I$	0
$u = 0.197928 - 0.813159I$ $a = 0.744719 - 0.190342I$ $b = 0.556125 + 0.799527I$	$-3.02657 - 2.42547I$	0
$u = 0.568349 + 1.015660I$ $a = 0.437891 + 0.495743I$ $b = 0.727656 - 0.562684I$	$0.16144 + 3.37593I$	0
$u = 0.568349 - 1.015660I$ $a = 0.437891 - 0.495743I$ $b = 0.727656 + 0.562684I$	$0.16144 - 3.37593I$	0
$u = 1.137130 + 0.308092I$ $a = 0.760950 - 0.588185I$ $b = -0.780417 - 0.103082I$	$2.28261 + 3.79252I$	0
$u = 1.137130 - 0.308092I$ $a = 0.760950 + 0.588185I$ $b = -0.780417 + 0.103082I$	$2.28261 - 3.79252I$	0
$u = -1.175070 + 0.087388I$ $a = 0.282190 - 1.133660I$ $b = -0.153567 - 0.947062I$	$1.44692 + 2.60945I$	0
$u = -1.175070 - 0.087388I$ $a = 0.282190 + 1.133660I$ $b = -0.153567 + 0.947062I$	$1.44692 - 2.60945I$	0
$u = 1.179210 + 0.075153I$ $a = 0.320501 - 0.053469I$ $b = -0.275772 + 1.264760I$	$0.338060 + 1.207040I$	0
$u = 1.179210 - 0.075153I$ $a = 0.320501 + 0.053469I$ $b = -0.275772 - 1.264760I$	$0.338060 - 1.207040I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.933208+0.735273I$ $a=-0.141827-0.551529I$ $b=\ \ 0.236818-0.933476I$	$0.23222-8.03043I$	0
$u=-0.933208-0.735273I$ $a=-0.141827+0.551529I$ $b=\ \ 0.236818+0.933476I$	$0.23222+8.03043I$	0
$u=-0.182730+0.787476I$ $a=-1.65435-5.09329I$ $b=\ \ 0.236818-0.933476I$	$0.23222-8.03043I$	0
$u=-0.182730-0.787476I$ $a=-1.65435+5.09329I$ $b=\ \ 0.236818+0.933476I$	$0.23222+8.03043I$	0
$u=-0.774872+0.184428I$ $a=\ \ 0.084412-0.162774I$ $b=\ \ 0.067392-1.235640I$	$-4.74007+1.48070I$	0
$u=-0.774872-0.184428I$ $a=\ \ 0.084412+0.162774I$ $b=\ \ 0.067392+1.235640I$	$-4.74007-1.48070I$	0
$u=-0.553291+1.070460I$ $a=-1.46100-2.04931I$ $b=\ \ 0.558660-1.081100I$	$-1.57137-8.24589I$	0
$u=-0.553291-1.070460I$ $a=-1.46100+2.04931I$ $b=\ \ 0.558660+1.081100I$	$-1.57137+8.24589I$	0
$u=-0.182777+0.771916I$ $a=\ \ 0.02458-2.43264I$ $b=-0.275772-1.264760I$	$0.338060-1.207040I$	0
$u=-0.182777-0.771916I$ $a=\ \ 0.02458+2.43264I$ $b=-0.275772+1.264760I$	$0.338060+1.207040I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.751421+0.222954I$ $a=\ \ 1.10538+0.89749I$ $b=-0.152857-1.234760I$	$-2.34278+6.87328I$	0
$u=-0.751421-0.222954I$ $a=\ \ 1.10538-0.89749I$ $b=-0.152857+1.234760I$	$-2.34278-6.87328I$	0
$u=\ \ 0.070427+0.774274I$ $a=\ \ 0.854638-0.931139I$ $b=\ \ 1.149720-0.713311I$	$0.10193+3.64056I$	0
$u=\ \ 0.070427-0.774274I$ $a=\ \ 0.854638+0.931139I$ $b=\ \ 1.149720+0.713311I$	$0.10193-3.64056I$	0
$u=-0.568940+1.082380I$ $a=\ \ 0.177618-0.622296I$ $b=\ \ 0.962946-0.117211I$	$1.78749-9.29186I$	0
$u=-0.568940-1.082380I$ $a=\ \ 0.177618+0.622296I$ $b=\ \ 0.962946+0.117211I$	$1.78749+9.29186I$	0
$u=\ \ 0.298987+0.710773I$ $a=\ \ 0.391992-0.122533I$ $b=-0.531957-0.826362I$	$0.87113+3.12892I$	0
$u=\ \ 0.298987-0.710773I$ $a=\ \ 0.391992+0.122533I$ $b=-0.531957+0.826362I$	$0.87113-3.12892I$	0
$u=-0.326196+0.690414I$ $a=-1.71946-1.23894I$ $b=\ \ 0.442866-1.291260I$	$-6.43178-7.09340I$	0
$u=-0.326196-0.690414I$ $a=-1.71946+1.23894I$ $b=\ \ 0.442866+1.291260I$	$-6.43178+7.09340I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.547063+1.113880I$ $a=\ 0.85489+1.45057I$ $b=\ 0.067392+1.235640I$	$-4.74007-1.48070I$	0
$u=-0.547063-1.113880I$ $a=\ 0.85489-1.45057I$ $b=\ 0.067392-1.235640I$	$-4.74007+1.48070I$	0
$u=-0.419706+1.189910I$ $a=\ 0.32864+1.88896I$ $b=\ 0.098447+0.825085I$	$-2.38966+1.51567I$	0
$u=-0.419706-1.189910I$ $a=\ 0.32864-1.88896I$ $b=\ 0.098447-0.825085I$	$-2.38966-1.51567I$	0
$u=\ 0.359863+1.222760I$ $a=-0.151081+0.179161I$ $b=\ 0.773085+0.134427I$	$-2.25254+2.60045I$	0
$u=\ 0.359863-1.222760I$ $a=-0.151081-0.179161I$ $b=\ 0.773085-0.134427I$	$-2.25254-2.60045I$	0
$u=-0.313865+1.244520I$ $a=\ 0.73698+2.44494I$ $b=-0.073188+1.111480I$	$-3.83204-1.68325I$	0
$u=-0.313865-1.244520I$ $a=\ 0.73698-2.44494I$ $b=-0.073188-1.111480I$	$-3.83204+1.68325I$	0
$u=\ 0.710711+0.047613I$ $a=\ 0.620803-0.896439I$ $b=\ 0.088101+1.173320I$	$0.01967+1.55847I$	0
$u=\ 0.710711-0.047613I$ $a=\ 0.620803+0.896439I$ $b=\ 0.088101-1.173320I$	$0.01967-1.55847I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.696970+0.146912I$ $a=-0.441601-0.508742I$ $b=\ \ 0.534705+1.298660I$	$-5.75877+7.16402I$	0
$u=-0.696970-0.146912I$ $a=-0.441601+0.508742I$ $b=\ \ 0.534705-1.298660I$	$-5.75877-7.16402I$	0
$u=\ \ 0.118476+1.291770I$ $a=\ \ 0.08723+1.78783I$ $b=\ \ 0.68915+1.43767I$	$-4.91308+3.36425I$	0
$u=\ \ 0.118476-1.291770I$ $a=\ \ 0.08723-1.78783I$ $b=\ \ 0.68915-1.43767I$	$-4.91308-3.36425I$	0
$u=-0.387984+1.243590I$ $a=-0.78282-1.85719I$ $b=\ \ 0.534705-1.298660I$	$-5.75877-7.16402I$	0
$u=-0.387984-1.243590I$ $a=-0.78282+1.85719I$ $b=\ \ 0.534705+1.298660I$	$-5.75877+7.16402I$	0
$u=\ \ 0.068459+0.692652I$ $a=-1.26391+0.73690I$ $b=\ \ 0.727656+0.562684I$	$0.16144-3.37593I$	0
$u=\ \ 0.068459-0.692652I$ $a=-1.26391-0.73690I$ $b=\ \ 0.727656-0.562684I$	$0.16144+3.37593I$	0
$u=-0.519441+1.197880I$ $a=-1.68736-0.80676I$ $b=\ \ 0.340055-1.089170I$	$-5.28119-11.70500I$	0
$u=-0.519441-1.197880I$ $a=-1.68736+0.80676I$ $b=\ \ 0.340055+1.089170I$	$-5.28119+11.70500I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.170541 + 0.666481I$ $a = -1.21627 - 2.17305I$ $b = 0.005795 + 0.617905I$	$-0.477490 + 0.597383I$	0
$u = 0.170541 - 0.666481I$ $a = -1.21627 + 2.17305I$ $b = 0.005795 - 0.617905I$	$-0.477490 - 0.597383I$	0
$u = 0.320764 + 1.273980I$ $a = 0.21050 - 2.19337I$ $b = -0.19479 - 1.46179I$	$-10.62740 + 8.02859I$	0
$u = 0.320764 - 1.273980I$ $a = 0.21050 + 2.19337I$ $b = -0.19479 + 1.46179I$	$-10.62740 - 8.02859I$	0
$u = -0.380548 + 1.263520I$ $a = 0.66246 + 1.86381I$ $b = -0.27603 + 1.56207I$	$-9.03467 - 2.56211I$	0
$u = -0.380548 - 1.263520I$ $a = 0.66246 - 1.86381I$ $b = -0.27603 - 1.56207I$	$-9.03467 + 2.56211I$	0
$u = 0.944742 + 0.924204I$ $a = -0.100170 + 0.684097I$ $b = 1.149720 - 0.713311I$	$0.10193 + 3.64056I$	0
$u = 0.944742 - 0.924204I$ $a = -0.100170 - 0.684097I$ $b = 1.149720 + 0.713311I$	$0.10193 - 3.64056I$	0
$u = -0.110302 + 0.661355I$ $a = 0.31602 + 3.47547I$ $b = 0.556125 + 0.799527I$	$-3.02657 - 2.42547I$	0
$u = -0.110302 - 0.661355I$ $a = 0.31602 - 3.47547I$ $b = 0.556125 - 0.799527I$	$-3.02657 + 2.42547I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.310410 + 1.299070I$ $a = -0.712524 + 0.198087I$ $b = 0.524640 - 0.458541I$	$-3.35163 + 8.24765I$	0
$u = 0.310410 - 1.299070I$ $a = -0.712524 - 0.198087I$ $b = 0.524640 + 0.458541I$	$-3.35163 - 8.24765I$	0
$u = 0.250751 + 1.312880I$ $a = -0.30726 + 1.72339I$ $b = 0.58156 + 1.35705I$	$-5.16537 + 3.34404I$	0
$u = 0.250751 - 1.312880I$ $a = -0.30726 - 1.72339I$ $b = 0.58156 - 1.35705I$	$-5.16537 - 3.34404I$	0
$u = -0.566396 + 1.218630I$ $a = -1.09601 - 1.95439I$ $b = 0.401952 - 1.167590I$	$-2.07001 - 7.87140I$	0
$u = -0.566396 - 1.218630I$ $a = -1.09601 + 1.95439I$ $b = 0.401952 + 1.167590I$	$-2.07001 + 7.87140I$	0
$u = 0.291617 + 1.314840I$ $a = 0.72871 - 1.89251I$ $b = 0.068044 - 1.150610I$	$-5.14281 - 4.26286I$	0
$u = 0.291617 - 1.314840I$ $a = 0.72871 + 1.89251I$ $b = 0.068044 + 1.150610I$	$-5.14281 + 4.26286I$	0
$u = -0.560916 + 0.312864I$ $a = 1.34178 - 0.67756I$ $b = -0.531957 - 0.826362I$	$0.87113 + 3.12892I$	0
$u = -0.560916 - 0.312864I$ $a = 1.34178 + 0.67756I$ $b = -0.531957 + 0.826362I$	$0.87113 - 3.12892I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.903194 + 1.021860I$ $a = -0.482338 + 0.434150I$ $b = -0.073188 + 1.111480I$	$-3.83204 - 1.68325I$	0
$u = \ 0.903194 - 1.021860I$ $a = -0.482338 - 0.434150I$ $b = -0.073188 - 1.111480I$	$-3.83204 + 1.68325I$	0
$u = \ 0.409467 + 1.310280I$ $a = \ 0.49920 - 1.83799I$ $b = -0.57261 - 1.48824I$	$-6.82693 + 12.09980I$	0
$u = \ 0.409467 - 1.310280I$ $a = \ 0.49920 + 1.83799I$ $b = -0.57261 + 1.48824I$	$-6.82693 - 12.09980I$	0
$u = \ 1.358860 + 0.291595I$ $a = -0.167748 - 0.416848I$ $b = \ 0.47345 - 1.38234I$	$-2.8950 - 14.4974I$	0
$u = \ 1.358860 - 0.291595I$ $a = -0.167748 + 0.416848I$ $b = \ 0.47345 + 1.38234I$	$-2.8950 + 14.4974I$	0
$u = -0.508782 + 1.299420I$ $a = -0.621300 - 1.210290I$ $b = -0.27603 - 1.56207I$	$-9.03467 + 2.56211I$	0
$u = -0.508782 - 1.299420I$ $a = -0.621300 + 1.210290I$ $b = -0.27603 + 1.56207I$	$-9.03467 - 2.56211I$	0
$u = -0.672168 + 1.224180I$ $a = -0.060999 + 0.381160I$ $b = \ 0.524640 + 0.458541I$	$-3.35163 - 8.24765I$	0
$u = -0.672168 - 1.224180I$ $a = -0.060999 - 0.381160I$ $b = \ 0.524640 - 0.458541I$	$-3.35163 + 8.24765I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.599189 + 1.274080I$ $a = -0.90287 + 1.82392I$ $b = 0.47345 + 1.38234I$	$-2.8950 + 14.4974I$	0
$u = 0.599189 - 1.274080I$ $a = -0.90287 - 1.82392I$ $b = 0.47345 - 1.38234I$	$-2.8950 - 14.4974I$	0
$u = 0.50634 + 1.34386I$ $a = 0.63369 - 1.48097I$ $b = -0.67356 - 2.01674I$	$-4.35700 + 6.39751I$	0
$u = 0.50634 - 1.34386I$ $a = 0.63369 + 1.48097I$ $b = -0.67356 + 2.01674I$	$-4.35700 - 6.39751I$	0
$u = 0.65281 + 1.29482I$ $a = 0.61893 - 1.37048I$ $b = -0.152857 - 1.234760I$	$-2.34278 + 6.87328I$	0
$u = 0.65281 - 1.29482I$ $a = 0.61893 + 1.37048I$ $b = -0.152857 + 1.234760I$	$-2.34278 - 6.87328I$	0
$u = -0.179168 + 0.438917I$ $a = 0.92123 + 1.72564I$ $b = 0.640072 + 0.133424I$	$-2.23820 + 2.40729I$	$0. - 4.11907I$
$u = -0.179168 - 0.438917I$ $a = 0.92123 - 1.72564I$ $b = 0.640072 - 0.133424I$	$-2.23820 - 2.40729I$	$0. + 4.11907I$
$u = -0.55146 + 1.43162I$ $a = -0.71053 - 1.46440I$ $b = 0.442866 - 1.291260I$	$-6.43178 - 7.09340I$	0
$u = -0.55146 - 1.43162I$ $a = -0.71053 + 1.46440I$ $b = 0.442866 + 1.291260I$	$-6.43178 + 7.09340I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.048071 + 0.434921I$ $a = 1.289930 - 0.516426I$ $b = -0.615975 - 0.614978I$	$1.52205 + 1.28713I$	$6.00000 + 1.19437I$
$u = 0.048071 - 0.434921I$ $a = 1.289930 + 0.516426I$ $b = -0.615975 + 0.614978I$	$1.52205 - 1.28713I$	$6.00000 - 1.19437I$
$u = -0.46307 + 1.52709I$ $a = 0.103975 - 0.107638I$ $b = -1.17122 - 0.90354I$	$-2.50522 + 4.14089I$	0
$u = -0.46307 - 1.52709I$ $a = 0.103975 + 0.107638I$ $b = -1.17122 + 0.90354I$	$-2.50522 - 4.14089I$	0
$u = 0.65371 + 1.48575I$ $a = 0.078428 - 0.507422I$ $b = -1.52601 - 0.32594I$	$-1.36965 + 5.17554I$	0
$u = 0.65371 - 1.48575I$ $a = 0.078428 + 0.507422I$ $b = -1.52601 + 0.32594I$	$-1.36965 - 5.17554I$	0
$u = -0.84279 + 1.39794I$ $a = 0.89286 + 1.32417I$ $b = -0.57261 + 1.48824I$	$-6.82693 - 12.09980I$	0
$u = -0.84279 - 1.39794I$ $a = 0.89286 - 1.32417I$ $b = -0.57261 - 1.48824I$	$-6.82693 + 12.09980I$	0
$u = -0.041405 + 0.359094I$ $a = -1.058520 - 0.511708I$ $b = 0.558660 + 1.081100I$	$-1.57137 + 8.24589I$	$10.46853 + 4.04249I$
$u = -0.041405 - 0.359094I$ $a = -1.058520 + 0.511708I$ $b = 0.558660 - 1.081100I$	$-1.57137 - 8.24589I$	$10.46853 - 4.04249I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.84093 + 1.49867I$ $a = -0.612240 + 1.229630I$ $b = 0.340055 + 1.089170I$	$-5.28119 + 11.70500I$	0
$u = 0.84093 - 1.49867I$ $a = -0.612240 - 1.229630I$ $b = 0.340055 - 1.089170I$	$-5.28119 - 11.70500I$	0
$u = 0.08032 + 1.79902I$ $a = -0.114327 + 1.345830I$ $b = -0.19479 + 1.46179I$	$-10.62740 - 8.02859I$	0
$u = 0.08032 - 1.79902I$ $a = -0.114327 - 1.345830I$ $b = -0.19479 - 1.46179I$	$-10.62740 + 8.02859I$	0
$u = -1.21677 + 1.35360I$ $a = -0.168199 + 0.474920I$ $b = 0.68915 + 1.43767I$	$-4.91308 + 3.36425I$	0
$u = -1.21677 - 1.35360I$ $a = -0.168199 - 0.474920I$ $b = 0.68915 - 1.43767I$	$-4.91308 - 3.36425I$	0
$u = -0.0123626 + 0.0221719I$ $a = 16.5451 - 13.6233I$ $b = 0.746181 - 0.367556I$	$0.47029 + 3.49839I$	$8.25031 - 3.87990I$
$u = -0.0123626 - 0.0221719I$ $a = 16.5451 + 13.6233I$ $b = 0.746181 + 0.367556I$	$0.47029 - 3.49839I$	$8.25031 + 3.87990I$
$u = -2.00643 + 0.13625I$ $a = 0.110511 - 0.717520I$ $b = -0.132437 - 1.101920I$	$-1.35819 - 0.58027I$	0
$u = -2.00643 - 0.13625I$ $a = 0.110511 + 0.717520I$ $b = -0.132437 + 1.101920I$	$-1.35819 + 0.58027I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.31518+2.73500I$		
$a=-0.125673-1.042310I$	$-1.340640-0.177537I$	0
$b=\ \ 0.026371-1.031480I$		
$u=-1.31518-2.73500I$		
$a=-0.125673+1.042310I$	$-1.340640+0.177537I$	0
$b=\ \ 0.026371+1.031480I$		

III. $I_3^u =$
$\langle -4u^{15}-2u^{14}+\cdots+b+11,\ 4u^{15}+25u^{14}+\cdots+3a+48,\ u^{16}+u^{15}+\cdots-3u+3\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{4}{3}u^{15} - \frac{25}{3}u^{14} + \cdots + \frac{19}{3}u - 16 \\ 4u^{15} + 2u^{14} + \cdots + 15u - 11 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{22}{3}u^{15} - \frac{16}{3}u^{14} + \cdots - \frac{80}{3}u + 15 \\ -7u^{15} - 9u^{14} + \cdots - 18u + 4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} \frac{19}{3}u^{15} + \frac{1}{3}u^{14} + \cdots + \frac{83}{3}u - 22 \\ 8u^{15} + 5u^{14} + \cdots + 27u - 16 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -\frac{13}{3}u^{15} - \frac{4}{3}u^{14} + \cdots - \frac{50}{3}u + 13 \\ -4u^{15} - 3u^{14} + \cdots - 12u + 7 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} \frac{4}{3}u^{15} - \frac{11}{3}u^{14} + \cdots + \frac{35}{3}u - 14 \\ 2u^{14} + 3u^{13} + \cdots - 4u + 5 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} \frac{19}{3}u^{15} - \frac{14}{3}u^{14} + \cdots + \frac{110}{3}u - 35 \\ 5u^{15} + u^{14} + \cdots + 21u - 16 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} \frac{29}{3}u^{15} + \frac{47}{3}u^{14} + \cdots + \frac{67}{3}u + 3 \\ 8u^{15} + 14u^{14} + \cdots + 16u + 4 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} \frac{1}{3}u^{15} - \frac{5}{3}u^{14} + \cdots + \frac{14}{3}u - 6 \\ -u^{15} + 2u^{14} + \cdots - 7u + 8 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^{15} - 13u^{14} - 6u^{13} - 102u^{12} - 96u^{11} - 308u^{10} - 290u^9 - 464u^8 - 436u^7 - 380u^6 - 381u^5 - 166u^4 - 147u^3 - 96u^2 + 24u - 39$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{16} + 2u^{14} + \cdots + 2u + 1$
c_2	$u^{16} + 4u^{15} + \cdots + 9u + 1$
c_3, c_9	$u^{16} + u^{15} + \cdots - 3u + 3$
c_5, c_{11}	$u^{16} - u^{15} + \cdots + 3u + 3$
c_6	$u^{16} - 4u^{15} + \cdots - 9u + 1$
c_7	$u^{16} + 4u^{14} + \cdots + 6u + 3$
c_8	$u^{16} + 7u^{15} + \cdots + 2u + 7$
c_{10}, c_{12}	$u^{16} + 3u^{15} + \cdots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{16} + 4y^{15} + \cdots + 12y + 1$
c_2, c_6	$y^{16} + 16y^{15} + \cdots - 3y + 1$
c_3, c_5, c_9 c_{11}	$y^{16} + 13y^{15} + \cdots + 39y + 9$
c_7	$y^{16} + 8y^{15} + \cdots + 30y + 9$
c_8	$y^{16} - 5y^{15} + \cdots - 438y + 49$
c_{10}, c_{12}	$y^{16} - 7y^{15} + \cdots - 13y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.420917 + 0.909184I$ $a = -1.002560 - 0.179274I$ $b = -0.216901 - 0.155989I$	$-0.95443 + 4.92787I$	$5.29993 - 6.19457I$
$u = \quad 0.420917 - 0.909184I$ $a = -1.002560 + 0.179274I$ $b = -0.216901 + 0.155989I$	$-0.95443 - 4.92787I$	$5.29993 + 6.19457I$
$u = \quad 0.253785 + 1.063560I$ $a = -1.24287 + 1.58843I$ $b = \quad 0.094606 + 0.978685I$	$-1.50213 + 0.16965I$	$3.85688 + 0.08312I$
$u = \quad 0.253785 - 1.063560I$ $a = -1.24287 - 1.58843I$ $b = \quad 0.094606 - 0.978685I$	$-1.50213 - 0.16965I$	$3.85688 - 0.08312I$
$u = -0.871520 + 0.213200I$ $a = -0.424056 + 0.635730I$ $b = -0.193711 + 1.001170I$	$1.26269 - 1.02096I$	$7.85089 + 0.96044I$
$u = -0.871520 - 0.213200I$ $a = -0.424056 - 0.635730I$ $b = -0.193711 - 1.001170I$	$1.26269 + 1.02096I$	$7.85089 - 0.96044I$
$u = \quad 0.252999 + 1.110280I$ $a = -0.453280 - 0.480405I$ $b = -1.232950 - 0.359345I$	$-1.62134 + 4.42630I$	$2.55682 - 6.41336I$
$u = \quad 0.252999 - 1.110280I$ $a = -0.453280 + 0.480405I$ $b = -1.232950 + 0.359345I$	$-1.62134 - 4.42630I$	$2.55682 + 6.41336I$
$u = \quad 0.195085 + 1.311920I$ $a = \quad 0.37530 - 1.65337I$ $b = \quad 0.26508 - 2.17968I$	$-7.04489 + 6.02866I$	$12.8971 - 8.8863I$
$u = \quad 0.195085 - 1.311920I$ $a = \quad 0.37530 + 1.65337I$ $b = \quad 0.26508 + 2.17968I$	$-7.04489 - 6.02866I$	$12.8971 + 8.8863I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.514563+1.288660I$ $a=\ \ 0.75028+1.76511I$ $b=-0.54840+1.45507I$	$-6.89878-10.55000I$	$1.03549+6.62062I$
$u=-0.514563-1.288660I$ $a=\ \ 0.75028-1.76511I$ $b=-0.54840-1.45507I$	$-6.89878+10.55000I$	$1.03549-6.62062I$
$u=\ \ 0.412331+0.409143I$ $a=\ \ 0.541732+0.395711I$ $b=-0.509401-0.636353I$	$1.99867+1.85862I$	$14.1439-7.1748I$
$u=\ \ 0.412331-0.409143I$ $a=\ \ 0.541732-0.395711I$ $b=-0.509401+0.636353I$	$1.99867-1.85862I$	$14.1439+7.1748I$
$u=-0.64903+1.29387I$ $a=-1.04455-0.99704I$ $b=\ \ 0.341677-0.986966I$	$-4.97900-10.59500I$	$2.85903+5.79293I$
$u=-0.64903-1.29387I$ $a=-1.04455+0.99704I$ $b=\ \ 0.341677+0.986966I$	$-4.97900+10.59500I$	$2.85903-5.79293I$

IV. $I_4^u =$
$\langle \mathbf{1.46\times 10^{31}u^{35}-5.33\times 10^{31}u^{34}+\cdots+6.50\times 10^{30}b-1.75\times 10^{32},\ 2.41\times 10^{32}u^{35}-}$
$\mathbf{8.54\times 10^{32}u^{34}+\cdots+1.30\times 10^{31}a+2.13\times 10^{33},\ u^{36}-5u^{35}+\cdots-24u+4}\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-18.5018u^{35}+65.6475u^{34}+\cdots+573.304u-163.761\\-2.25111u^{35}+8.19101u^{34}+\cdots-130.579u+26.8620\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-14.7350u^{35}+63.3004u^{34}+\cdots+641.306u-108.998\\-0.221617u^{35}-2.14481u^{34}+\cdots+127.538u-14.2339\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-26.2162u^{35}+133.629u^{34}+\cdots-912.832u+109.935\\-4.83673u^{35}+20.9946u^{34}+\cdots+39.0001u+2.67084\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.945470u^{35}-9.55906u^{34}+\cdots+578.798u-81.7339\\10.7980u^{35}-51.1811u^{34}+\cdots+57.2347u+7.93694\end{pmatrix}$$
$$a_8 = \begin{pmatrix}14.7296u^{35}-77.1699u^{34}+\cdots+427.538u-32.8406\\6.23078u^{35}-47.1977u^{34}+\cdots+1154.59u-194.031\end{pmatrix}$$
$$a_9 = \begin{pmatrix}17.2085u^{35}-85.0651u^{34}+\cdots+161.006u+17.2473\\8.70964u^{35}-55.0929u^{34}+\cdots+888.062u-143.943\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-15.5167u^{35}+73.4948u^{34}+\cdots+297.881u-89.8827\\-25.4887u^{35}+123.183u^{34}+\cdots-203.537u-8.68232\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}1.83728u^{35}-15.0908u^{34}+\cdots+113.498u-41.7589\\1.91423u^{35}-13.8996u^{34}+\cdots+198.997u-44.9023\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -22.3160u^{35}+213.152u^{34}+\cdots-141.462u-26.8886$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{36} - 5u^{35} + \cdots + 6u + 1$
c_2	$(u^{18} - 3u^{17} + \cdots + u + 1)^2$
c_3, c_9	$u^{36} - 5u^{35} + \cdots - 24u + 4$
c_5, c_{11}	$u^{36} + 5u^{35} + \cdots + 24u + 4$
c_6	$(u^{18} + 3u^{17} + \cdots - u + 1)^2$
c_7	$(u^{18} + u^{17} + \cdots + 18u + 4)^2$
c_8	$(u^{18} + u^{17} + \cdots - 6u + 1)^2$
c_{10}, c_{12}	$u^{36} - 5u^{35} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{36} - 15y^{35} + \cdots + 72y + 1$
c_2, c_6	$(y^{18} + 13y^{17} + \cdots + 17y + 1)^2$
c_3, c_5, c_9 c_{11}	$y^{36} + 27y^{35} + \cdots + 512y + 16$
c_7	$(y^{18} + 13y^{17} + \cdots - 108y + 16)^2$
c_8	$(y^{18} - 15y^{17} + \cdots - 6y + 1)^2$
c_{10}, c_{12}	$y^{36} + 5y^{35} + \cdots + 3y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.988164 + 0.061842I$ $a = 0.263854 - 0.810040I$ $b = -0.137109 - 0.487566I$	$2.47135 + 2.25336I$	$13.59240 - 3.23004I$
$u = 0.988164 - 0.061842I$ $a = 0.263854 + 0.810040I$ $b = -0.137109 + 0.487566I$	$2.47135 - 2.25336I$	$13.59240 + 3.23004I$
$u = 0.551731 + 0.810491I$ $a = 0.713994 + 0.763040I$ $b = -0.137109 - 0.487566I$	$2.47135 + 2.25336I$	$13.59240 - 3.23004I$
$u = 0.551731 - 0.810491I$ $a = 0.713994 - 0.763040I$ $b = -0.137109 + 0.487566I$	$2.47135 - 2.25336I$	$13.59240 + 3.23004I$
$u = 0.238067 + 0.997970I$ $a = 0.076200 - 0.985278I$ $b = -0.160625 + 0.585376I$	$-1.81554 + 1.26403I$	$6.00000 + 3.21928I$
$u = 0.238067 - 0.997970I$ $a = 0.076200 + 0.985278I$ $b = -0.160625 - 0.585376I$	$-1.81554 - 1.26403I$	$6.00000 - 3.21928I$
$u = 0.093772 + 0.902059I$ $a = -5.68276 + 5.88603I$ $b = 0.044924 + 1.036660I$	$-1.312680 + 0.198413I$	$47.0328 - 37.1580I$
$u = 0.093772 - 0.902059I$ $a = -5.68276 - 5.88603I$ $b = 0.044924 - 1.036660I$	$-1.312680 - 0.198413I$	$47.0328 + 37.1580I$
$u = -0.237477 + 1.072500I$ $a = -0.002463 + 0.252847I$ $b = -0.845619 - 0.639447I$	$-1.85322 + 4.15690I$	0
$u = -0.237477 - 1.072500I$ $a = -0.002463 - 0.252847I$ $b = -0.845619 + 0.639447I$	$-1.85322 - 4.15690I$	0

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.540271+1.018040I$ $a=-1.64317-2.12470I$ $b=\ \ 0.558341-1.034540I$	$-1.72669-8.47761I$	$0.+19.7333I$
$u=-0.540271-1.018040I$ $a=-1.64317+2.12470I$ $b=\ \ 0.558341+1.034540I$	$-1.72669+8.47761I$	$0.-19.7333I$
$u=-0.822236+0.836487I$ $a=-0.026185+0.691118I$ $b=-0.205774+0.690997I$	$0.69128-7.64092I$	0
$u=-0.822236-0.836487I$ $a=-0.026185-0.691118I$ $b=-0.205774-0.690997I$	$0.69128+7.64092I$	0
$u=\ \ 0.765921+0.890126I$ $a=\ \ 0.398563-1.354610I$ $b=-0.160625-0.585376I$	$-1.81554-1.26403I$	0
$u=\ \ 0.765921-0.890126I$ $a=\ \ 0.398563+1.354610I$ $b=-0.160625+0.585376I$	$-1.81554+1.26403I$	0
$u=\ \ 0.063294+0.822411I$ $a=-0.231681+0.972957I$ $b=\ \ 0.957692+0.626775I$	$-0.46312-3.20443I$	$-0.64989+2.25243I$
$u=\ \ 0.063294-0.822411I$ $a=-0.231681-0.972957I$ $b=\ \ 0.957692-0.626775I$	$-0.46312+3.20443I$	$-0.64989-2.25243I$
$u=-0.156653+0.791505I$ $a=-0.70708-3.30896I$ $b=\ \ 0.56067-1.84411I$	$-4.25074-6.21673I$	$9.17462-8.20295I$
$u=-0.156653-0.791505I$ $a=-0.70708+3.30896I$ $b=\ \ 0.56067+1.84411I$	$-4.25074+6.21673I$	$9.17462+8.20295I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.326994 + 0.706183I$ $a = -0.626759 - 1.267330I$ $b = -0.845619 - 0.639447I$	$-1.85322 + 4.15690I$	$4.50613 - 5.01648I$
$u = 0.326994 - 0.706183I$ $a = -0.626759 + 1.267330I$ $b = -0.845619 + 0.639447I$	$-1.85322 - 4.15690I$	$4.50613 + 5.01648I$
$u = 0.718437 + 1.009760I$ $a = 0.184805 + 0.583788I$ $b = 0.957692 - 0.626775I$	$-0.46312 + 3.20443I$	0
$u = 0.718437 - 1.009760I$ $a = 0.184805 - 0.583788I$ $b = 0.957692 + 0.626775I$	$-0.46312 - 3.20443I$	0
$u = -0.098128 + 1.303600I$ $a = 0.12119 - 1.73267I$ $b = 0.72750 - 1.40403I$	$-4.90011 - 3.43557I$	0
$u = -0.098128 - 1.303600I$ $a = 0.12119 + 1.73267I$ $b = 0.72750 + 1.40403I$	$-4.90011 + 3.43557I$	0
$u = 0.53473 + 1.34754I$ $a = -0.65398 + 1.38571I$ $b = 0.56067 + 1.84411I$	$-4.25074 + 6.21673I$	0
$u = 0.53473 - 1.34754I$ $a = -0.65398 - 1.38571I$ $b = 0.56067 - 1.84411I$	$-4.25074 - 6.21673I$	0
$u = 0.124178 + 0.505233I$ $a = -0.061672 - 0.283529I$ $b = 0.558341 + 1.034540I$	$-1.72669 + 8.47761I$	$-5.4749 - 19.7333I$
$u = 0.124178 - 0.505233I$ $a = -0.061672 + 0.283529I$ $b = 0.558341 - 1.034540I$	$-1.72669 - 8.47761I$	$-5.4749 + 19.7333I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.071915 + 0.439903I$ $a = -3.21959 + 5.88770I$ $b = -0.205774 - 0.690997I$	$0.69128 + 7.64092I$	$10.85833 - 3.97496I$
$u = 0.071915 - 0.439903I$ $a = -3.21959 - 5.88770I$ $b = -0.205774 + 0.690997I$	$0.69128 - 7.64092I$	$10.85833 + 3.97496I$
$u = -1.15599 + 1.46510I$ $a = -0.208122 + 0.470187I$ $b = 0.72750 + 1.40403I$	$-4.90011 + 3.43557I$	0
$u = -1.15599 - 1.46510I$ $a = -0.208122 - 0.470187I$ $b = 0.72750 - 1.40403I$	$-4.90011 - 3.43557I$	0
$u = 1.03355 + 2.17921I$ $a = -0.195147 + 1.065590I$ $b = 0.044924 + 1.036660I$	$-1.312680 + 0.198413I$	0
$u = 1.03355 - 2.17921I$ $a = -0.195147 - 1.065590I$ $b = 0.044924 - 1.036660I$	$-1.312680 - 0.198413I$	0

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v + 14$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.500000 + 0.866025I$ $a = 0$ $b = -0.500000 - 0.866025I$	$1.64493 + 2.02988I$	$12.00000 - 3.46410I$
$v = 0.500000 - 0.866025I$ $a = 0$ $b = -0.500000 + 0.866025I$	$1.64493 - 2.02988I$	$12.00000 + 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u^2-u+1)(u^{16}+2u^{14}+\cdots+2u+1)(u^{36}-5u^{35}+\cdots+6u+1)$ $\cdot(u^{41}-u^{40}+\cdots+5u-1)(u^{152}-12u^{151}+\cdots-8870u+337)$
c_2	$(u^2+u+1)(u^{16}+4u^{15}+\cdots+9u+1)(u^{18}-3u^{17}+\cdots+u+1)^2$ $\cdot(u^{41}-18u^{40}+\cdots+3856u-272)$ $\cdot(u^{76}+8u^{75}+\cdots+21348u+1357)^2$
c_3, c_9	$u^2(u^{16}+u^{15}+\cdots-3u+3)(u^{36}-5u^{35}+\cdots-24u+4)$ $\cdot(u^{41}-u^{40}+\cdots+16u-4)(u^{152}+4u^{151}+\cdots+5344u+127)$
c_5, c_{11}	$u^2(u^{16}-u^{15}+\cdots+3u+3)(u^{36}+5u^{35}+\cdots+24u+4)$ $\cdot(u^{41}-u^{40}+\cdots+16u-4)(u^{152}+4u^{151}+\cdots+5344u+127)$
c_6	$(u^2-u+1)(u^{16}-4u^{15}+\cdots-9u+1)(u^{18}+3u^{17}+\cdots-u+1)^2$ $\cdot(u^{41}-18u^{40}+\cdots+3856u-272)$ $\cdot(u^{76}+8u^{75}+\cdots+21348u+1357)^2$
c_7	$u^2(u^{16}+4u^{14}+\cdots+6u+3)(u^{18}+u^{17}+\cdots+18u+4)^2$ $\cdot(u^{41}-35u^{40}+\cdots+9437184u-524288)$ $\cdot(u^{76}+14u^{75}+\cdots+18u+1)^2$
c_8	$((u+1)^2)(u^{16}+7u^{15}+\cdots+2u+7)(u^{18}+u^{17}+\cdots-6u+1)^2$ $\cdot(u^{41}-28u^{40}+\cdots+146856u-11968)$ $\cdot(u^{76}+11u^{75}+\cdots+3116u+157)^2$
c_{10}, c_{12}	$((u-1)^2)(u^{16}+3u^{15}+\cdots+3u+1)(u^{36}-5u^{35}+\cdots-5u+1)$ $\cdot(u^{41}+u^{40}+\cdots-u-1)(u^{152}+16u^{151}+\cdots+41u+1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2+y+1)(y^{16}+4y^{15}+\cdots+12y+1)(y^{36}-15y^{35}+\cdots+72y+1)$ $\cdot(y^{41}-17y^{40}+\cdots+47y-1)$ $\cdot(y^{152}-10y^{151}+\cdots-12017626y+113569)$
c_2, c_6	$(y^2+y+1)(y^{16}+16y^{15}+\cdots-3y+1)(y^{18}+13y^{17}+\cdots+17y+1)^2$ $\cdot(y^{41}+30y^{40}+\cdots+474496y-73984)$ $\cdot(y^{76}+56y^{75}+\cdots+18480116y+1841449)^2$
c_3, c_5, c_9 c_{11}	$y^2(y^{16}+13y^{15}+\cdots+39y+9)(y^{36}+27y^{35}+\cdots+512y+16)$ $\cdot(y^{41}+29y^{40}+\cdots+208y^2-16)$ $\cdot(y^{152}+94y^{151}+\cdots+27521308y+16129)$
c_7	$y^2(y^{16}+8y^{15}+\cdots+30y+9)(y^{18}+13y^{17}+\cdots-108y+16)^2$ $\cdot(y^{41}+9y^{40}+\cdots+1649267441664y-274877906944)$ $\cdot(y^{76}+28y^{75}+\cdots-14y+1)^2$
c_8	$((y-1)^2)(y^{16}-5y^{15}+\cdots-438y+49)(y^{18}-15y^{17}+\cdots-6y+1)^2$ $\cdot(y^{41}-8y^{40}+\cdots-428680128y-143233024)$ $\cdot(y^{76}-y^{75}+\cdots-25068y+24649)^2$
c_{10}, c_{12}	$((y-1)^2)(y^{16}-7y^{15}+\cdots-13y+1)(y^{36}+5y^{35}+\cdots+3y+1)$ $\cdot(y^{41}+7y^{40}+\cdots+y-1)(y^{152}-12y^{151}+\cdots+199y+1)$