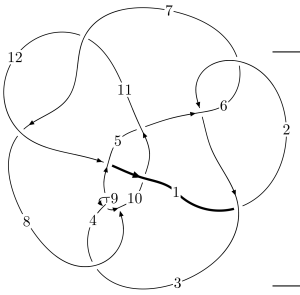
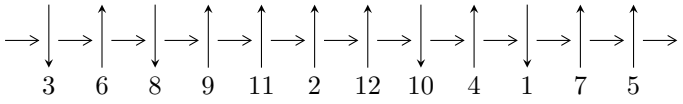
$12a_{0287}$ $(K12a_{0287})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.28450 \times 10^{165} u^{139} + 9.50032 \times 10^{165} u^{138} + \cdots + 4.17997 \times 10^{165} b + 1.34496 \times 10^{167},$$
$$- 3.45422 \times 10^{167} u^{139} + 5.01824 \times 10^{166} u^{138} + \cdots + 9.19593 \times 10^{166} a + 3.61218 \times 10^{168},$$
$$u^{140} + u^{139} + \cdots + 14u + 11 \rangle$$
$$I_2^u = \langle u^{27} + 11u^{25} + \cdots + b + 10u,\ 5u^{27} + 37u^{25} + \cdots + a + 13u,\ u^{28} + 7u^{26} + \cdots + 5u^2 + 1 \rangle$$
$$I_3^u = \langle u^2 + b,\ u^2 + a - 1,\ u^9 + u^7 + u^5 + u - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 177 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. $\boldsymbol{I_1^u = \langle -5.28 \times 10^{165} u^{139} + 9.50 \times 10^{165} u^{138} + \cdots + 4.18 \times 10^{165} b + 1.34 \times 10^{167},\ -3.45 \times 10^{167} u^{139} + 5.02 \times 10^{166} u^{138} + \cdots + 9.20 \times 10^{166} a + 3.61 \times 10^{168},\ u^{140} + u^{139} + \cdots + 14u + 11 \rangle}$

(i) Arc colorings

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

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

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

$$a_1 = \begin{pmatrix} 3.75625u^{139} - 0.545703u^{138} + \cdots + 18.3027u - 39.2802 \\ 1.26424u^{139} - 2.27282u^{138} + \cdots - 5.05567u - 32.1762 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -4.21132u^{139} - 1.90514u^{138} + \cdots - 28.7256u + 13.4197 \\ -0.337816u^{139} + 0.850006u^{138} + \cdots - 35.4920u + 9.27420 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 3.41851u^{139} - 0.916546u^{138} + \cdots + 18.8635u - 50.7061 \\ -0.955936u^{139} - 2.22549u^{138} + \cdots + 14.6427u - 34.2575 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 3.41935u^{139} - 0.0188456u^{138} + \cdots + 15.9636u - 43.2660 \\ -0.152810u^{139} - 3.05181u^{138} + \cdots - 13.3247u - 36.1705 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.90592u^{139} - 1.04471u^{138} + \cdots + 4.44981u - 54.4255 \\ 0.423969u^{139} - 2.13116u^{138} + \cdots - 9.49081u - 28.3117 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -4.11706u^{139} - 1.14081u^{138} + \cdots - 23.6884u + 35.9336 \\ -2.17162u^{139} - 2.14855u^{138} + \cdots - 46.4276u + 7.90784 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -2.40385u^{139} + 2.28727u^{138} + \cdots - 1.07060u - 7.80379$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{140} + 58u^{139} + \cdots + 876101u + 17161$
c_2, c_6	$u^{140} - 2u^{139} + \cdots + 17u + 131$
c_3	$u^{140} - u^{139} + \cdots - 24244188u + 5702444$
c_4, c_9	$u^{140} + u^{139} + \cdots + 14u + 11$
c_5	$u^{140} + u^{139} + \cdots - 143354u + 167897$
c_7, c_{11}	$u^{140} + 10u^{139} + \cdots + 49344u + 2992$
c_8	$u^{140} + 71u^{139} + \cdots + 1322u + 121$
c_{10}	$u^{140} - 23u^{139} + \cdots + 640u + 89$
c_{12}	$u^{140} - u^{139} + \cdots + 26u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{140} + 62y^{139} + \cdots - 8770457803y + 294499921$
c_2, c_6	$y^{140} + 58y^{139} + \cdots + 876101y + 17161$
c_3	$y^{140} - 57y^{139} + \cdots - 327195805998920y + 32517867573136$
c_4, c_9	$y^{140} + 71y^{139} + \cdots + 1322y + 121$
c_5	$y^{140} - 39y^{139} + \cdots - 427794952430y + 28189402609$
c_7, c_{11}	$y^{140} - 102y^{139} + \cdots - 552000640y + 8952064$
c_8	$y^{140} + 7y^{139} + \cdots + 781458y + 14641$
c_{10}	$y^{140} - 13y^{139} + \cdots - 780196y + 7921$
c_{12}	$y^{140} - 13y^{139} + \cdots + 104y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.911969 + 0.414142I$ $a = -0.295171 + 0.791970I$ $b = 0.539256 + 0.590000I$	$1.31840 - 4.43564I$	0
$u = 0.911969 - 0.414142I$ $a = -0.295171 - 0.791970I$ $b = 0.539256 - 0.590000I$	$1.31840 + 4.43564I$	0
$u = -0.724107 + 0.706862I$ $a = 1.57131 - 0.24069I$ $b = 1.33717 + 0.90378I$	$7.44163 - 5.54565I$	0
$u = -0.724107 - 0.706862I$ $a = 1.57131 + 0.24069I$ $b = 1.33717 - 0.90378I$	$7.44163 + 5.54565I$	0
$u = 0.573448 + 0.872478I$ $a = -1.38716 + 0.30535I$ $b = -1.41475 + 1.27921I$	$0.98342 + 4.84804I$	0
$u = 0.573448 - 0.872478I$ $a = -1.38716 - 0.30535I$ $b = -1.41475 - 1.27921I$	$0.98342 - 4.84804I$	0
$u = -0.249323 + 0.915343I$ $a = 0.113498 + 0.814881I$ $b = -0.415139 - 0.488688I$	$-3.96870 - 1.13105I$	0
$u = -0.249323 - 0.915343I$ $a = 0.113498 - 0.814881I$ $b = -0.415139 + 0.488688I$	$-3.96870 + 1.13105I$	0
$u = -0.371737 + 0.986379I$ $a = 1.31279 + 1.63815I$ $b = -0.17991 + 2.38626I$	$1.05783 + 3.25130I$	0
$u = -0.371737 - 0.986379I$ $a = 1.31279 - 1.63815I$ $b = -0.17991 - 2.38626I$	$1.05783 - 3.25130I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.503794 + 0.799252I$ $a = -0.859487 + 0.896640I$ $b = -0.12251 + 1.61088I$	$1.76715 + 2.73079I$	0
$u = \quad 0.503794 - 0.799252I$ $a = -0.859487 - 0.896640I$ $b = -0.12251 - 1.61088I$	$1.76715 - 2.73079I$	0
$u = \quad 0.319065 + 0.887593I$ $a = -1.53683 + 0.81693I$ $b = -1.94899 + 1.51337I$	$1.17088 + 5.15716I$	0
$u = \quad 0.319065 - 0.887593I$ $a = -1.53683 - 0.81693I$ $b = -1.94899 - 1.51337I$	$1.17088 - 5.15716I$	0
$u = \quad 0.760627 + 0.745237I$ $a = -1.45122 - 0.27255I$ $b = -1.30533 + 0.94896I$	$5.97477 + 11.24740I$	0
$u = \quad 0.760627 - 0.745237I$ $a = -1.45122 + 0.27255I$ $b = -1.30533 - 0.94896I$	$5.97477 - 11.24740I$	0
$u = \quad 0.386677 + 0.999740I$ $a = -1.44116 + 1.04277I$ $b = -0.41987 + 2.11426I$	$1.72635 + 2.31795I$	0
$u = \quad 0.386677 - 0.999740I$ $a = -1.44116 - 1.04277I$ $b = -0.41987 - 2.11426I$	$1.72635 - 2.31795I$	0
$u = -0.529092 + 0.760841I$ $a = -2.18860 + 0.27623I$ $b = -1.37970 - 1.09749I$	$1.35663 - 6.65828I$	0
$u = -0.529092 - 0.760841I$ $a = -2.18860 - 0.27623I$ $b = -1.37970 + 1.09749I$	$1.35663 + 6.65828I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.882048+0.278481I$		
$a=$	$0.009019+0.462736I$	$0.167945-0.191438I$	0
$b=$	$0.146813+0.345498I$		
$u=$	$0.882048-0.278481I$		
$a=$	$0.009019-0.462736I$	$0.167945+0.191438I$	0
$b=$	$0.146813-0.345498I$		
$u=$	$-0.911020+0.149587I$		
$a=$	$-0.404056+0.037828I$	$-0.81281+3.32987I$	0
$b=$	$0.174739+0.028208I$		
$u=$	$-0.911020-0.149587I$		
$a=$	$-0.404056-0.037828I$	$-0.81281-3.32987I$	0
$b=$	$0.174739-0.028208I$		
$u=$	$-0.432089+0.996285I$		
$a=$	$-2.34096-0.75184I$	$0.95739-6.37467I$	0
$b=$	$-1.41076-1.40605I$		
$u=$	$-0.432089-0.996285I$		
$a=$	$-2.34096+0.75184I$	$0.95739+6.37467I$	0
$b=$	$-1.41076+1.40605I$		
$u=$	$-0.855066+0.311267I$		
$a=$	$-1.47002-0.74678I$	$3.4637+14.2963I$	0
$b=$	$0.17531-1.42918I$		
$u=$	$-0.855066-0.311267I$		
$a=$	$-1.47002+0.74678I$	$3.4637-14.2963I$	0
$b=$	$0.17531+1.42918I$		
$u=$	$0.383480+1.044560I$		
$a=$	$1.29468-2.09361I$	$0.19673-2.64784I$	0
$b=$	$1.40886-2.17172I$		
$u=$	$0.383480-1.044560I$		
$a=$	$1.29468+2.09361I$	$0.19673+2.64784I$	0
$b=$	$1.40886+2.17172I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.822294 + 0.316409I$ $a = 1.46564 - 0.72560I$ $b = -0.05027 - 1.48893I$	$5.30338 - 8.23856I$	0
$u = 0.822294 - 0.316409I$ $a = 1.46564 + 0.72560I$ $b = -0.05027 + 1.48893I$	$5.30338 + 8.23856I$	0
$u = -0.407338 + 1.046110I$ $a = 1.37012 + 0.73523I$ $b = 1.93075 + 1.96344I$	$1.91948 - 1.55357I$	0
$u = -0.407338 - 1.046110I$ $a = 1.37012 - 0.73523I$ $b = 1.93075 - 1.96344I$	$1.91948 + 1.55357I$	0
$u = -0.277132 + 1.091270I$ $a = 0.210019 + 0.713495I$ $b = -0.425588 + 0.144621I$	$-3.56177 - 0.25782I$	0
$u = -0.277132 - 1.091270I$ $a = 0.210019 - 0.713495I$ $b = -0.425588 - 0.144621I$	$-3.56177 + 0.25782I$	0
$u = 0.557324 + 0.670520I$ $a = 1.90723 + 0.19763I$ $b = 1.009950 - 0.920696I$	$2.19061 + 1.51698I$	0
$u = 0.557324 - 0.670520I$ $a = 1.90723 - 0.19763I$ $b = 1.009950 + 0.920696I$	$2.19061 - 1.51698I$	0
$u = -0.588752 + 0.639692I$ $a = 0.879389 + 0.930406I$ $b = -0.13286 + 1.46117I$	$1.77091 + 2.37270I$	0
$u = -0.588752 - 0.639692I$ $a = 0.879389 - 0.930406I$ $b = -0.13286 - 1.46117I$	$1.77091 - 2.37270I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.685835+0.900388I$ $a=-0.399211-1.303950I$ $b=\ \ 0.45329-1.43925I$	$6.88187+0.21608I$	0
$u=-0.685835-0.900388I$ $a=-0.399211+1.303950I$ $b=\ \ 0.45329+1.43925I$	$6.88187-0.21608I$	0
$u=-0.497345+1.026600I$ $a=-0.05339-2.30110I$ $b=\ \ 0.14269-2.52943I$	$4.21178-2.96840I$	0
$u=-0.497345-1.026600I$ $a=-0.05339+2.30110I$ $b=\ \ 0.14269+2.52943I$	$4.21178+2.96840I$	0
$u=\ \ 0.742425+0.885018I$ $a=\ \ 0.371900-1.170730I$ $b=-0.575239-1.275530I$	$5.58093-5.64547I$	0
$u=\ \ 0.742425-0.885018I$ $a=\ \ 0.371900+1.170730I$ $b=-0.575239+1.275530I$	$5.58093+5.64547I$	0
$u=-0.288711+1.120020I$ $a=\ \ 0.055580+0.507806I$ $b=-0.830418-0.229523I$	$-3.58932+0.00780I$	0
$u=-0.288711-1.120020I$ $a=\ \ 0.055580-0.507806I$ $b=-0.830418+0.229523I$	$-3.58932-0.00780I$	0
$u=\ \ 0.535179+1.051400I$ $a=-1.26686+0.76744I$ $b=-1.33178+2.30530I$	$2.70191+0.79233I$	0
$u=\ \ 0.535179-1.051400I$ $a=-1.26686-0.76744I$ $b=-1.33178-2.30530I$	$2.70191-0.79233I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.085516 + 1.180600I$ $a = -0.123421 + 0.432627I$ $b = -0.128542 - 0.518350I$	$-4.53995 - 1.81669I$	0
$u = 0.085516 - 1.180600I$ $a = -0.123421 - 0.432627I$ $b = -0.128542 + 0.518350I$	$-4.53995 + 1.81669I$	0
$u = -0.798315 + 0.158064I$ $a = -0.741241 + 0.157814I$ $b = -0.0818703 - 0.0112551I$	$-0.86862 + 3.34041I$	0
$u = -0.798315 - 0.158064I$ $a = -0.741241 - 0.157814I$ $b = -0.0818703 + 0.0112551I$	$-0.86862 - 3.34041I$	0
$u = 0.510897 + 1.071460I$ $a = 0.14755 - 1.82024I$ $b = -1.51281 - 1.36578I$	$2.69466 + 4.26697I$	0
$u = 0.510897 - 1.071460I$ $a = 0.14755 + 1.82024I$ $b = -1.51281 + 1.36578I$	$2.69466 - 4.26697I$	0
$u = -0.504019 + 1.077930I$ $a = 1.31667 + 0.76730I$ $b = 1.59642 + 2.35524I$	$2.66785 - 5.26634I$	0
$u = -0.504019 - 1.077930I$ $a = 1.31667 - 0.76730I$ $b = 1.59642 - 2.35524I$	$2.66785 + 5.26634I$	0
$u = -0.777543 + 0.223808I$ $a = -1.45938 - 0.71051I$ $b = -0.260728 - 1.189920I$	$-1.90870 + 5.88396I$	$4.00000 - 6.87965I$
$u = -0.777543 - 0.223808I$ $a = -1.45938 + 0.71051I$ $b = -0.260728 + 1.189920I$	$-1.90870 - 5.88396I$	$4.00000 + 6.87965I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.379907 + 1.133040I$ $a = -0.392306 + 0.125578I$ $b = 0.359716 - 0.772154I$	$-7.48220 + 2.14063I$	0
$u = 0.379907 - 1.133040I$ $a = -0.392306 - 0.125578I$ $b = 0.359716 + 0.772154I$	$-7.48220 - 2.14063I$	0
$u = 0.764176 + 0.247294I$ $a = -1.78922 + 0.32789I$ $b = 0.212648 + 1.258030I$	$-0.93479 - 7.87402I$	$4.00000 + 7.57769I$
$u = 0.764176 - 0.247294I$ $a = -1.78922 - 0.32789I$ $b = 0.212648 - 1.258030I$	$-0.93479 + 7.87402I$	$4.00000 - 7.57769I$
$u = -0.530941 + 1.073870I$ $a = -0.59649 - 1.90781I$ $b = 1.22556 - 1.92500I$	$2.35475 - 9.76727I$	0
$u = -0.530941 - 1.073870I$ $a = -0.59649 + 1.90781I$ $b = 1.22556 + 1.92500I$	$2.35475 + 9.76727I$	0
$u = 0.511201 + 1.085870I$ $a = -0.81134 - 1.71392I$ $b = -0.84329 - 2.20566I$	$1.15469 + 9.56512I$	0
$u = 0.511201 - 1.085870I$ $a = -0.81134 + 1.71392I$ $b = -0.84329 + 2.20566I$	$1.15469 - 9.56512I$	0
$u = -0.715536 + 0.348808I$ $a = 0.947491 + 0.152160I$ $b = 0.076459 + 1.040320I$	$0.59136 + 2.31044I$	$4.00000 - 5.49298I$
$u = -0.715536 - 0.348808I$ $a = 0.947491 - 0.152160I$ $b = 0.076459 - 1.040320I$	$0.59136 - 2.31044I$	$4.00000 + 5.49298I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.300124 + 1.170360I$ $a = 0.060639 + 0.271340I$ $b = 1.053180 - 0.615704I$	$-5.22041 - 4.56927I$	0
$u = 0.300124 - 1.170360I$ $a = 0.060639 - 0.271340I$ $b = 1.053180 + 0.615704I$	$-5.22041 + 4.56927I$	0
$u = 0.222165 + 1.188980I$ $a = 0.569913 - 0.345685I$ $b = -0.323401 + 0.381331I$	$0.41796 - 5.15841I$	0
$u = 0.222165 - 1.188980I$ $a = 0.569913 + 0.345685I$ $b = -0.323401 - 0.381331I$	$0.41796 + 5.15841I$	0
$u = 0.503060 + 1.102730I$ $a = -0.705803 + 0.647032I$ $b = -0.59454 + 1.28486I$	$-1.09806 + 3.76347I$	0
$u = 0.503060 - 1.102730I$ $a = -0.705803 - 0.647032I$ $b = -0.59454 - 1.28486I$	$-1.09806 - 3.76347I$	0
$u = 0.525428 + 1.094590I$ $a = -2.09927 + 1.37574I$ $b = -1.36521 + 1.80930I$	$2.95162 + 7.00188I$	0
$u = 0.525428 - 1.094590I$ $a = -2.09927 - 1.37574I$ $b = -1.36521 - 1.80930I$	$2.95162 - 7.00188I$	0
$u = 0.390175 + 1.152860I$ $a = -0.237640 - 0.174763I$ $b = -0.434998 + 0.526964I$	$-1.73181 + 3.89697I$	0
$u = 0.390175 - 1.152860I$ $a = -0.237640 + 0.174763I$ $b = -0.434998 - 0.526964I$	$-1.73181 - 3.89697I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.725049+0.286531I$ $a=\ \ 1.59501+0.27107I$ $b=-0.073027+1.258600I$	$0.56147+2.93715I$	$6.93912-3.36871I$
$u=-0.725049-0.286531I$ $a=\ \ 1.59501-0.27107I$ $b=-0.073027-1.258600I$	$0.56147-2.93715I$	$6.93912+3.36871I$
$u=\ \ 0.256246+1.194190I$ $a=-0.403224+0.526139I$ $b=-0.428589+0.014810I$	$-4.69523+3.15950I$	0
$u=\ \ 0.256246-1.194190I$ $a=-0.403224-0.526139I$ $b=-0.428589-0.014810I$	$-4.69523-3.15950I$	0
$u=-0.309365+1.185560I$ $a=-0.860502+0.079393I$ $b=-0.199008+0.683391I$	$-6.20028+2.41913I$	0
$u=-0.309365-1.185560I$ $a=-0.860502-0.079393I$ $b=-0.199008-0.683391I$	$-6.20028-2.41913I$	0
$u=\ \ 0.493769+1.131300I$ $a=\ \ 1.84984-1.07514I$ $b=\ \ 1.68788-2.15259I$	$-6.69268+5.68760I$	0
$u=\ \ 0.493769-1.131300I$ $a=\ \ 1.84984+1.07514I$ $b=\ \ 1.68788+2.15259I$	$-6.69268-5.68760I$	0
$u=-0.412124+1.164170I$ $a=\ \ 0.658848+0.730608I$ $b=\ \ 0.647271+0.996129I$	$-4.64683-0.60445I$	0
$u=-0.412124-1.164170I$ $a=\ \ 0.658848-0.730608I$ $b=\ \ 0.647271-0.996129I$	$-4.64683+0.60445I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.268998+0.715960I$ $a=-1.06054-2.24870I$ $b=-0.680161-1.093680I$	$3.35259-1.39528I$	$1.67927+4.08016I$
$u=-0.268998-0.715960I$ $a=-1.06054+2.24870I$ $b=-0.680161+1.093680I$	$3.35259+1.39528I$	$1.67927-4.08016I$
$u=-0.309936+0.693725I$ $a=-1.48957+1.16494I$ $b=-1.51730+0.18423I$	$-2.72477-1.41570I$	$-0.24846+4.76390I$
$u=-0.309936-0.693725I$ $a=-1.48957-1.16494I$ $b=-1.51730-0.18423I$	$-2.72477+1.41570I$	$-0.24846-4.76390I$
$u=-0.556829+1.112940I$ $a=-1.33823-0.91168I$ $b=-0.68459-1.72487I$	$-1.64506-7.18301I$	0
$u=-0.556829-1.112940I$ $a=-1.33823+0.91168I$ $b=-0.68459+1.72487I$	$-1.64506+7.18301I$	0
$u=-0.217648+1.225930I$ $a=-0.420472-0.246603I$ $b=0.455392+0.573187I$	$-1.61265+11.02410I$	0
$u=-0.217648-1.225930I$ $a=-0.420472+0.246603I$ $b=0.455392-0.573187I$	$-1.61265-11.02410I$	0
$u=0.607376+0.445106I$ $a=2.40457-0.89073I$ $b=0.100803-0.915692I$	$4.46559+3.74657I$	$10.94549-5.79337I$
$u=0.607376-0.445106I$ $a=2.40457+0.89073I$ $b=0.100803+0.915692I$	$4.46559-3.74657I$	$10.94549+5.79337I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.542497+1.128160I$ $a=-1.71190-1.08526I$ $b=-1.18635-2.35380I$	$-1.87982-7.74973I$	0
$u=-0.542497-1.128160I$ $a=-1.71190+1.08526I$ $b=-1.18635+2.35380I$	$-1.87982+7.74973I$	0
$u=-0.271336+1.223150I$ $a=0.158492+0.175972I$ $b=0.197295+0.823123I$	$-5.55443-0.46075I$	0
$u=-0.271336-1.223150I$ $a=0.158492-0.175972I$ $b=0.197295-0.823123I$	$-5.55443+0.46075I$	0
$u=-0.536975+0.504589I$ $a=2.29279-0.29116I$ $b=1.80332+0.27481I$	$5.74913-1.25065I$	$17.0911+2.4895I$
$u=-0.536975-0.504589I$ $a=2.29279+0.29116I$ $b=1.80332-0.27481I$	$5.74913+1.25065I$	$17.0911-2.4895I$
$u=-0.616872+0.399769I$ $a=1.11263-1.45968I$ $b=1.08954+1.16118I$	$4.31207+5.22253I$	$11.41114-7.60039I$
$u=-0.616872-0.399769I$ $a=1.11263+1.45968I$ $b=1.08954-1.16118I$	$4.31207-5.22253I$	$11.41114+7.60039I$
$u=0.542135+1.149850I$ $a=1.78469-1.12003I$ $b=1.39724-2.59801I$	$-3.56785+12.76600I$	0
$u=0.542135-1.149850I$ $a=1.78469+1.12003I$ $b=1.39724+2.59801I$	$-3.56785-12.76600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.537064+1.158640I$ $a=\ 1.63348+1.41062I$ $b=\ 1.40218+2.24229I$	$-4.64179-10.77630I$	0
$u=-0.537064-1.158640I$ $a=\ 1.63348-1.41062I$ $b=\ 1.40218-2.24229I$	$-4.64179+10.77630I$	0
$u=-0.629792+1.120880I$ $a=-1.384600-0.218094I$ $b=-1.35353-1.13882I$	$-0.38936-5.55432I$	0
$u=-0.629792-1.120880I$ $a=-1.384600+0.218094I$ $b=-1.35353+1.13882I$	$-0.38936+5.55432I$	0
$u=\ 0.628629+0.334137I$ $a=\ 1.22200-0.78546I$ $b=\ 0.49265-1.81699I$	$5.13183-2.46029I$	$14.5121+3.1935I$
$u=\ 0.628629-0.334137I$ $a=\ 1.22200+0.78546I$ $b=\ 0.49265+1.81699I$	$5.13183+2.46029I$	$14.5121-3.1935I$
$u=\ 0.579520+1.151040I$ $a=-1.84127+1.20626I$ $b=-1.42150+2.37650I$	$2.81809+13.44720I$	0
$u=\ 0.579520-1.151040I$ $a=-1.84127-1.20626I$ $b=-1.42150-2.37650I$	$2.81809-13.44720I$	0
$u=-0.539679+1.174260I$ $a=\ 0.519756+0.565749I$ $b=\ 0.568295+1.209960I$	$-3.78985-8.29502I$	0
$u=-0.539679-1.174260I$ $a=\ 0.519756-0.565749I$ $b=\ 0.568295-1.209960I$	$-3.78985+8.29502I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.588027+1.163950I$ $a=\ 1.82276+1.12851I$ $b=\ 1.50080+2.40647I$	$0.9078-19.6213I$	0
$u=-0.588027-1.163950I$ $a=\ 1.82276-1.12851I$ $b=\ 1.50080-2.40647I$	$0.9078+19.6213I$	0
$u=\ 0.557247+1.181640I$ $a=\ 0.792973-0.315005I$ $b=\ 0.704654-0.506911I$	$-2.62882+5.45005I$	0
$u=\ 0.557247-1.181640I$ $a=\ 0.792973+0.315005I$ $b=\ 0.704654+0.506911I$	$-2.62882-5.45005I$	0
$u=-0.435170+1.232080I$ $a=-0.1230310-0.0430721I$ $b=-0.042932+0.484585I$	$-4.41309-8.15300I$	0
$u=-0.435170-1.232080I$ $a=-0.1230310+0.0430721I$ $b=-0.042932-0.484585I$	$-4.41309+8.15300I$	0
$u=\ 0.567332+0.394477I$ $a=\ 1.019630+0.074384I$ $b=\ 0.363102-0.269838I$	$1.049830+0.546340I$	$8.89907-4.13660I$
$u=\ 0.567332-0.394477I$ $a=\ 1.019630-0.074384I$ $b=\ 0.363102+0.269838I$	$1.049830-0.546340I$	$8.89907+4.13660I$
$u=\ 0.631252+1.156750I$ $a=\ 1.223300-0.130066I$ $b=\ 1.36556-0.88130I$	$-0.97757+10.10480I$	0
$u=\ 0.631252-1.156750I$ $a=\ 1.223300+0.130066I$ $b=\ 1.36556+0.88130I$	$-0.97757-10.10480I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.524327+0.417163I$ $a=-0.767776-0.494553I$ $b=-0.45482-1.90743I$	$3.51278-4.24004I$	$10.95131+5.69177I$
$u=-0.524327-0.417163I$ $a=-0.767776+0.494553I$ $b=-0.45482+1.90743I$	$3.51278+4.24004I$	$10.95131-5.69177I$
$u=\ \ 0.550711+0.376242I$ $a=-0.60192-1.85435I$ $b=-1.25214+0.79998I$	$4.68590+0.06128I$	$11.69405+1.52199I$
$u=\ \ 0.550711-0.376242I$ $a=-0.60192+1.85435I$ $b=-1.25214-0.79998I$	$4.68590-0.06128I$	$11.69405-1.52199I$
$u=\ \ 0.644120+0.158741I$ $a=-1.73023+0.65345I$ $b=\ \ 0.062149+1.058440I$	$-3.99564-1.31752I$	$-0.467328+0.682592I$
$u=\ \ 0.644120-0.158741I$ $a=-1.73023-0.65345I$ $b=\ \ 0.062149-1.058440I$	$-3.99564+1.31752I$	$-0.467328-0.682592I$
$u=\ \ 0.566261+0.341356I$ $a=-2.17889-0.76525I$ $b=-1.276800-0.452358I$	$3.27891-5.20337I$	$9.05791+8.92202I$
$u=\ \ 0.566261-0.341356I$ $a=-2.17889+0.76525I$ $b=-1.276800+0.452358I$	$3.27891+5.20337I$	$9.05791-8.92202I$
$u=-0.529988+0.369897I$ $a=-2.77730-1.24477I$ $b=-0.121672-0.729596I$	$4.70950+1.00343I$	$11.45787-2.33178I$
$u=-0.529988-0.369897I$ $a=-2.77730+1.24477I$ $b=-0.121672+0.729596I$	$4.70950-1.00343I$	$11.45787+2.33178I$

II. $I_2^u =$
$\langle u^{27}+11u^{25}+\cdots+b+10u,\ 5u^{27}+37u^{25}+\cdots+a+13u,\ u^{28}+7u^{26}+\cdots+5u^2+1\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -5u^{27} - 37u^{25} + \cdots - 54u^3 - 13u \\ -u^{27} - 11u^{25} + \cdots - 36u^3 - 10u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 4u^{27} + 5u^{26} + \cdots + u + 3 \\ 2u^{27} + 3u^{26} + \cdots + 5u + 5 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 6u^{27} - u^{26} + \cdots + 5u - 7 \\ 4u^{27} + u^{26} + \cdots + 6u - 4 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^3 \\ u^3 + u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -2u^{27} - 16u^{25} + \cdots - 24u^3 - 6u \\ u^{27} + 3u^{25} + \cdots - 19u^3 - 6u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -2u^{27} - 17u^{25} + \cdots - 30u^3 - 8u \\ -4u^{25} - 25u^{23} + \cdots - 26u^3 - 7u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 7u^{27} + 44u^{25} + \cdots + 8u + 1 \\ 7u^{27} - u^{26} + \cdots - u^2 + 12u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^{27} - 8u^{26} + 56u^{25} - 48u^{24} + 199u^{23} - 160u^{22} + 448u^{21} - 345u^{20} + 699u^{19} - 548u^{18} + 809u^{17} - 678u^{16} + 768u^{15} - 716u^{14} + 718u^{13} - 661u^{12} + 695u^{11} - 535u^{10} + 617u^9 - 351u^8 + 417u^7 - 196u^6 + 218u^5 - 92u^4 + 77u^3 - 40u^2 + 21u$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{28} - 13u^{27} + \cdots - 13u + 1$
c_2	$u^{28} - u^{27} + \cdots - u + 1$
c_3	$u^{28} - 5u^{26} + \cdots - 3u + 2$
c_4	$u^{28} + 7u^{26} + \cdots + 5u^2 + 1$
c_5	$u^{28} + 2u^{26} + \cdots - u^2 + 1$
c_6	$u^{28} + u^{27} + \cdots + u + 1$
c_7	$u^{28} - 2u^{27} + \cdots - 9u + 2$
c_8	$u^{28} - 14u^{27} + \cdots - 10u + 1$
c_9	$u^{28} + 7u^{26} + \cdots + 5u^2 + 1$
c_{10}	$u^{28} + 2u^{27} + \cdots - 4u + 1$
c_{11}	$u^{28} + 2u^{27} + \cdots + 9u + 2$
c_{12}	$u^{28} - u^{26} + \cdots + 2u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{28} + 17y^{27} + \cdots + 9y + 1$
c_2, c_6	$y^{28} + 13y^{27} + \cdots + 13y + 1$
c_3	$y^{28} - 10y^{27} + \cdots + 19y + 4$
c_4, c_9	$y^{28} + 14y^{27} + \cdots + 10y + 1$
c_5	$y^{28} + 4y^{27} + \cdots - 2y + 1$
c_7, c_{11}	$y^{28} - 30y^{27} + \cdots - 81y + 4$
c_8	$y^{28} + 2y^{27} + \cdots + 14y + 1$
c_{10}	$y^{28} - 6y^{27} + \cdots - 4y + 1$
c_{12}	$y^{28} - 2y^{27} + \cdots + 4y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.246356+0.992130I$ $a=-0.197522+0.969064I$ $b=-0.746827-0.175524I$	$-4.52501-0.87421I$	$-8.56542+0.29180I$
$u=-0.246356-0.992130I$ $a=-0.197522-0.969064I$ $b=-0.746827+0.175524I$	$-4.52501+0.87421I$	$-8.56542-0.29180I$
$u=-0.864207+0.425314I$ $a=\ \ 0.428824+0.413511I$ $b=-0.309350+0.656983I$	$0.445438+0.785261I$	$1.99103-6.10447I$
$u=-0.864207-0.425314I$ $a=\ \ 0.428824-0.413511I$ $b=-0.309350-0.656983I$	$0.445438-0.785261I$	$1.99103+6.10447I$
$u=\ \ 0.923717+0.264773I$ $a=-0.523436+0.318504I$ $b=\ \ 0.078087+0.440572I$	$-0.61804-3.74943I$	$4.42797+12.08009I$
$u=\ \ 0.923717-0.264773I$ $a=-0.523436-0.318504I$ $b=\ \ 0.078087-0.440572I$	$-0.61804+3.74943I$	$4.42797-12.08009I$
$u=-0.416986+1.029260I$ $a=\ \ 2.06937+1.93429I$ $b=\ \ 1.21889+2.46136I$	$0.90891+1.92617I$	$5.46647+0.15507I$
$u=-0.416986-1.029260I$ $a=\ \ 2.06937-1.93429I$ $b=\ \ 1.21889-2.46136I$	$0.90891-1.92617I$	$5.46647-0.15507I$
$u=\ \ 0.456663+1.018340I$ $a=-1.84400+1.16970I$ $b=-1.64937+2.49156I$	$2.67136+3.59920I$	$7.09940-4.36419I$
$u=\ \ 0.456663-1.018340I$ $a=-1.84400-1.16970I$ $b=-1.64937-2.49156I$	$2.67136-3.59920I$	$7.09940+4.36419I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.489765 + 1.030170I$ $a = -0.416119 + 0.278603I$ $b = -1.18589 + 1.19313I$	$2.92343 + 2.60230I$	$7.01890 - 2.95448I$
$u = 0.489765 - 1.030170I$ $a = -0.416119 - 0.278603I$ $b = -1.18589 - 1.19313I$	$2.92343 - 2.60230I$	$7.01890 + 2.95448I$
$u = -0.520699 + 1.058000I$ $a = -1.106450 - 0.151704I$ $b = -0.212517 - 0.139801I$	$1.69646 - 8.40594I$	$5.71938 + 7.38263I$
$u = -0.520699 - 1.058000I$ $a = -1.106450 + 0.151704I$ $b = -0.212517 + 0.139801I$	$1.69646 + 8.40594I$	$5.71938 - 7.38263I$
$u = 0.224911 + 1.184700I$ $a = -0.324907 + 0.067025I$ $b = -0.100430 - 0.614349I$	$-5.74281 - 0.38088I$	$-3.97959 + 2.61173I$
$u = 0.224911 - 1.184700I$ $a = -0.324907 - 0.067025I$ $b = -0.100430 + 0.614349I$	$-5.74281 + 0.38088I$	$-3.97959 - 2.61173I$
$u = -0.576647 + 0.515336I$ $a = -0.063705 - 0.170290I$ $b = -0.344606 + 0.835452I$	$3.39068 + 3.99126I$	$8.30649 - 2.20399I$
$u = -0.576647 - 0.515336I$ $a = -0.063705 + 0.170290I$ $b = -0.344606 - 0.835452I$	$3.39068 - 3.99126I$	$8.30649 + 2.20399I$
$u = 0.474600 + 0.580912I$ $a = 0.76177 - 1.35268I$ $b = 0.186589 - 0.083242I$	$4.37871 + 1.42891I$	$9.98847 - 4.18139I$
$u = 0.474600 - 0.580912I$ $a = 0.76177 + 1.35268I$ $b = 0.186589 + 0.083242I$	$4.37871 - 1.42891I$	$9.98847 + 4.18139I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.380766 + 0.639682I$ $a = 2.05634 - 2.13605I$ $b = 0.49813 - 1.64440I$	$3.99424 + 0.03631I$	$9.17658 - 1.11949I$
$u = 0.380766 - 0.639682I$ $a = 2.05634 + 2.13605I$ $b = 0.49813 + 1.64440I$	$3.99424 - 0.03631I$	$9.17658 + 1.11949I$
$u = -0.285807 + 0.668453I$ $a = -2.47761 - 1.71909I$ $b = -1.27808 - 2.22443I$	$2.30039 - 5.11093I$	$8.86572 + 7.29347I$
$u = -0.285807 - 0.668453I$ $a = -2.47761 + 1.71909I$ $b = -1.27808 + 2.22443I$	$2.30039 + 5.11093I$	$8.86572 - 7.29347I$
$u = -0.597515 + 1.126700I$ $a = -1.151500 - 0.460817I$ $b = -0.82283 - 1.25243I$	$-1.74073 - 6.17220I$	$0.98791 + 5.18891I$
$u = -0.597515 - 1.126700I$ $a = -1.151500 + 0.460817I$ $b = -0.82283 + 1.25243I$	$-1.74073 + 6.17220I$	$0.98791 - 5.18891I$
$u = 0.557794 + 1.188720I$ $a = 0.788938 - 0.752916I$ $b = 0.66820 - 1.34798I$	$-3.50329 + 9.08102I$	$2.99669 - 10.86058I$
$u = 0.557794 - 1.188720I$ $a = 0.788938 + 0.752916I$ $b = 0.66820 + 1.34798I$	$-3.50329 - 9.08102I$	$2.99669 + 10.86058I$

III. $I_3^u = \langle u^2 + b,\ u^2 + a - 1,\ u^9 + u^7 + u^5 + u - 1 \rangle$

(i) Arc colorings

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

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

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

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

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

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

$$a_6 = \begin{pmatrix} -u^8 - u^6 - u^4 + 1 \\ -u^8 - 2u^6 - 2u^4 - 2u^2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -u^6 - u^4 + 1 \\ -u^6 - 2u^4 - u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^6 - u^4 - 2u^2 + u + 1 \\ u^8 - 2u^2 + u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -u^4 + u^3 + u^2 - 1 \\ u^6 + u^3 + u^2 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^9+2u^8+7u^7+10u^6+15u^5+18u^4+14u^3+8u^2+u-1$
c_2, c_6, c_8	$u^9+2u^8+3u^7+2u^6+3u^5+2u^4+2u^3+u-1$
c_3	$u^9+u^7-3u^6+3u^5-2u^4+2u^3+5u^2-3u-5$
c_4, c_9, c_{10}	$u^9+u^7+u^5+u-1$
c_5	$u^9+3u^7-4u^6-3u^5-4u^4+6u^3+2u^2+u-3$
c_7, c_{11}	$(u-1)^9$
c_{12}	$u^9-2u^8+7u^7-10u^6+15u^5-18u^4+14u^3-8u^2+u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^9 + 10y^8 + 39y^7 + 66y^6 + 31y^5 - 46y^4 - 42y^3 + 17y - 1$
c_2, c_6, c_8	$y^9 + 2y^8 + 7y^7 + 10y^6 + 15y^5 + 18y^4 + 14y^3 + 8y^2 + y - 1$
c_3	$y^9 + 2y^8 + 7y^7 + y^6 - 5y^5 + 32y^4 - 24y^3 - 57y^2 + 59y - 25$
c_4, c_9, c_{10}	$y^9 + 2y^8 + 3y^7 + 2y^6 + 3y^5 + 2y^4 + 2y^3 + y - 1$
c_5	$y^9 + 6y^8 + 3y^7 - 22y^6 + 15y^5 - 30y^4 + 22y^3 - 16y^2 + 13y - 9$
c_7, c_{11}	$(y-1)^9$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.871677+0.460936I$ $a=\ \ 0.452641+0.803575I$ $b=-0.547359+0.803575I$	1.64493	6.00000
$u=-0.871677-0.460936I$ $a=\ \ 0.452641-0.803575I$ $b=-0.547359-0.803575I$	1.64493	6.00000
$u=\ \ 0.678786+0.656288I$ $a=\ \ 0.969964-0.890958I$ $b=-0.030036-0.890958I$	1.64493	6.00000
$u=\ \ 0.678786-0.656288I$ $a=\ \ 0.969964+0.890958I$ $b=-0.030036+0.890958I$	1.64493	6.00000
$u=\ \ 0.345109+1.036330I$ $a=\ \ 1.95487-0.71529I$ $b=\ \ 0.954870-0.715290I$	1.64493	6.00000
$u=\ \ 0.345109-1.036330I$ $a=\ \ 1.95487+0.71529I$ $b=\ \ 0.954870+0.715290I$	1.64493	6.00000
$u=-0.503510+1.059650I$ $a=\ \ 1.86934+1.06709I$ $b=\ \ 0.869337+1.067090I$	1.64493	6.00000
$u=-0.503510-1.059650I$ $a=\ \ 1.86934-1.06709I$ $b=\ \ 0.869337-1.067090I$	1.64493	6.00000
$u=\ \ 0.702584$ $a=\ \ 0.506375$ $b=-0.493625$	1.64493	6.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^9+2u^8+7u^7+10u^6+15u^5+18u^4+14u^3+8u^2+u-1)$ $\cdot(u^{28}-13u^{27}+\cdots-13u+1)(u^{140}+58u^{139}+\cdots+876101u+17161)$
c_2	$(u^9+2u^8+\cdots+u-1)(u^{28}-u^{27}+\cdots-u+1)$ $\cdot(u^{140}-2u^{139}+\cdots+17u+131)$
c_3	$(u^9+u^7-3u^6+3u^5-2u^4+2u^3+5u^2-3u-5)$ $\cdot(u^{28}-5u^{26}+\cdots-3u+2)(u^{140}-u^{139}+\cdots-2.42442\times10^7u+5702444)$
c_4	$(u^9+u^7+u^5+u-1)(u^{28}+7u^{26}+\cdots+5u^2+1)$ $\cdot(u^{140}+u^{139}+\cdots+14u+11)$
c_5	$(u^9+3u^7-4u^6-3u^5-4u^4+6u^3+2u^2+u-3)$ $\cdot(u^{28}+2u^{26}+\cdots-u^2+1)(u^{140}+u^{139}+\cdots-143354u+167897)$
c_6	$(u^9+2u^8+\cdots+u-1)(u^{28}+u^{27}+\cdots+u+1)$ $\cdot(u^{140}-2u^{139}+\cdots+17u+131)$
c_7	$((u-1)^9)(u^{28}-2u^{27}+\cdots-9u+2)$ $\cdot(u^{140}+10u^{139}+\cdots+49344u+2992)$
c_8	$(u^9+2u^8+3u^7+2u^6+3u^5+2u^4+2u^3+u-1)$ $\cdot(u^{28}-14u^{27}+\cdots-10u+1)(u^{140}+71u^{139}+\cdots+1322u+121)$
c_9	$(u^9+u^7+u^5+u-1)(u^{28}+7u^{26}+\cdots+5u^2+1)$ $\cdot(u^{140}+u^{139}+\cdots+14u+11)$
c_{10}	$(u^9+u^7+u^5+u-1)(u^{28}+2u^{27}+\cdots-4u+1)$ $\cdot(u^{140}-23u^{139}+\cdots+640u+89)$
c_{11}	$((u-1)^9)(u^{28}+2u^{27}+\cdots+9u+2)$ $\cdot(u^{140}+10u^{139}+\cdots+49344u+2992)$
c_{12}	$(u^9-2u^8+7u^7-10u^6+15u^5-18u^4+14u^3-8u^2+u+1)$ $\cdot(u^{28}-u^{26}+\cdots+2u^2+1)(u^{140}-u^{139}+\cdots+26u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^9+10y^8+39y^7+66y^6+31y^5-46y^4-42y^3+17y-1)$ $\cdot(y^{28}+17y^{27}+\cdots+9y+1)$ $\cdot(y^{140}+62y^{139}+\cdots-8770457803y+294499921)$
c_2, c_6	$(y^9+2y^8+7y^7+10y^6+15y^5+18y^4+14y^3+8y^2+y-1)$ $\cdot(y^{28}+13y^{27}+\cdots+13y+1)(y^{140}+58y^{139}+\cdots+876101y+17161)$
c_3	$(y^9+2y^8+7y^7+y^6-5y^5+32y^4-24y^3-57y^2+59y-25)$ $\cdot(y^{28}-10y^{27}+\cdots+19y+4)$ $\cdot(y^{140}-57y^{139}+\cdots-327195805998920y+32517867573136)$
c_4, c_9	$(y^9+2y^8+3y^7+2y^6+3y^5+2y^4+2y^3+y-1)$ $\cdot(y^{28}+14y^{27}+\cdots+10y+1)(y^{140}+71y^{139}+\cdots+1322y+121)$
c_5	$(y^9+6y^8+3y^7-22y^6+15y^5-30y^4+22y^3-16y^2+13y-9)$ $\cdot(y^{28}+4y^{27}+\cdots-2y+1)$ $\cdot(y^{140}-39y^{139}+\cdots-427794952430y+28189402609)$
c_7, c_{11}	$((y-1)^9)(y^{28}-30y^{27}+\cdots-81y+4)$ $\cdot(y^{140}-102y^{139}+\cdots-552000640y+8952064)$
c_8	$(y^9+2y^8+7y^7+10y^6+15y^5+18y^4+14y^3+8y^2+y-1)$ $\cdot(y^{28}+2y^{27}+\cdots+14y+1)(y^{140}+7y^{139}+\cdots+781458y+14641)$
c_{10}	$(y^9+2y^8+3y^7+2y^6+3y^5+2y^4+2y^3+y-1)$ $\cdot(y^{28}-6y^{27}+\cdots-4y+1)(y^{140}-13y^{139}+\cdots-780196y+7921)$
c_{12}	$(y^9+10y^8+39y^7+66y^6+31y^5-46y^4-42y^3+17y-1)$ $\cdot(y^{28}-2y^{27}+\cdots+4y+1)(y^{140}-13y^{139}+\cdots+104y+1)$