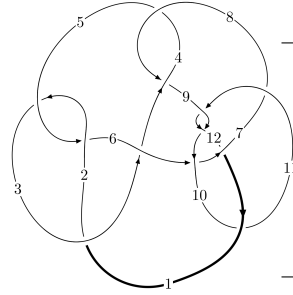
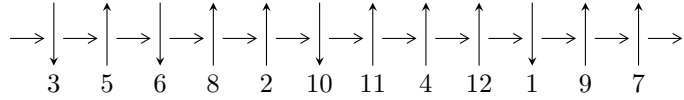


12a₀₀₀₇ (K12a₀₀₀₇)



A knot diagram¹

Linearized knot diagram



Solving Sequence

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

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle 3.08638 \times 10^{606} u^{134} - 6.53711 \times 10^{606} u^{133} + \dots + 2.81019 \times 10^{607} b - 1.77254 \times 10^{608}, \\ 1.92887 \times 10^{608} u^{134} + 5.80661 \times 10^{608} u^{133} + \dots + 1.40510 \times 10^{607} a + 7.83298 \times 10^{608}, \\ u^{135} + 3u^{134} + \dots + 23u - 1 \rangle$$

$$I_2^u = \langle -u^4 b - u^3 b + 2u^4 + u^2 b + 4u^3 + b^2 - b - u + 2, a, u^5 + u^4 - 2u^3 - u^2 + u - 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 145 representations.

¹The 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>).

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

$$\mathbf{I. } I_1^u = \langle 3.09 \times 10^{606} u^{134} - 6.54 \times 10^{606} u^{133} + \dots + 2.81 \times 10^{607} b - 1.77 \times 10^{608}, 1.93 \times 10^{608} u^{134} + 5.81 \times 10^{608} u^{133} + \dots + 1.41 \times 10^{607} a + 7.83 \times 10^{608}, u^{135} + 3u^{134} + \dots + 23u - 1 \rangle$$

(i) Arc colorings

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

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

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

$$a_4 = \begin{pmatrix} -13.7277u^{134} - 41.3254u^{133} + \dots + 1183.14u - 55.7469 \\ -0.109828u^{134} + 0.232621u^{133} + \dots - 105.020u + 6.30755 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 10.5104u^{134} + 28.1213u^{133} + \dots - 1273.21u + 77.3616 \\ 5.06292u^{134} + 13.4726u^{133} + \dots + 44.0782u - 4.59033 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -13.0648u^{134} - 34.5807u^{133} + \dots + 1060.19u - 61.4604 \\ -3.59206u^{134} - 9.85582u^{133} + \dots + 61.8222u - 1.81266 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 5.44751u^{134} + 14.6486u^{133} + \dots - 1317.28u + 81.9520 \\ 5.06292u^{134} + 13.4726u^{133} + \dots + 44.0782u - 4.59033 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -5.24791u^{134} - 8.31601u^{133} + \dots - 654.297u + 37.1633 \\ 1.85841u^{134} + 4.39282u^{133} + \dots + 18.2202u - 2.17981 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 10.4058u^{134} + 26.7954u^{133} + \dots - 1291.76u + 80.7778 \\ 4.74187u^{134} + 13.2057u^{133} + \dots + 1.89833u - 3.03646 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -5.13933u^{134} - 9.01892u^{133} + \dots - 9.48553u - 6.83756 \\ -2.44953u^{134} - 7.38833u^{133} + \dots + 199.596u - 10.1484 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 5.18030u^{134} + 17.5516u^{133} + \dots - 757.386u + 41.6323 \\ -0.304850u^{134} - 2.35761u^{133} + \dots + 245.506u - 12.4320 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-9.36282u^{134} - 20.3123u^{133} + \dots - 666.463u + 49.0376$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{135} + 64u^{134} + \dots + 158u - 1$
c_2, c_5	$u^{135} + 6u^{134} + \dots - 2u - 1$
c_3	$u^{135} - 6u^{134} + \dots + 18532724u - 1174793$
c_4, c_8	$u^{135} - u^{134} + \dots + 5120u - 1024$
c_6	$u^{135} + 3u^{134} + \dots + 12401u - 47809$
c_7	$u^{135} - 3u^{134} + \dots + 17948537u - 2522669$
c_9, c_{11}	$u^{135} + 3u^{134} + \dots + 23u - 1$
c_{10}	$u^{135} - 23u^{134} + \dots + 3u - 1$
c_{12}	$u^{135} + 9u^{134} + \dots + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{135} + 20y^{134} + \dots + 22410y - 1$
c_2, c_5	$y^{135} + 64y^{134} + \dots + 158y - 1$
c_3	$y^{135} - 24y^{134} + \dots + 270394515667686y - 1380138592849$
c_4, c_8	$y^{135} + 55y^{134} + \dots - 24117248y - 1048576$
c_6	$y^{135} + 149y^{134} + \dots - 218902272299y - 2285700481$
c_7	$y^{135} + 85y^{134} + \dots + 285856654348325y - 6363858883561$
c_9, c_{11}	$y^{135} - 95y^{134} + \dots - 23y - 1$
c_{10}	$y^{135} + 9y^{134} + \dots - 23y - 1$
c_{12}	$y^{135} - 23y^{134} + \dots + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.568524 + 0.805822I$	$-7.52069 - 3.51563I$	0
$a = -1.186920 + 0.557168I$		
$b = -1.55948 + 0.08612I$		
$u = -0.568524 - 0.805822I$	$-7.52069 + 3.51563I$	0
$a = -1.186920 - 0.557168I$		
$b = -1.55948 - 0.08612I$		
$u = -0.907886 + 0.454916I$	$-6.41600 - 1.19724I$	0
$a = 0.68514 - 1.26035I$		
$b = 0.880008 + 0.743585I$		
$u = -0.907886 - 0.454916I$	$-6.41600 + 1.19724I$	0
$a = 0.68514 + 1.26035I$		
$b = 0.880008 - 0.743585I$		
$u = -1.007480 + 0.177190I$	$0.05421 - 4.55763I$	0
$a = 1.317070 + 0.096501I$		
$b = 0.423505 + 0.082153I$		
$u = -1.007480 - 0.177190I$	$0.05421 + 4.55763I$	0
$a = 1.317070 - 0.096501I$		
$b = 0.423505 - 0.082153I$		
$u = 1.026060 + 0.044609I$	$1.53614 + 3.00834I$	0
$a = -0.688975 + 0.420532I$		
$b = -2.76943 + 3.04188I$		
$u = 1.026060 - 0.044609I$	$1.53614 - 3.00834I$	0
$a = -0.688975 - 0.420532I$		
$b = -2.76943 - 3.04188I$		
$u = 0.116944 + 1.020390I$	$1.03911 + 2.79672I$	0
$a = 0.391000 + 0.849314I$		
$b = 0.775161 - 0.064942I$		
$u = 0.116944 - 1.020390I$	$1.03911 - 2.79672I$	0
$a = 0.391000 - 0.849314I$		
$b = 0.775161 + 0.064942I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.419714 + 0.963008I$ $a = -1.113320 + 0.500212I$ $b = -1.64463 + 0.09604I$	$-7.94598 + 4.71009I$	0
$u = -0.419714 - 0.963008I$ $a = -1.113320 - 0.500212I$ $b = -1.64463 - 0.09604I$	$-7.94598 - 4.71009I$	0
$u = 1.051520 + 0.006262I$ $a = 0.564038 + 0.595897I$ $b = 3.87487 + 1.91741I$	$2.86400 + 1.41798I$	0
$u = 1.051520 - 0.006262I$ $a = 0.564038 - 0.595897I$ $b = 3.87487 - 1.91741I$	$2.86400 - 1.41798I$	0
$u = 1.043770 + 0.152675I$ $a = -0.464877 - 0.956012I$ $b = -2.93917 - 0.27243I$	$-2.46009 + 0.50056I$	0
$u = 1.043770 - 0.152675I$ $a = -0.464877 + 0.956012I$ $b = -2.93917 + 0.27243I$	$-2.46009 - 0.50056I$	0
$u = 0.083016 + 1.051850I$ $a = -0.870439 + 0.409276I$ $b = -1.83729 - 0.09226I$	$0.83592 + 5.69951I$	0
$u = 0.083016 - 1.051850I$ $a = -0.870439 - 0.409276I$ $b = -1.83729 + 0.09226I$	$0.83592 - 5.69951I$	0
$u = -1.021600 + 0.270915I$ $a = 0.998429 - 0.892064I$ $b = 1.221320 + 0.406339I$	$-2.95130 - 3.55729I$	0
$u = -1.021600 - 0.270915I$ $a = 0.998429 + 0.892064I$ $b = 1.221320 - 0.406339I$	$-2.95130 + 3.55729I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.055660 + 0.106193I$		
$a = 1.077190 + 0.842689I$	$1.92024 - 4.49255I$	0
$b = 0.517475 + 0.017390I$		
$u = -1.055660 - 0.106193I$		
$a = 1.077190 - 0.842689I$	$1.92024 + 4.49255I$	0
$b = 0.517475 - 0.017390I$		
$u = 0.080608 + 0.921052I$		
$a = 0.873120 - 0.320604I$	$0.007085 + 0.583291I$	0
$b = 1.97968 + 0.02512I$		
$u = 0.080608 - 0.921052I$		
$a = 0.873120 + 0.320604I$	$0.007085 - 0.583291I$	0
$b = 1.97968 - 0.02512I$		
$u = -1.085860 + 0.069941I$		
$a = 0.275746 + 1.215720I$	$3.24444 - 3.62921I$	0
$b = 0.321621 - 1.157430I$		
$u = -1.085860 - 0.069941I$		
$a = 0.275746 - 1.215720I$	$3.24444 + 3.62921I$	0
$b = 0.321621 + 1.157430I$		
$u = 1.089220 + 0.056094I$		
$a = 0.086119 + 0.368937I$	$2.17840 + 2.18123I$	0
$b = 0.55341 - 6.16169I$		
$u = 1.089220 - 0.056094I$		
$a = 0.086119 - 0.368937I$	$2.17840 - 2.18123I$	0
$b = 0.55341 + 6.16169I$		
$u = 0.009853 + 1.093610I$		
$a = -0.435161 - 0.909331I$	$-1.01744 + 7.35867I$	0
$b = -0.811741 + 0.004845I$		
$u = 0.009853 - 1.093610I$		
$a = -0.435161 + 0.909331I$	$-1.01744 - 7.35867I$	0
$b = -0.811741 - 0.004845I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.416447 + 0.803539I$ $a = 1.191210 - 0.476871I$ $b = 1.59991 - 0.15322I$	$-4.35305 + 0.80319I$	0
$u = -0.416447 - 0.803539I$ $a = 1.191210 + 0.476871I$ $b = 1.59991 + 0.15322I$	$-4.35305 - 0.80319I$	0
$u = 1.040580 + 0.349191I$ $a = 0.446852 - 0.394829I$ $b = 0.190132 + 1.142410I$	$1.54023 - 0.58667I$	0
$u = 1.040580 - 0.349191I$ $a = 0.446852 + 0.394829I$ $b = 0.190132 - 1.142410I$	$1.54023 + 0.58667I$	0
$u = 0.438285 + 1.007090I$ $a = 0.454121 + 0.675347I$ $b = 0.821512 - 0.305548I$	$1.20916 + 1.59276I$	0
$u = 0.438285 - 1.007090I$ $a = 0.454121 - 0.675347I$ $b = 0.821512 + 0.305548I$	$1.20916 - 1.59276I$	0
$u = -1.097860 + 0.038828I$ $a = -0.637062 + 1.120900I$ $b = -0.771440 - 0.894856I$	$4.13066 - 2.35961I$	0
$u = -1.097860 - 0.038828I$ $a = -0.637062 - 1.120900I$ $b = -0.771440 + 0.894856I$	$4.13066 + 2.35961I$	0
$u = 1.096500 + 0.092685I$ $a = 0.573386 + 0.848744I$ $b = 3.09848 + 0.80652I$	$1.79298 + 3.12616I$	0
$u = 1.096500 - 0.092685I$ $a = 0.573386 - 0.848744I$ $b = 3.09848 - 0.80652I$	$1.79298 - 3.12616I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.111950 + 0.006804I$ $a = -1.126920 + 0.487485I$ $b = -0.423626 - 0.004236I$	$4.49122 - 0.85357I$	0
$u = -1.111950 - 0.006804I$ $a = -1.126920 - 0.487485I$ $b = -0.423626 + 0.004236I$	$4.49122 + 0.85357I$	0
$u = 0.885186 + 0.050073I$ $a = -0.740848 + 0.127427I$ $b = -0.10936 - 2.32435I$	$0.92608 + 2.64149I$	0
$u = 0.885186 - 0.050073I$ $a = -0.740848 - 0.127427I$ $b = -0.10936 + 2.32435I$	$0.92608 - 2.64149I$	0
$u = -0.118952 + 0.869942I$ $a = -0.328619 - 1.037610I$ $b = -0.719254 - 0.066072I$	$-2.45542 + 0.43451I$	0
$u = -0.118952 - 0.869942I$ $a = -0.328619 + 1.037610I$ $b = -0.719254 + 0.066072I$	$-2.45542 - 0.43451I$	0
$u = 1.125470 + 0.117732I$ $a = -0.612434 - 0.905025I$ $b = -2.86154 - 0.78542I$	$-0.46769 + 8.00362I$	0
$u = 1.125470 - 0.117732I$ $a = -0.612434 + 0.905025I$ $b = -2.86154 + 0.78542I$	$-0.46769 - 8.00362I$	0
$u = -1.040870 + 0.448369I$ $a = -0.587288 + 1.058760I$ $b = -1.02358 - 1.03227I$	$-2.40247 - 5.42914I$	0
$u = -1.040870 - 0.448369I$ $a = -0.587288 - 1.058760I$ $b = -1.02358 + 1.03227I$	$-2.40247 + 5.42914I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.15383$ $a = 0.248512$ $b = -0.617227$	2.30295	0
$u = 0.797291 + 0.240741I$ $a = 0.152484 + 1.301610I$ $b = 1.96500 - 0.41263I$	$-3.03176 + 0.85487I$	0
$u = 0.797291 - 0.240741I$ $a = 0.152484 - 1.301610I$ $b = 1.96500 + 0.41263I$	$-3.03176 - 0.85487I$	0
$u = -1.159770 + 0.238949I$ $a = -0.866476 + 0.823520I$ $b = -1.34363 - 0.63804I$	$2.64360 - 6.29046I$	0
$u = -1.159770 - 0.238949I$ $a = -0.866476 - 0.823520I$ $b = -1.34363 + 0.63804I$	$2.64360 + 6.29046I$	0
$u = -1.067580 + 0.544991I$ $a = 0.719832 - 0.975059I$ $b = 1.25728 + 0.91896I$	$-5.87319 - 10.08940I$	0
$u = -1.067580 - 0.544991I$ $a = 0.719832 + 0.975059I$ $b = 1.25728 - 0.91896I$	$-5.87319 + 10.08940I$	0
$u = -0.087955 + 1.201330I$ $a = 0.944422 - 0.493344I$ $b = 1.70851 + 0.01513I$	$-5.66349 + 5.47096I$	0
$u = -0.087955 - 1.201330I$ $a = 0.944422 + 0.493344I$ $b = 1.70851 - 0.01513I$	$-5.66349 - 5.47096I$	0
$u = -1.188910 + 0.286559I$ $a = 0.889919 - 0.773016I$ $b = 1.44145 + 0.59362I$	$0.38712 - 11.78350I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.188910 - 0.286559I$		
$a = 0.889919 + 0.773016I$	$0.38712 + 11.78350I$	0
$b = 1.44145 - 0.59362I$		
$u = 0.019858 + 1.238580I$		
$a = -0.897984 + 0.501763I$	$-0.80905 + 8.28455I$	0
$b = -1.69963 - 0.06811I$		
$u = 0.019858 - 1.238580I$		
$a = -0.897984 - 0.501763I$	$-0.80905 - 8.28455I$	0
$b = -1.69963 + 0.06811I$		
$u = 0.569961 + 1.127270I$		
$a = -0.531317 - 0.663723I$	$-0.79606 - 2.83608I$	0
$b = -0.973907 + 0.344786I$		
$u = 0.569961 - 1.127270I$		
$a = -0.531317 + 0.663723I$	$-0.79606 + 2.83608I$	0
$b = -0.973907 - 0.344786I$		
$u = 0.820697 + 0.963046I$		
$a = -0.551140 - 0.561218I$	$-1.95084 + 4.11866I$	0
$b = -1.062630 + 0.634441I$		
$u = 0.820697 - 0.963046I$		
$a = -0.551140 + 0.561218I$	$-1.95084 - 4.11866I$	0
$b = -1.062630 - 0.634441I$		
$u = 0.562883 + 0.443226I$		
$a = 0.580480 + 0.461713I$	$0.66023 + 1.44451I$	0
$b = 0.027447 - 0.872637I$		
$u = 0.562883 - 0.443226I$		
$a = 0.580480 - 0.461713I$	$0.66023 - 1.44451I$	0
$b = 0.027447 + 0.872637I$		
$u = 0.008679 + 1.294510I$		
$a = 0.901083 - 0.524151I$	$-3.15409 + 13.45310I$	0
$b = 1.67286 + 0.06156I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.008679 - 1.294510I$ $a = 0.901083 + 0.524151I$ $b = 1.67286 - 0.06156I$	$-3.15409 - 13.45310I$	0
$u = 0.621734 + 0.332061I$ $a = 0.11218 + 1.65942I$ $b = 1.52142 - 0.25068I$	$-1.58896 - 6.54144I$	0
$u = 0.621734 - 0.332061I$ $a = 0.11218 - 1.65942I$ $b = 1.52142 + 0.25068I$	$-1.58896 + 6.54144I$	0
$u = -1.259540 + 0.463280I$ $a = -0.697654 - 0.564354I$ $b = -0.284305 - 0.259378I$	$1.11874 - 5.27197I$	0
$u = -1.259540 - 0.463280I$ $a = -0.697654 + 0.564354I$ $b = -0.284305 + 0.259378I$	$1.11874 + 5.27197I$	0
$u = -1.359480 + 0.117427I$ $a = -0.490412 + 0.278971I$ $b = -0.235539 + 0.060510I$	$6.64310 - 2.61859I$	0
$u = -1.359480 - 0.117427I$ $a = -0.490412 - 0.278971I$ $b = -0.235539 - 0.060510I$	$6.64310 + 2.61859I$	0
$u = 0.582918 + 0.205812I$ $a = 0.17559 - 1.61087I$ $b = -1.40341 + 0.48169I$	$0.69426 - 1.95174I$	$0. + 5.64029I$
$u = 0.582918 - 0.205812I$ $a = 0.17559 + 1.61087I$ $b = -1.40341 - 0.48169I$	$0.69426 + 1.95174I$	$0. - 5.64029I$
$u = -1.327410 + 0.462550I$ $a = -0.578823 + 0.588443I$ $b = -1.97389 - 1.48784I$	$4.32893 - 5.56092I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.327410 - 0.462550I$ $a = -0.578823 - 0.588443I$ $b = -1.97389 + 1.48784I$	$4.32893 + 5.56092I$	0
$u = -1.35402 + 0.47664I$ $a = 0.553167 + 0.610604I$ $b = 0.226182 + 0.291609I$	$5.57738 - 8.05927I$	0
$u = -1.35402 - 0.47664I$ $a = 0.553167 - 0.610604I$ $b = 0.226182 - 0.291609I$	$5.57738 + 8.05927I$	0
$u = -1.35698 + 0.49400I$ $a = 0.637050 - 0.555933I$ $b = 2.08576 + 1.32571I$	$5.30424 - 11.13160I$	0
$u = -1.35698 - 0.49400I$ $a = 0.637050 + 0.555933I$ $b = 2.08576 - 1.32571I$	$5.30424 + 11.13160I$	0
$u = -1.35082 + 0.52344I$ $a = -0.575172 - 0.675690I$ $b = -0.242093 - 0.319687I$	$3.24218 - 13.03280I$	0
$u = -1.35082 - 0.52344I$ $a = -0.575172 + 0.675690I$ $b = -0.242093 + 0.319687I$	$3.24218 + 13.03280I$	0
$u = -1.45560 + 0.14753I$ $a = 0.240455 - 0.374128I$ $b = 0.147199 - 0.138505I$	$5.74020 - 6.92480I$	0
$u = -1.45560 - 0.14753I$ $a = 0.240455 + 0.374128I$ $b = 0.147199 + 0.138505I$	$5.74020 + 6.92480I$	0
$u = -1.42106 + 0.35399I$ $a = 0.356363 + 0.458246I$ $b = 0.130191 + 0.227548I$	$6.97880 - 6.19911I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.42106 - 0.35399I$ $a = 0.356363 - 0.458246I$ $b = 0.130191 - 0.227548I$	$6.97880 + 6.19911I$	0
$u = -1.34939 + 0.58154I$ $a = -0.749894 + 0.593839I$ $b = -1.99176 - 1.03849I$	$-1.66694 - 11.66010I$	0
$u = -1.34939 - 0.58154I$ $a = -0.749894 - 0.593839I$ $b = -1.99176 + 1.03849I$	$-1.66694 + 11.66010I$	0
$u = 1.40899 + 0.42638I$ $a = 0.526401 + 0.277205I$ $b = 2.40117 - 1.31157I$	$3.69009 - 1.55088I$	0
$u = 1.40899 - 0.42638I$ $a = 0.526401 - 0.277205I$ $b = 2.40117 + 1.31157I$	$3.69009 + 1.55088I$	0
$u = 1.34945 + 0.59985I$ $a = 0.353348 - 0.565384I$ $b = 0.433960 + 0.600493I$	$3.37680 + 5.10317I$	0
$u = 1.34945 - 0.59985I$ $a = 0.353348 + 0.565384I$ $b = 0.433960 - 0.600493I$	$3.37680 - 5.10317I$	0
$u = -1.48017 + 0.29167I$ $a = -0.162655 - 0.448875I$ $b = -0.037753 - 0.216915I$	$5.89517 - 1.74663I$	0
$u = -1.48017 - 0.29167I$ $a = -0.162655 + 0.448875I$ $b = -0.037753 + 0.216915I$	$5.89517 + 1.74663I$	0
$u = -1.39873 + 0.56584I$ $a = 0.746409 - 0.529605I$ $b = 2.14095 + 1.03697I$	$3.6652 - 14.5289I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.39873 - 0.56584I$ $a = 0.746409 + 0.529605I$ $b = 2.14095 - 1.03697I$	$3.6652 + 14.5289I$	0
$u = 1.28440 + 0.79512I$ $a = 0.605252 + 0.419898I$ $b = 1.66223 - 0.91218I$	$-0.61654 + 3.16359I$	0
$u = 1.28440 - 0.79512I$ $a = 0.605252 - 0.419898I$ $b = 1.66223 + 0.91218I$	$-0.61654 - 3.16359I$	0
$u = 1.41568 + 0.54696I$ $a = -0.568503 - 0.316970I$ $b = -2.13096 + 1.12927I$	$4.93681 + 3.31408I$	0
$u = 1.41568 - 0.54696I$ $a = -0.568503 + 0.316970I$ $b = -2.13096 - 1.12927I$	$4.93681 - 3.31408I$	0
$u = 1.43165 + 0.51650I$ $a = -0.302053 + 0.564295I$ $b = -0.336585 - 0.543926I$	$4.99306 + 0.38975I$	0
$u = 1.43165 - 0.51650I$ $a = -0.302053 - 0.564295I$ $b = -0.336585 + 0.543926I$	$4.99306 - 0.38975I$	0
$u = -0.003009 + 0.471213I$ $a = -2.50005 + 1.33228I$ $b = -0.702198 + 0.575510I$	$-3.04734 + 8.79533I$	$0.41361 - 4.49618I$
$u = -0.003009 - 0.471213I$ $a = -2.50005 - 1.33228I$ $b = -0.702198 - 0.575510I$	$-3.04734 - 8.79533I$	$0.41361 + 4.49618I$
$u = -1.41292 + 0.58655I$ $a = -0.775492 + 0.520952I$ $b = -2.15151 - 0.96722I$	$1.3407 - 19.9336I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.41292 - 0.58655I$ $a = -0.775492 - 0.520952I$ $b = -2.15151 + 0.96722I$	$1.3407 + 19.9336I$	0
$u = -0.257301 + 0.376376I$ $a = 0.32758 + 1.82950I$ $b = 0.684832 + 0.214295I$	$-1.81324 + 2.17307I$	$-3.13989 - 3.52849I$
$u = -0.257301 - 0.376376I$ $a = 0.32758 - 1.82950I$ $b = 0.684832 - 0.214295I$	$-1.81324 - 2.17307I$	$-3.13989 + 3.52849I$
$u = -0.175057 + 0.371624I$ $a = -2.29363 + 2.13432I$ $b = -0.545397 + 0.356266I$	$-5.15906 + 0.74614I$	$-3.05371 + 1.33058I$
$u = -0.175057 - 0.371624I$ $a = -2.29363 - 2.13432I$ $b = -0.545397 - 0.356266I$	$-5.15906 - 0.74614I$	$-3.05371 - 1.33058I$
$u = 1.43520 + 0.74129I$ $a = -0.628332 - 0.367621I$ $b = -1.89441 + 0.86459I$	$3.94029 + 5.57514I$	0
$u = 1.43520 - 0.74129I$ $a = -0.628332 + 0.367621I$ $b = -1.89441 - 0.86459I$	$3.94029 - 5.57514I$	0
$u = -0.001674 + 0.384516I$ $a = 2.85237 - 1.44910I$ $b = 0.585903 - 0.596946I$	$-0.60252 + 3.76215I$	$3.40046 - 1.16553I$
$u = -0.001674 - 0.384516I$ $a = 2.85237 + 1.44910I$ $b = 0.585903 + 0.596946I$	$-0.60252 - 3.76215I$	$3.40046 + 1.16553I$
$u = 1.64516 + 0.19357I$ $a = 0.106126 - 0.578132I$ $b = 0.099952 + 0.384211I$	$0.509155 + 0.687850I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.64516 - 0.19357I$ $a = 0.106126 + 0.578132I$ $b = 0.099952 - 0.384211I$	$0.509155 - 0.687850I$	0
$u = 1.46077 + 0.80389I$ $a = 0.650409 + 0.377792I$ $b = 1.86542 - 0.77769I$	$1.76178 + 10.59480I$	0
$u = 1.46077 - 0.80389I$ $a = 0.650409 - 0.377792I$ $b = 1.86542 + 0.77769I$	$1.76178 - 10.59480I$	0
$u = 1.61720 + 0.40942I$ $a = -0.211461 + 0.605812I$ $b = -0.236214 - 0.406084I$	$4.52600 - 1.48756I$	0
$u = 1.61720 - 0.40942I$ $a = -0.211461 - 0.605812I$ $b = -0.236214 + 0.406084I$	$4.52600 + 1.48756I$	0
$u = 1.70202 + 0.39932I$ $a = 0.190374 - 0.638275I$ $b = 0.225506 + 0.350588I$	$2.46679 - 6.31017I$	0
$u = 1.70202 - 0.39932I$ $a = 0.190374 + 0.638275I$ $b = 0.225506 - 0.350588I$	$2.46679 + 6.31017I$	0
$u = 0.178980 + 0.082547I$ $a = 1.96557 - 3.69372I$ $b = -0.808183 + 0.272252I$	$1.28270 - 0.95263I$	$6.92461 + 3.27400I$
$u = 0.178980 - 0.082547I$ $a = 1.96557 + 3.69372I$ $b = -0.808183 - 0.272252I$	$1.28270 + 0.95263I$	$6.92461 - 3.27400I$
$u = 0.140096 + 0.121247I$ $a = 0.18043 + 3.54028I$ $b = 0.388156 - 1.202380I$	$0.35725 + 2.80293I$	$2.42705 + 0.32410I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.140096 - 0.121247I$		
$a = 0.18043 - 3.54028I$	$0.35725 - 2.80293I$	$2.42705 - 0.32410I$
$b = 0.388156 + 1.202380I$		
$u = 0.124506 + 0.102205I$		
$a = 4.96081 + 1.61254I$	$1.17674 + 1.83944I$	$5.03946 - 3.87625I$
$b = 0.151616 - 0.904151I$		
$u = 0.124506 - 0.102205I$		
$a = 4.96081 - 1.61254I$	$1.17674 - 1.83944I$	$5.03946 + 3.87625I$
$b = 0.151616 + 0.904151I$		
$u = -0.021895 + 0.151278I$		
$a = 2.88815 + 5.48507I$	$-0.44956 + 3.21138I$	$2.31979 - 2.55499I$
$b = 0.753080 - 0.067463I$		
$u = -0.021895 - 0.151278I$		
$a = 2.88815 - 5.48507I$	$-0.44956 - 3.21138I$	$2.31979 + 2.55499I$
$b = 0.753080 + 0.067463I$		

$$\text{II. } I_2^u = \langle -u^4b + 2u^4 + \dots - b + 2, a, u^5 + u^4 - 2u^3 - u^2 + u - 1 \rangle$$

(i) Arc colorings

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

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

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

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

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

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

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

$$a_7 = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^4 + u^2 + 1 \\ u^4 - 2u^2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} u^4b - u^3b - 2u^2b + 3bu - b \\ -bu + 2b \end{pmatrix}$$

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

(ii) Obstruction class = 1

(iii) Cusp Shapes = $-5u^3b + u^4 - u^2b + 7u^3 + 6bu + 2u^2 + 2b - 9u + 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.21774$ $a = 0$ $b = 1.76091 + 3.04998I$	$2.40108 - 2.02988I$	$9.72304 - 3.67600I$
$u = 1.21774$ $a = 0$ $b = 1.76091 - 3.04998I$	$2.40108 + 2.02988I$	$9.72304 + 3.67600I$
$u = 0.309916 + 0.549911I$ $a = 0$ $b = 0.864485 + 0.518603I$	$0.329100 - 0.499304I$	$3.01153 + 0.88894I$
$u = 0.309916 + 0.549911I$ $a = 0$ $b = 0.016881 - 1.007970I$	$0.32910 + 3.56046I$	$3.07628 - 9.77765I$
$u = 0.309916 - 0.549911I$ $a = 0$ $b = 0.864485 - 0.518603I$	$0.329100 + 0.499304I$	$3.01153 - 0.88894I$
$u = 0.309916 - 0.549911I$ $a = 0$ $b = 0.016881 + 1.007970I$	$0.32910 - 3.56046I$	$3.07628 + 9.77765I$
$u = -1.41878 + 0.21917I$ $a = 0$ $b = 0.369732 - 0.377747I$	$5.87256 - 6.43072I$	$6.63163 + 0.01393I$
$u = -1.41878 + 0.21917I$ $a = 0$ $b = -0.512005 - 0.131324I$	$5.87256 - 2.37095I$	$3.55752 + 5.27247I$
$u = -1.41878 - 0.21917I$ $a = 0$ $b = 0.369732 + 0.377747I$	$5.87256 + 6.43072I$	$6.63163 - 0.01393I$
$u = -1.41878 - 0.21917I$ $a = 0$ $b = -0.512005 + 0.131324I$	$5.87256 + 2.37095I$	$3.55752 - 5.27247I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2 - u + 1)^5)(u^{135} + 64u^{134} + \dots + 158u - 1)$
c_2	$((u^2 + u + 1)^5)(u^{135} + 6u^{134} + \dots - 2u - 1)$
c_3	$((u^2 - u + 1)^5)(u^{135} - 6u^{134} + \dots + 1.85327 \times 10^7 u - 1174793)$
c_4, c_8	$u^{10}(u^{135} - u^{134} + \dots + 5120u - 1024)$
c_5	$((u^2 - u + 1)^5)(u^{135} + 6u^{134} + \dots - 2u - 1)$
c_6	$((u^5 + u^4 + 2u^3 + u^2 + u + 1)^2)(u^{135} + 3u^{134} + \dots + 12401u - 47809)$
c_7	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2$ $\cdot (u^{135} - 3u^{134} + \dots + 17948537u - 2522669)$
c_9	$((u^5 - u^4 - 2u^3 + u^2 + u + 1)^2)(u^{135} + 3u^{134} + \dots + 23u - 1)$
c_{10}	$((u^5 + u^4 + 2u^3 + u^2 + u + 1)^2)(u^{135} - 23u^{134} + \dots + 3u - 1)$
c_{11}	$((u^5 + u^4 - 2u^3 - u^2 + u - 1)^2)(u^{135} + 3u^{134} + \dots + 23u - 1)$
c_{12}	$((u^5 - 3u^4 + 4u^3 - u^2 - u + 1)^2)(u^{135} + 9u^{134} + \dots + 3u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2 + y + 1)^5)(y^{135} + 20y^{134} + \dots + 22410y - 1)$
c_2, c_5	$((y^2 + y + 1)^5)(y^{135} + 64y^{134} + \dots + 158y - 1)$
c_3	$(y^2 + y + 1)^5$ $\cdot (y^{135} - 24y^{134} + \dots + 270394515667686y - 1380138592849)$
c_4, c_8	$y^{10}(y^{135} + 55y^{134} + \dots - 2.41172 \times 10^7 y - 1048576)$
c_6	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$ $\cdot (y^{135} + 149y^{134} + \dots - 218902272299y - 2285700481)$
c_7	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$ $\cdot (y^{135} + 85y^{134} + \dots + 285856654348325y - 6363858883561)$
c_9, c_{11}	$((y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2)(y^{135} - 95y^{134} + \dots - 23y - 1)$
c_{10}	$((y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2)(y^{135} + 9y^{134} + \dots - 23y - 1)$
c_{12}	$((y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2)(y^{135} - 23y^{134} + \dots + 9y - 1)$