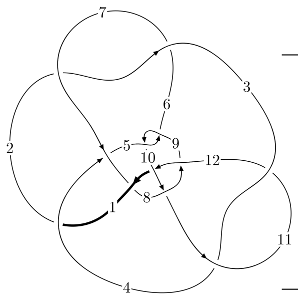
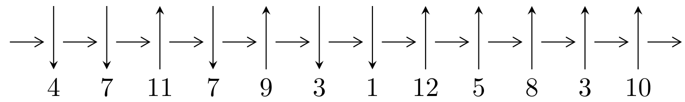
$12n_{0813}$ ($K12n_{0813}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$
\begin{aligned}
I_1^u = \langle & -771111978722u^{20} + 1238251991594u^{19} + \cdots + 108368974278 58b + 3727293790301, \\
& -4119811015012u^{20} + 1626728296443u^{19} + \cdots + 5418448713929a + 9392161389977, \\
& u^{21} - 8u^{18} + \cdots - 4u - 1\rangle \\
I_2^u = \langle & 2.42041 \times 10^{171}u^{57} + 5.72134 \times 10^{171}u^{56} + \cdots + 5.04153 \times 10^{173}b + 9.75536 \times 10^{173}, \\
& 8.38866 \times 10^{171}u^{57} + 3.51276 \times 10^{172}u^{56} + \cdots + 2.52076 \times 10^{173}a + 1.91905 \times 10^{174}, \\
& u^{58} + 4u^{57} + \cdots + 872u + 128\rangle \\
I_3^u = \langle & -5u^9 + 5u^8 + 12u^7 + 18u^6 - 41u^5 - 21u^4 + 7u^3 + 79u^2 + 17b + 3u - 28, \\
& -26u^9 - 59u^8 - 26u^7 + 131u^6 + 137u^5 - 116u^4 - 375u^3 - 208u^2 + 17a + 87u + 123, \\
& u^{10} + u^9 - u^8 - 5u^7 + u^6 + 7u^5 + 7u^4 - 5u^3 - 5u^2 + u + 1\rangle \\
I_4^u = \langle & 2.30529 \times 10^{30}u^{27} - 1.47328 \times 10^{31}u^{26} + \cdots + 2.21437 \times 10^{30}b + 1.35121 \times 10^{30}, \\
& 6.64906 \times 10^{30}u^{27} - 5.31889 \times 10^{31}u^{26} + \cdots + 8.85748 \times 10^{30}a - 3.64020 \times 10^{31},\ u^{28} - 7u^{27} + \cdots - 6u + 1 \\
I_5^u = \langle & b + 1,\ a - 1,\ u - 1\rangle
\end{aligned}
$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 118 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.

$\boldsymbol{I_1^u = \langle -7.71\times10^{11}u^{20}+1.24\times10^{12}u^{19}+\cdots+1.08\times10^{13}b+3.73\times10^{12},\ -4.12\times 10^{12}u^{20}+1.63\times10^{12}u^{19}+\cdots+5.42\times10^{12}a+9.39\times10^{12},\ u^{21}-8u^{18}+\cdots-4u-1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 0.760330u^{20} - 0.300220u^{19} + \cdots - 8.07239u - 1.73337 \\ 0.0711562u^{20} - 0.114263u^{19} + \cdots - 0.839947u - 0.343945 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.942629u^{20} - 0.355006u^{19} + \cdots - 9.35289u - 2.37753 \\ 0.0479865u^{20} - 0.0935026u^{19} + \cdots - 0.803102u - 0.289159 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.219243u^{20} + 0.0523993u^{19} + \cdots - 3.48114u + 2.80752 \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.219243u^{20} + 0.0523993u^{19} + \cdots - 4.48114u + 2.80752 \\ -u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.446182u^{20} + 0.175167u^{19} + \cdots + 6.28299u - 0.878517 \\ -0.0893615u^{20} - 0.0192813u^{19} + \cdots + 1.00965u - 0.0523993 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 1.74610u^{20} - 0.337342u^{19} + \cdots - 10.8540u - 4.81375 \\ 0.182299u^{20} - 0.0547859u^{19} + \cdots - 1.28050u - 0.644165 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0498962u^{20} - 0.0689951u^{19} + \cdots - 3.44956u + 0.288895 \\ -0.0745060u^{20} - 0.133557u^{19} + \cdots - 0.359376u - 0.0997824 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.19456u^{20} + 0.321015u^{19} + \cdots + 9.77795u + 2.14931 \\ -0.154049u^{20} + 0.0478163u^{19} + \cdots + 0.918068u + 0.233126 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.267459u^{20} + 0.213730u^{19} + \cdots + 6.26370u - 0.773718 \\ -0.0893615u^{20} - 0.0192813u^{19} + \cdots + 1.00965u - 0.0523993 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes

$= \frac{11409897026945}{5418448713929}u^{20} + \frac{2927023670684}{5418448713929}u^{19} + \cdots - \frac{19517453412181}{5418448713929}u - \frac{26799066510012}{5418448713929}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{21} - u^{20} + \cdots + 12u - 1$
c_2, c_6	$u^{21} + 16u^{20} + \cdots - 1136u - 272$
c_3, c_5, c_9 c_{11}	$u^{21} - u^{20} + \cdots + 8u - 2$
c_7	$u^{21} - 13u^{20} + \cdots + 640u - 64$
c_8	$u^{21} - 13u^{20} + \cdots + 936u - 128$
c_{10}, c_{12}	$u^{21} - 8u^{18} + \cdots - 4u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{21} - 29y^{20} + \cdots + 120y - 1$
c_2, c_6	$y^{21} - 20y^{20} + \cdots + 874880y - 73984$
c_3, c_5, c_9 c_{11}	$y^{21} + 23y^{20} + \cdots + 24y - 4$
c_7	$y^{21} + 7y^{20} + \cdots + 47104y - 4096$
c_8	$y^{21} + 3y^{20} + \cdots - 15808y - 16384$
c_{10}, c_{12}	$y^{21} + 20y^{19} + \cdots + 14y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.780151 + 0.827041I$ $a = -0.690468 - 0.384442I$ $b = -1.21395 + 0.80321I$	$-1.79892 + 4.20374I$	$3.16458 - 5.67138I$
$u = 0.780151 - 0.827041I$ $a = -0.690468 + 0.384442I$ $b = -1.21395 - 0.80321I$	$-1.79892 - 4.20374I$	$3.16458 + 5.67138I$
$u = -0.734929 + 0.983008I$ $a = 0.79863 + 1.64890I$ $b = -1.47894 + 0.34724I$	$-15.5048 - 8.1479I$	$-2.83574 + 5.35487I$
$u = -0.734929 - 0.983008I$ $a = 0.79863 - 1.64890I$ $b = -1.47894 - 0.34724I$	$-15.5048 + 8.1479I$	$-2.83574 - 5.35487I$
$u = 0.748622$ $a = 0.414600$ $b = -0.565271$	1.12273	10.2330
$u = -0.510970 + 1.147390I$ $a = -0.175396 - 1.317370I$ $b = 1.59053 - 0.12000I$	$-7.52223 + 0.54463I$	$-4.47337 - 1.01574I$
$u = -0.510970 - 1.147390I$ $a = -0.175396 + 1.317370I$ $b = 1.59053 + 0.12000I$	$-7.52223 - 0.54463I$	$-4.47337 + 1.01574I$
$u = 0.387738 + 0.630793I$ $a = -2.09012 + 1.13108I$ $b = -0.471873 + 0.482797I$	$-1.81465 + 5.18759I$	$-1.09861 - 9.26554I$
$u = 0.387738 - 0.630793I$ $a = -2.09012 - 1.13108I$ $b = -0.471873 - 0.482797I$	$-1.81465 - 5.18759I$	$-1.09861 + 9.26554I$
$u = 1.213920 + 0.380226I$ $a = 0.670089 + 0.555684I$ $b = -0.377735 + 0.080128I$	$-8.67588 + 5.06112I$	$-0.60518 - 3.55443I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.213920 - 0.380226I$ $a = 0.670089 - 0.555684I$ $b = -0.377735 - 0.080128I$	$-8.67588 - 5.06112I$	$-0.60518 + 3.55443I$
$u = -0.182083 + 0.679332I$ $a = 0.864922 + 0.185844I$ $b = 0.955096 + 0.761255I$	$-2.90774 - 1.37269I$	$-0.74745 - 2.22318I$
$u = -0.182083 - 0.679332I$ $a = 0.864922 - 0.185844I$ $b = 0.955096 - 0.761255I$	$-2.90774 + 1.37269I$	$-0.74745 + 2.22318I$
$u = 1.194720 + 0.585487I$ $a = -0.162383 + 0.348718I$ $b = 1.075150 - 0.656567I$	$4.25702 + 1.52913I$	$13.27280 - 4.02623I$
$u = 1.194720 - 0.585487I$ $a = -0.162383 - 0.348718I$ $b = 1.075150 + 0.656567I$	$4.25702 - 1.52913I$	$13.27280 + 4.02623I$
$u = -1.01396 + 1.27877I$ $a = 0.340372 + 0.943110I$ $b = -2.25579 - 0.25929I$	$-4.26811 - 4.24791I$	$-1.30490 + 2.45489I$
$u = -1.01396 - 1.27877I$ $a = 0.340372 - 0.943110I$ $b = -2.25579 + 0.25929I$	$-4.26811 + 4.24791I$	$-1.30490 - 2.45489I$
$u = -0.227771 + 0.119755I$ $a = 0.87630 - 3.85579I$ $b = -0.086727 - 0.449153I$	$-0.23558 + 1.56268I$	$-3.45404 - 3.64956I$
$u = -0.227771 - 0.119755I$ $a = 0.87630 + 3.85579I$ $b = -0.086727 + 0.449153I$	$-0.23558 - 1.56268I$	$-3.45404 + 3.64956I$
$u = -1.28113 + 1.23800I$ $a = -0.639248 - 1.006370I$ $b = 2.54688 - 0.25973I$	$-13.0835 - 16.6074I$	$-1.03466 + 7.18152I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.28113 - 1.23800I$ $a = -0.639248 + 1.006370I$ $b = \quad 2.54688 + 0.25973I$	$-13.0835 + 16.6074I$	$-1.03466 - 7.18152I$

II. $\boldsymbol{I^u_2 = \langle 2.42 \times 10^{171} u^{57} + 5.72 \times 10^{171} u^{56} + \cdots + 5.04 \times 10^{173} b + 9.76 \times 10^{173},\ 8.39 \times 10^{171} u^{57} + 3.51 \times 10^{172} u^{56} + \cdots + 2.52 \times 10^{173} a + 1.92 \times 10^{174},\ u^{58} + 4u^{57} + \cdots + 872u + 128\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.0332782u^{57} - 0.139353u^{56} + \cdots - 61.1935u - 7.61297 \\ -0.00480094u^{57} - 0.0113484u^{56} + \cdots - 3.57110u - 1.93500 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0224821u^{57} - 0.0992681u^{56} + \cdots - 55.0638u - 8.74925 \\ -0.00127926u^{57} - 0.00171673u^{56} + \cdots - 4.89206u - 2.33175 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.00965185u^{57} + 0.0517282u^{56} + \cdots + 52.0141u + 6.96187 \\ 0.0269724u^{57} + 0.0878524u^{56} + \cdots + 19.0763u + 3.06564 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0366242u^{57} + 0.139581u^{56} + \cdots + 71.0904u + 10.0275 \\ 0.0269724u^{57} + 0.0878524u^{56} + \cdots + 19.0763u + 3.06564 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.0333509u^{57} - 0.107996u^{56} + \cdots + 8.88183u + 8.19667 \\ -0.00259877u^{57} - 0.00389980u^{56} + \cdots + 0.104493u - 0.784710 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0134212u^{57} - 0.0745099u^{56} + \cdots - 95.0593u - 18.5426 \\ -0.0225240u^{57} - 0.0732163u^{56} + \cdots - 14.8358u - 2.37053 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.0470288u^{57} + 0.169352u^{56} + \cdots + 70.9949u + 9.41598 \\ 0.00210572u^{57} + 0.00443464u^{56} + \cdots - 9.85091u - 1.67880 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0220552u^{57} - 0.0958637u^{56} + \cdots - 17.2846u + 5.83868 \\ -0.0257657u^{57} - 0.0695737u^{56} + \cdots - 5.89943u - 2.31925 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0275206u^{57} - 0.0998945u^{56} + \cdots + 8.84557u + 10.2097 \\ -0.00323154u^{57} - 0.00420204u^{56} + \cdots + 1.93176u - 1.22832 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0701964u^{57} + 0.235361u^{56} + \cdots + 91.5102u + 17.9592$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{58} - 3u^{57} + \cdots - 38440u + 10672$
c_2, c_6	$(u^{29} - 7u^{28} + \cdots + 2424u - 1357)^2$
c_3, c_5, c_9 c_{11}	$u^{58} + 23u^{56} + \cdots - 14700u + 2392$
c_7	$(u^{29} + 5u^{28} + \cdots - 10u - 1)^2$
c_8	$(u^{29} + 7u^{28} + \cdots - 1953u - 961)^2$
c_{10}, c_{12}	$u^{58} + 4u^{57} + \cdots + 872u + 128$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{58} - 67y^{57} + \cdots - 791039808y + 113891584$
c_2, c_6	$(y^{29} - 47y^{28} + \cdots + 15678744y - 1841449)^2$
c_3, c_5, c_9 c_{11}	$y^{58} + 46y^{57} + \cdots + 6901808y + 5721664$
c_7	$(y^{29} + 13y^{28} + \cdots + 2y - 1)^2$
c_8	$(y^{29} + 19y^{28} + \cdots - 1357893y - 923521)^2$
c_{10}, c_{12}	$y^{58} - 2y^{57} + \cdots + 158144y + 16384$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.970952 + 0.123206I$ $a = 0.819901 + 0.428320I$ $b = -0.463224 + 0.438381I$	$-1.00129 - 2.25122I$	$0.70850 + 7.35840I$
$u = -0.970952 - 0.123206I$ $a = 0.819901 - 0.428320I$ $b = -0.463224 - 0.438381I$	$-1.00129 + 2.25122I$	$0.70850 - 7.35840I$
$u = -0.849400 + 0.391997I$ $a = 1.133660 - 0.092843I$ $b = -0.169980 - 0.267743I$	$-4.53799 - 5.31306I$	$-12.85550 - 1.18184I$
$u = -0.849400 - 0.391997I$ $a = 1.133660 + 0.092843I$ $b = -0.169980 + 0.267743I$	$-4.53799 + 5.31306I$	$-12.85550 + 1.18184I$
$u = 0.668341 + 0.894772I$ $a = -0.22061 + 1.63059I$ $b = 1.72337 - 0.32598I$	$-1.59473 + 2.86077I$	0
$u = 0.668341 - 0.894772I$ $a = -0.22061 - 1.63059I$ $b = 1.72337 + 0.32598I$	$-1.59473 - 2.86077I$	0
$u = -1.048720 + 0.433555I$ $a = -1.62647 - 0.54157I$ $b = 1.232180 + 0.143748I$	$-2.70098 - 3.11691I$	0
$u = -1.048720 - 0.433555I$ $a = -1.62647 + 0.54157I$ $b = 1.232180 - 0.143748I$	$-2.70098 + 3.11691I$	0
$u = 0.799753 + 0.172860I$ $a = 0.90740 + 1.16182I$ $b = -0.511323 - 0.052051I$	-0.436187	$1.66325 + 0.I$
$u = 0.799753 - 0.172860I$ $a = 0.90740 - 1.16182I$ $b = -0.511323 + 0.052051I$	-0.436187	$1.66325 + 0.I$

Solutions to I_2^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.399886 + 0.703568I$		
$a =$	$0.254419 + 0.563089I$	$4.94923 + 1.05878I$	$6.88964 - 6.39170I$
$b =$	$1.66971 - 0.15534I$		
$u =$	$0.399886 - 0.703568I$		
$a =$	$0.254419 - 0.563089I$	$4.94923 - 1.05878I$	$6.88964 + 6.39170I$
$b =$	$1.66971 + 0.15534I$		
$u =$	$0.384723 + 0.670475I$		
$a =$	$0.61392 - 1.55244I$	$-13.4224 + 6.4614I$	$-1.40004 - 6.14905I$
$b =$	$0.244715 + 0.833446I$		
$u =$	$0.384723 - 0.670475I$		
$a =$	$0.61392 + 1.55244I$	$-13.4224 - 6.4614I$	$-1.40004 + 6.14905I$
$b =$	$0.244715 - 0.833446I$		
$u =$	$-0.444779 + 0.611693I$		
$a =$	$-0.720516 + 0.511909I$	$-10.00880 - 1.84187I$	$-3.77015 + 1.97633I$
$b =$	$0.814718 - 0.641396I$		
$u =$	$-0.444779 - 0.611693I$		
$a =$	$-0.720516 - 0.511909I$	$-10.00880 + 1.84187I$	$-3.77015 - 1.97633I$
$b =$	$0.814718 + 0.641396I$		
$u =$	$-1.148040 + 0.479507I$		
$a =$	$0.020090 - 0.365423I$	$2.37720 - 6.37942I$	0
$b =$	$0.076488 + 0.476489I$		
$u =$	$-1.148040 - 0.479507I$		
$a =$	$0.020090 + 0.365423I$	$2.37720 + 6.37942I$	0
$b =$	$0.076488 - 0.476489I$		
$u =$	$-0.747583 + 0.041584I$		
$a =$	$-1.04107 + 1.54314I$	$-9.88997 - 1.48212I$	$-4.03213 + 6.97706I$
$b =$	$1.11482 - 1.66879I$		
$u =$	$-0.747583 - 0.041584I$		
$a =$	$-1.04107 - 1.54314I$	$-9.88997 + 1.48212I$	$-4.03213 - 6.97706I$
$b =$	$1.11482 + 1.66879I$		

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.990749 + 0.766586I$ $a = 0.280282 + 0.193695I$ $b = 0.471224 + 0.585624I$	$-1.59473 - 2.86077I$	0
$u = -0.990749 - 0.766586I$ $a = 0.280282 - 0.193695I$ $b = 0.471224 - 0.585624I$	$-1.59473 + 2.86077I$	0
$u = -0.322055 + 0.663247I$ $a = 0.368825 - 0.558300I$ $b = -0.154167 - 0.145249I$	$-0.20224 + 1.88219I$	$1.13310 - 1.98130I$
$u = -0.322055 - 0.663247I$ $a = 0.368825 + 0.558300I$ $b = -0.154167 + 0.145249I$	$-0.20224 - 1.88219I$	$1.13310 + 1.98130I$
$u = 0.409588 + 0.552591I$ $a = 0.086336 - 0.139868I$ $b = -1.44779 + 0.07063I$	$2.85960 - 1.33779I$	$-0.52216 - 4.91076I$
$u = 0.409588 - 0.552591I$ $a = 0.086336 + 0.139868I$ $b = -1.44779 - 0.07063I$	$2.85960 + 1.33779I$	$-0.52216 + 4.91076I$
$u = 0.209872 + 0.593415I$ $a = 4.85128 + 1.58466I$ $b = 1.82822 - 1.10785I$	$-4.53799 + 5.31306I$	$-12.85550 + 1.18184I$
$u = 0.209872 - 0.593415I$ $a = 4.85128 - 1.58466I$ $b = 1.82822 + 1.10785I$	$-4.53799 - 5.31306I$	$-12.85550 - 1.18184I$
$u = -0.616507 + 1.267370I$ $a = -0.028814 - 0.220341I$ $b = -1.49206 - 0.24372I$	$-7.58726 - 8.01913I$	0
$u = -0.616507 - 1.267370I$ $a = -0.028814 + 0.220341I$ $b = -1.49206 + 0.24372I$	$-7.58726 + 8.01913I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.462036 + 0.360242I$ $a = -0.98315 + 2.74951I$ $b = 0.718996 - 0.877020I$	$-1.00129 + 2.25122I$	$0.70850 - 7.35840I$
$u = 0.462036 - 0.360242I$ $a = -0.98315 - 2.74951I$ $b = 0.718996 + 0.877020I$	$-1.00129 - 2.25122I$	$0.70850 + 7.35840I$
$u = -0.70903 + 1.24762I$ $a = -0.301495 - 1.194180I$ $b = 1.54241 - 0.07861I$	$-5.00732 - 7.85020I$	0
$u = -0.70903 - 1.24762I$ $a = -0.301495 + 1.194180I$ $b = 1.54241 + 0.07861I$	$-5.00732 + 7.85020I$	0
$u = -0.273245 + 0.334410I$ $a = -2.46883 - 1.26481I$ $b = -0.302031 + 0.443910I$	$-0.20224 - 1.88219I$	$1.13310 + 1.98130I$
$u = -0.273245 - 0.334410I$ $a = -2.46883 + 1.26481I$ $b = -0.302031 - 0.443910I$	$-0.20224 + 1.88219I$	$1.13310 - 1.98130I$
$u = -1.30879 + 0.89323I$ $a = 0.897618 + 1.082250I$ $b = -2.86240 - 0.17407I$	$-5.00732 - 7.85020I$	0
$u = -1.30879 - 0.89323I$ $a = 0.897618 - 1.082250I$ $b = -2.86240 + 0.17407I$	$-5.00732 + 7.85020I$	0
$u = -0.166439 + 0.374859I$ $a = 0.95887 + 4.12820I$ $b = -0.420169 - 0.720783I$	$-2.70098 - 3.11691I$	$0.54496 + 3.01160I$
$u = -0.166439 - 0.374859I$ $a = 0.95887 - 4.12820I$ $b = -0.420169 + 0.720783I$	$-2.70098 + 3.11691I$	$0.54496 - 3.01160I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.46535 + 0.65691I$ $a = -0.589236 - 0.580845I$ $b = 2.34121 + 1.27625I$	$-13.23260 + 1.57461I$	0
$u = -1.46535 - 0.65691I$ $a = -0.589236 + 0.580845I$ $b = 2.34121 - 1.27625I$	$-13.23260 - 1.57461I$	0
$u = 1.03778 + 1.24149I$ $a = 0.504942 - 1.241550I$ $b = -2.29516 - 0.77088I$	$2.37720 + 6.37942I$	0
$u = 1.03778 - 1.24149I$ $a = 0.504942 + 1.241550I$ $b = -2.29516 + 0.77088I$	$2.37720 - 6.37942I$	0
$u = 0.40733 + 1.65602I$ $a = -0.135708 + 0.910621I$ $b = 0.109573 + 0.629112I$	$-13.23260 + 1.57461I$	0
$u = 0.40733 - 1.65602I$ $a = -0.135708 - 0.910621I$ $b = 0.109573 - 0.629112I$	$-13.23260 - 1.57461I$	0
$u = 0.60006 + 1.60353I$ $a = 0.231011 - 1.099380I$ $b = -1.41705 - 1.25171I$	$-10.00880 + 1.84187I$	0
$u = 0.60006 - 1.60353I$ $a = 0.231011 + 1.099380I$ $b = -1.41705 + 1.25171I$	$-10.00880 - 1.84187I$	0
$u = 1.75023 + 0.03038I$ $a = -0.089242 + 0.625251I$ $b = 0.09728 - 2.83583I$	$4.94923 + 1.05878I$	0
$u = 1.75023 - 0.03038I$ $a = -0.089242 - 0.625251I$ $b = 0.09728 + 2.83583I$	$4.94923 - 1.05878I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.87494 + 0.16735I$ $a = 0.548369 + 0.611508I$ $b = -1.20667 - 3.29329I$	$2.85960 - 1.33779I$	0
$u = 1.87494 - 0.16735I$ $a = 0.548369 - 0.611508I$ $b = -1.20667 + 3.29329I$	$2.85960 + 1.33779I$	0
$u = 1.47857 + 1.23037I$ $a = -0.528572 + 0.875814I$ $b = 3.23832 - 0.19930I$	$-7.58726 + 8.01913I$	0
$u = 1.47857 - 1.23037I$ $a = -0.528572 - 0.875814I$ $b = 3.23832 + 0.19930I$	$-7.58726 - 8.01913I$	0
$u = 0.01823 + 1.94450I$ $a = -0.003111 - 0.920627I$ $b = 0.08139 - 1.65029I$	$-9.88997 + 1.48212I$	0
$u = 0.01823 - 1.94450I$ $a = -0.003111 + 0.920627I$ $b = 0.08139 + 1.65029I$	$-9.88997 - 1.48212I$	0
$u = -1.43968 + 1.62909I$ $a = 0.353663 + 0.663908I$ $b = -3.06261 + 0.28021I$	$-13.4224 + 6.4614I$	0
$u = -1.43968 - 1.62909I$ $a = 0.353663 - 0.663908I$ $b = -3.06261 - 0.28021I$	$-13.4224 - 6.4614I$	0

III. $\boldsymbol{I_3^u =}$
$\boldsymbol{\langle -5u^9+5u^8+\cdots+17b-28,\ -26u^9-59u^8+\cdots+17a+123,\ u^{10}+u^9+\cdots+u+1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} 1.52941u^9 + 3.47059u^8 + \cdots - 5.11765u - 7.23529 \\ 0.294118u^9 - 0.294118u^8 + \cdots - 0.176471u + 1.64706 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 2.94118u^9 + 5.05882u^8 + \cdots - 8.76471u - 7.52941 \\ -0.352941u^9 - 0.647059u^8 + \cdots + 1.41176u + 1.82353 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.52941u^9 + 1.47059u^8 + \cdots - 0.117647u + 3.76471 \\ -u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.52941u^9 + 1.47059u^8 + \cdots - 1.11765u + 3.76471 \\ -u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 2.64706u^9 + 3.35294u^8 + \cdots - 8.58824u + 2.82353 \\ -1.11765u^9 - 0.882353u^8 + \cdots + 2.47059u - 1.05882 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 9.64706u^9 + 11.3529u^8 + \cdots - 26.5882u - 3.17647 \\ -1.41176u^9 - 1.58824u^8 + \cdots + 3.64706u + 0.294118 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.117647u^9 + 0.117647u^8 + \cdots + 2.47059u - 4.05882 \\ 0.823529u^9 + 0.176471u^8 + \cdots - 1.29412u + 1.41176 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 4.82353u^9 + 6.17647u^8 + \cdots - 15.2941u + 0.411765 \\ -1.52941u^9 - 1.47059u^8 + \cdots + 3.11765u - 0.764706 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 4.88235u^9 + 5.11765u^8 + \cdots - 11.5294u + 4.94118 \\ -1.11765u^9 - 0.882353u^8 + \cdots + 2.47059u - 1.05882 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10u^9 + 9u^8 - 8u^7 - 44u^6 + 15u^5 + 54u^4 + 59u^3 - 39u^2 - 16u + 14$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{10} - 2u^8 + 5u^7 - 2u^6 - 4u^5 + 12u^4 - 13u^3 + 10u^2 - 5u + 1$
c_2	$u^{10} - 6u^9 + \cdots - 9u + 1$
c_3, c_9	$u^{10} + u^9 + 7u^8 + 3u^7 + 16u^6 + 2u^5 + 18u^4 + 2u^3 + 10u^2 + 3$
c_5, c_{11}	$u^{10} - u^9 + 7u^8 - 3u^7 + 16u^6 - 2u^5 + 18u^4 - 2u^3 + 10u^2 + 3$
c_6	$u^{10} + 6u^9 + \cdots + 9u + 1$
c_7	$u^{10} + 2u^9 + 5u^8 + 8u^7 + 8u^6 + 8u^5 + 5u^4 + u^3 + 4u^2 + 3$
c_8	$u^{10} + 5u^9 + \cdots + 233u + 115$
c_{10}, c_{12}	$u^{10} + u^9 - u^8 - 5u^7 + u^6 + 7u^5 + 7u^4 - 5u^3 - 5u^2 + u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{10} - 4y^9 + 7y^7 + 16y^6 + 28y^5 + 46y^4 + 27y^3 - 6y^2 - 5y + 1$
c_2, c_6	$y^{10} - 6y^9 + \cdots + y + 1$
c_3, c_5, c_9 c_{11}	$y^{10} + 13y^9 + \cdots + 60y + 9$
c_7	$y^{10} + 6y^9 + \cdots + 24y + 9$
c_8	$y^{10} + y^9 + \cdots - 2079y + 13225$
c_{10}, c_{12}	$y^{10} - 3y^9 + \cdots - 11y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.739631 + 1.065580I$ $a = -0.502712 - 0.815992I$ $b = 1.42384 + 0.44686I$	$-13.27760 + 4.63105I$	$-1.33027 - 1.48625I$
$u = -0.739631 - 1.065580I$ $a = -0.502712 + 0.815992I$ $b = 1.42384 - 0.44686I$	$-13.27760 - 4.63105I$	$-1.33027 + 1.48625I$
$u = 0.644101 + 0.065680I$ $a = 0.18477 + 2.34872I$ $b = -0.134072 - 0.287586I$	$0.35864 - 1.54639I$	$10.53004 + 3.29271I$
$u = 0.644101 - 0.065680I$ $a = 0.18477 - 2.34872I$ $b = -0.134072 + 0.287586I$	$0.35864 + 1.54639I$	$10.53004 - 3.29271I$
$u = 1.267070 + 0.578853I$ $a = -0.222986 + 0.158778I$ $b = 0.935257 - 0.569123I$	$3.84184 + 1.32742I$	$-2.88591 + 3.25139I$
$u = 1.267070 - 0.578853I$ $a = -0.222986 - 0.158778I$ $b = 0.935257 + 0.569123I$	$3.84184 - 1.32742I$	$-2.88591 - 3.25139I$
$u = -0.529527 + 0.126383I$ $a = -3.53705 - 0.62240I$ $b = 0.577884 + 0.595991I$	$-0.97495 - 4.80761I$	$7.23080 + 7.17624I$
$u = -0.529527 - 0.126383I$ $a = -3.53705 + 0.62240I$ $b = 0.577884 - 0.595991I$	$-0.97495 + 4.80761I$	$7.23080 - 7.17624I$
$u = -1.14202 + 1.07758I$ $a = 0.577976 + 1.042340I$ $b = -2.30291 - 0.30963I$	$-3.10738 - 6.86472I$	$1.45534 + 4.82302I$
$u = -1.14202 - 1.07758I$ $a = 0.577976 - 1.042340I$ $b = -2.30291 + 0.30963I$	$-3.10738 + 6.86472I$	$1.45534 - 4.82302I$

IV.

$\boldsymbol{I^u_4 = \langle 2.31\times10^{30}u^{27} - 1.47\times10^{31}u^{26} + \cdots + 2.21\times10^{30}b + 1.35\times10^{30},\ 6.65\times10^{30}u^{27} - 5.32\times10^{31}u^{26} + \cdots + 8.86\times10^{30}a - 3.64\times10^{31},\ u^{28} - 7u^{27} + \cdots - 6u + 1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.750672u^{27} + 6.00497u^{26} + \cdots - 25.1851u + 4.10975 \\ -1.04106u^{27} + 6.65327u^{26} + \cdots - 6.19454u - 0.610200 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -1.05959u^{27} + 7.92277u^{26} + \cdots - 26.1273u + 2.74928 \\ -0.934908u^{27} + 5.93795u^{26} + \cdots - 5.03563u - 0.854839 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.08517u^{27} - 6.78856u^{26} + \cdots - 6.39697u + 0.188582 \\ -1.15795u^{27} + 7.83176u^{26} + \cdots - 10.2716u + 0.216942 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0727820u^{27} + 1.04320u^{26} + \cdots - 16.6685u + 0.405524 \\ -1.15795u^{27} + 7.83176u^{26} + \cdots - 10.2716u + 0.216942 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.41793u^{27} + 16.4679u^{26} + \cdots - 17.6032u + 1.98834 \\ 0.0364625u^{27} - 0.665940u^{26} + \cdots + 13.3646u - 2.72719 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2.00650u^{27} - 12.4710u^{26} + \cdots + 12.7692u - 1.89411 \\ -0.167734u^{27} + 0.952814u^{26} + \cdots + 5.38662u - 0.590137 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1.79021u^{27} + 13.0418u^{26} + \cdots - 28.1238u + 5.96157 \\ -1.34194u^{27} + 8.35246u^{26} + \cdots - 5.39875u - 0.247119 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.65349u^{27} + 11.3001u^{26} + \cdots - 18.4991u + 2.74731 \\ 0.474767u^{27} - 3.27790u^{26} + \cdots + 9.77340u - 2.35437 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2.47184u^{27} + 17.6089u^{26} + \cdots - 37.6884u + 7.12657 \\ 0.0174430u^{27} - 0.475093u^{26} + \cdots + 8.72059u - 2.41104 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0.460010u^{27} - 0.721349u^{26} + \cdots - 70.3985u + 14.8642$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{28} - 14u^{27} + \cdots - 224u + 64$
c_2	$(u^{14} + 4u^{13} + \cdots - u + 1)^2$
c_3, c_9	$u^{28} - u^{27} + \cdots - 12u + 2$
c_5, c_{11}	$u^{28} + u^{27} + \cdots + 12u + 2$
c_6	$(u^{14} - 4u^{13} + \cdots + u + 1)^2$
c_7	$(u^{14} - u^{13} + \cdots + 3u + 4)^2$
c_8	$(u^{14} - 2u^{13} + \cdots - 4u^2 + 1)^2$
c_{10}, c_{12}	$u^{28} - 7u^{27} + \cdots - 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{28} - 28y^{27} + \cdots - 30208y + 4096$
c_2, c_6	$(y^{14} - 4y^{13} + \cdots + 11y + 1)^2$
c_3, c_5, c_9 c_{11}	$y^{28} + 11y^{27} + \cdots + 44y + 4$
c_7	$(y^{14} + 9y^{13} + \cdots + 119y + 16)^2$
c_8	$(y^{14} - 2y^{13} + \cdots - 8y + 1)^2$
c_{10}, c_{12}	$y^{28} - 7y^{27} + \cdots + 30y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.004880 + 0.072490I$ $a = -0.802713 - 0.652904I$ $b = 0.425826 - 0.441245I$	$-1.22209 - 1.30275I$	$-0.189828 + 0.161880I$
$u = -1.004880 - 0.072490I$ $a = -0.802713 + 0.652904I$ $b = 0.425826 + 0.441245I$	$-1.22209 + 1.30275I$	$-0.189828 - 0.161880I$
$u = 0.424816 + 0.934471I$ $a = 0.69462 + 1.51106I$ $b = 1.80723 - 0.35102I$	$-3.32667 + 3.42166I$	$-4.84660 - 3.31664I$
$u = 0.424816 - 0.934471I$ $a = 0.69462 - 1.51106I$ $b = 1.80723 + 0.35102I$	$-3.32667 - 3.42166I$	$-4.84660 + 3.31664I$
$u = 0.916929 + 0.487153I$ $a = 1.163610 - 0.028155I$ $b = -0.397255 + 0.075109I$	$-4.25469 + 5.51724I$	$5.76227 - 11.53768I$
$u = 0.916929 - 0.487153I$ $a = 1.163610 + 0.028155I$ $b = -0.397255 - 0.075109I$	$-4.25469 - 5.51724I$	$5.76227 + 11.53768I$
$u = 0.243766 + 0.913191I$ $a = 0.091903 + 0.373054I$ $b = 1.74755 - 0.02720I$	$4.53279 - 0.11943I$	$0.86246 - 1.23203I$
$u = 0.243766 - 0.913191I$ $a = 0.091903 - 0.373054I$ $b = 1.74755 + 0.02720I$	$4.53279 + 0.11943I$	$0.86246 + 1.23203I$
$u = -0.761583 + 0.779898I$ $a = -0.901128 - 0.171680I$ $b = -0.360802 - 0.712602I$	$-3.32667 - 3.42166I$	$-4.84660 + 3.31664I$
$u = -0.761583 - 0.779898I$ $a = -0.901128 + 0.171680I$ $b = -0.360802 + 0.712602I$	$-3.32667 + 3.42166I$	$-4.84660 - 3.31664I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.809426 + 0.207631I$ $a = -0.44006 - 1.51056I$ $b = 1.48483 + 1.65770I$	$-9.62737 + 1.00157I$	$3.57146 + 5.70153I$
$u = -0.809426 - 0.207631I$ $a = -0.44006 + 1.51056I$ $b = 1.48483 - 1.65770I$	$-9.62737 - 1.00157I$	$3.57146 - 5.70153I$
$u = -1.207270 + 0.385496I$ $a = 0.161520 + 0.070667I$ $b = -0.407363 + 0.616215I$	$1.89115 - 6.53826I$	$-3.88743 + 8.27723I$
$u = -1.207270 - 0.385496I$ $a = 0.161520 - 0.070667I$ $b = -0.407363 - 0.616215I$	$1.89115 + 6.53826I$	$-3.88743 - 8.27723I$
$u = 0.389877 + 0.482114I$ $a = -4.23013 - 2.23645I$ $b = -1.58114 + 1.06937I$	$-4.25469 + 5.51724I$	$5.76227 - 11.53768I$
$u = 0.389877 - 0.482114I$ $a = -4.23013 + 2.23645I$ $b = -1.58114 - 1.06937I$	$-4.25469 - 5.51724I$	$5.76227 + 11.53768I$
$u = 0.369497 + 0.353191I$ $a = -1.33154 + 3.57650I$ $b = 0.578355 - 0.755881I$	$-1.22209 + 1.30275I$	$-0.189828 - 0.161880I$
$u = 0.369497 - 0.353191I$ $a = -1.33154 - 3.57650I$ $b = 0.578355 + 0.755881I$	$-1.22209 - 1.30275I$	$-0.189828 + 0.161880I$
$u = 1.01785 + 1.23847I$ $a = 0.518221 - 1.237570I$ $b = -2.08566 - 0.84265I$	$1.89115 + 6.53826I$	$-3.88743 - 8.27723I$
$u = 1.01785 - 1.23847I$ $a = 0.518221 + 1.237570I$ $b = -2.08566 + 0.84265I$	$1.89115 - 6.53826I$	$-3.88743 + 8.27723I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.056553 + 0.223388I$ $a = -1.22248 - 1.68715I$ $b = -1.41442 + 0.07228I$	$2.95973 + 1.83574I$	$2.72767 - 9.49202I$
$u = 0.056553 - 0.223388I$ $a = -1.22248 + 1.68715I$ $b = -1.41442 - 0.07228I$	$2.95973 - 1.83574I$	$2.72767 + 9.49202I$
$u = 1.80416 + 0.23975I$ $a = -0.445326 - 0.590750I$ $b = 0.44418 + 3.19274I$	$2.95973 - 1.83574I$	$0. + 9.49202I$
$u = 1.80416 - 0.23975I$ $a = -0.445326 + 0.590750I$ $b = 0.44418 - 3.19274I$	$2.95973 + 1.83574I$	$0. - 9.49202I$
$u = 1.85731 + 0.07680I$ $a = 0.330965 - 0.619073I$ $b = -1.27854 + 3.06555I$	$4.53279 + 0.11943I$	0
$u = 1.85731 - 0.07680I$ $a = 0.330965 + 0.619073I$ $b = -1.27854 - 3.06555I$	$4.53279 - 0.11943I$	0
$u = 0.20240 + 2.14534I$ $a = -0.087442 + 0.835133I$ $b = 0.03722 + 2.04871I$	$-9.62737 + 1.00157I$	0
$u = 0.20240 - 2.14534I$ $a = -0.087442 - 0.835133I$ $b = 0.03722 - 2.04871I$	$-9.62737 - 1.00157I$	0

V. $I_5^u = \langle b+1,\ a-1,\ u-1 \rangle$

(i) Arc colorings

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

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

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

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

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

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

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = \quad 1.00000$ $b = -1.00000$	0	0

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_4	$(u-1)(u^{10}-2u^8+\cdots-5u+1)$ $\cdot(u^{21}-u^{20}+\cdots+12u-1)(u^{28}-14u^{27}+\cdots-224u+64)$ $\cdot(u^{58}-3u^{57}+\cdots-38440u+10672)$
c_2	$(u-1)(u^{10}-6u^9+\cdots-9u+1)(u^{14}+4u^{13}+\cdots-u+1)^2$ $\cdot(u^{21}+16u^{20}+\cdots-1136u-272)$ $\cdot(u^{29}-7u^{28}+\cdots+2424u-1357)^2$
c_3, c_9	$u(u^{10}+u^9+7u^8+3u^7+16u^6+2u^5+18u^4+2u^3+10u^2+3)$ $\cdot(u^{21}-u^{20}+\cdots+8u-2)(u^{28}-u^{27}+\cdots-12u+2)$ $\cdot(u^{58}+23u^{56}+\cdots-14700u+2392)$
c_5, c_{11}	$u(u^{10}-u^9+7u^8-3u^7+16u^6-2u^5+18u^4-2u^3+10u^2+3)$ $\cdot(u^{21}-u^{20}+\cdots+8u-2)(u^{28}+u^{27}+\cdots+12u+2)$ $\cdot(u^{58}+23u^{56}+\cdots-14700u+2392)$
c_6	$(u+1)(u^{10}+6u^9+\cdots+9u+1)(u^{14}-4u^{13}+\cdots+u+1)^2$ $\cdot(u^{21}+16u^{20}+\cdots-1136u-272)$ $\cdot(u^{29}-7u^{28}+\cdots+2424u-1357)^2$
c_7	$u(u^{10}+2u^9+5u^8+8u^7+8u^6+8u^5+5u^4+u^3+4u^2+3)$ $\cdot((u^{14}-u^{13}+\cdots+3u+4)^2)(u^{21}-13u^{20}+\cdots+640u-64)$ $\cdot(u^{29}+5u^{28}+\cdots-10u-1)^2$
c_8	$(u+1)(u^{10}+5u^9+\cdots+233u+115)(u^{14}-2u^{13}+\cdots-4u^2+1)^2$ $\cdot(u^{21}-13u^{20}+\cdots+936u-128)(u^{29}+7u^{28}+\cdots-1953u-961)^2$
c_{10}, c_{12}	$(u-1)(u^{10}+u^9-u^8-5u^7+u^6+7u^5+7u^4-5u^3-5u^2+u+1)$ $\cdot(u^{21}-8u^{18}+\cdots-4u-1)(u^{28}-7u^{27}+\cdots-6u+1)$ $\cdot(u^{58}+4u^{57}+\cdots+872u+128)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y-1)(y^{10}-4y^9+\cdots-5y+1)$ $\cdot(y^{21}-29y^{20}+\cdots+120y-1)(y^{28}-28y^{27}+\cdots-30208y+4096)$ $\cdot(y^{58}-67y^{57}+\cdots-791039808y+113891584)$
c_2, c_6	$(y-1)(y^{10}-6y^9+\cdots+y+1)(y^{14}-4y^{13}+\cdots+11y+1)^2$ $\cdot(y^{21}-20y^{20}+\cdots+874880y-73984)$ $\cdot(y^{29}-47y^{28}+\cdots+15678744y-1841449)^2$
c_3, c_5, c_9 c_{11}	$y(y^{10}+13y^9+\cdots+60y+9)(y^{21}+23y^{20}+\cdots+24y-4)$ $\cdot(y^{28}+11y^{27}+\cdots+44y+4)$ $\cdot(y^{58}+46y^{57}+\cdots+6901808y+5721664)$
c_7	$y(y^{10}+6y^9+\cdots+24y+9)(y^{14}+9y^{13}+\cdots+119y+16)^2$ $\cdot(y^{21}+7y^{20}+\cdots+47104y-4096)(y^{29}+13y^{28}+\cdots+2y-1)^2$
c_8	$(y-1)(y^{10}+y^9+\cdots-2079y+13225)(y^{14}-2y^{13}+\cdots-8y+1)^2$ $\cdot(y^{21}+3y^{20}+\cdots-15808y-16384)$ $\cdot(y^{29}+19y^{28}+\cdots-1357893y-923521)^2$
c_{10}, c_{12}	$(y-1)(y^{10}-3y^9+\cdots-11y+1)(y^{21}+20y^{19}+\cdots+14y-1)$ $\cdot(y^{28}-7y^{27}+\cdots+30y+1)(y^{58}-2y^{57}+\cdots+158144y+16384)$