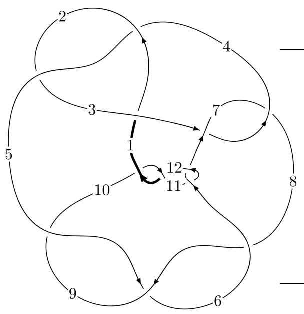
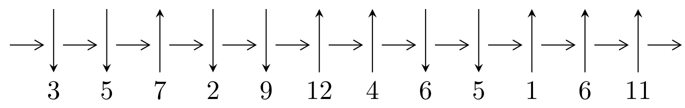
$12n_{0180}$ ($K12n_{0180}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 8.59216 \times 10^{59} u^{59} + 7.11341 \times 10^{60} u^{58} + \cdots + 2.71076 \times 10^{61} b + 6.33557 \times 10^{61}, \\
& -2.02586 \times 10^{62} u^{59} - 3.30298 \times 10^{62} u^{58} + \cdots + 4.60829 \times 10^{62} a - 1.81464 \times 10^{63}, \\
& u^{60} + 3u^{59} + \cdots + 12u + 17 \rangle \\
I_2^u = \langle & -51u^3a^2 + 106u^3a + \cdots - 80a - 21, \\
& -2u^3a^2 - 2a^2u^2 + u^3a + a^3 + a^2u + 2u^2a + 6u^3 + 2a^2 - 3au + 9u^2 - 2a + 2u - 2,\ u^4 - u^2 + 1 \rangle
\end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 72 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. $\boldsymbol{I^u_1 = \langle 8.59 \times 10^{59} u^{59} + 7.11 \times 10^{60} u^{58} + \cdots + 2.71 \times 10^{61} b + 6.34 \times 10^{61},\ -2.03 \times 10^{62} u^{59} - 3.30 \times 10^{62} u^{58} + \cdots + 4.61 \times 10^{62} a - 1.81 \times 10^{63},\ u^{60} + 3u^{59} + \cdots + 12u + 17\rangle}$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.439611u^{59} + 0.716748u^{58} + \cdots - 0.813297u + 3.93778 \\ -0.0316965u^{59} - 0.262414u^{58} + \cdots + 4.37519u - 2.33720 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.0820681u^{59} + 0.302588u^{58} + \cdots - 10.8701u - 5.50752 \\ -0.0713087u^{59} - 0.287800u^{58} + \cdots + 3.92724u + 1.83826 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0.153377u^{59} + 0.590388u^{58} + \cdots - 14.7973u - 7.34578 \\ -0.0713087u^{59} - 0.287800u^{58} + \cdots + 3.92724u + 1.83826 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.106413u^{59} + 0.119118u^{58} + \cdots - 4.94013u - 3.96049 \\ 0.0147849u^{59} + 0.000149588u^{58} + \cdots + 3.53440u + 4.49621 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.313827u^{59} - 0.803067u^{58} + \cdots + 2.00850u - 0.850375 \\ -0.0119731u^{59} - 0.0516958u^{58} + \cdots + 2.55197u + 2.41305 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.111888u^{59} + 0.442512u^{58} + \cdots - 5.49722u - 3.98640 \\ 0.0511739u^{59} + 0.197997u^{58} + \cdots - 3.04177u + 1.75645 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^5 - u \\ u^5 - u^3 + u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.359408u^{59} + 0.109275u^{58} + \cdots + 23.9102u + 7.48289$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{60} + 35u^{59} + \cdots + 64u + 1$
c_2, c_4	$u^{60} - 5u^{59} + \cdots - 16u + 1$
c_3, c_7	$u^{60} - u^{59} + \cdots - 4u + 1$
c_5, c_8, c_9	$u^{60} - 3u^{59} + \cdots - 154u + 49$
c_6, c_{11}	$u^{60} - 3u^{59} + \cdots - 12u + 17$
c_{10}, c_{12}	$u^{60} - 17u^{59} + \cdots - 2558u + 289$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{60} - 15y^{59} + \cdots + 2064y + 1$
c_2, c_4	$y^{60} - 35y^{59} + \cdots - 64y + 1$
c_3, c_7	$y^{60} - 15y^{59} + \cdots - 40y + 1$
c_5, c_8, c_9	$y^{60} + 21y^{59} + \cdots + 34104y + 2401$
c_6, c_{11}	$y^{60} - 17y^{59} + \cdots - 2558y + 289$
c_{10}, c_{12}	$y^{60} + 59y^{59} + \cdots - 725794y + 83521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.929012 + 0.409111I$ $a = -3.04269 + 1.15379I$ $b = 2.59631 + 1.09970I$	$-0.23119 + 1.94297I$	$-2.05685 - 11.08290I$
$u = 0.929012 - 0.409111I$ $a = -3.04269 - 1.15379I$ $b = 2.59631 - 1.09970I$	$-0.23119 - 1.94297I$	$-2.05685 + 11.08290I$
$u = -0.832822 + 0.587944I$ $a = -1.21567 - 1.08428I$ $b = 0.069828 - 1.012120I$	$3.25865 + 0.70404I$	$-1.90677 + 0.77167I$
$u = -0.832822 - 0.587944I$ $a = -1.21567 + 1.08428I$ $b = 0.069828 + 1.012120I$	$3.25865 - 0.70404I$	$-1.90677 - 0.77167I$
$u = 0.004950 + 1.024030I$ $a = 0.183534 - 0.050087I$ $b = 0.740563 - 0.693298I$	$-3.25466 - 4.08265I$	$-4.68553 + 7.94094I$
$u = 0.004950 - 1.024030I$ $a = 0.183534 + 0.050087I$ $b = 0.740563 + 0.693298I$	$-3.25466 + 4.08265I$	$-4.68553 - 7.94094I$
$u = -0.822970 + 0.630204I$ $a = 1.54004 + 1.13008I$ $b = -0.133459 + 1.061150I$	$3.19637 - 5.46860I$	$-1.43660 + 7.42023I$
$u = -0.822970 - 0.630204I$ $a = 1.54004 - 1.13008I$ $b = -0.133459 - 1.061150I$	$3.19637 + 5.46860I$	$-1.43660 - 7.42023I$
$u = 0.809567 + 0.501021I$ $a = -5.62494 - 3.66221I$ $b = -0.98200 + 6.14395I$	$-0.08137 + 2.05589I$	$27.6617 + 22.2084I$
$u = 0.809567 - 0.501021I$ $a = -5.62494 + 3.66221I$ $b = -0.98200 - 6.14395I$	$-0.08137 - 2.05589I$	$27.6617 - 22.2084I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.006930+0.332122I$ $a=-1.315940-0.433014I$ $b=\ \ 0.99469-1.18965I$	$0.04819-3.77072I$	$0.50249+5.64131I$
$u=-1.006930-0.332122I$ $a=-1.315940+0.433014I$ $b=\ \ 0.99469+1.18965I$	$0.04819+3.77072I$	$0.50249-5.64131I$
$u=-1.079450+0.120285I$ $a=-1.043550-0.134913I$ $b=\ \ 0.563555-0.123402I$	$1.73585-0.04165I$	$7.02929-1.55117I$
$u=-1.079450-0.120285I$ $a=-1.043550+0.134913I$ $b=\ \ 0.563555+0.123402I$	$1.73585+0.04165I$	$7.02929+1.55117I$
$u=-0.931671+0.569277I$ $a=\ \ 0.339977+1.097140I$ $b=-0.986373-0.325235I$	$1.83197-2.08769I$	$7.31144+2.76134I$
$u=-0.931671-0.569277I$ $a=\ \ 0.339977-1.097140I$ $b=-0.986373+0.325235I$	$1.83197+2.08769I$	$7.31144-2.76134I$
$u=\ \ 1.085650+0.220553I$ $a=\ \ 2.03983+0.42897I$ $b=-1.19988-0.96562I$	$3.75827+4.28418I$	$7.39769-5.27258I$
$u=\ \ 1.085650-0.220553I$ $a=\ \ 2.03983-0.42897I$ $b=-1.19988+0.96562I$	$3.75827-4.28418I$	$7.39769+5.27258I$
$u=-0.758636+0.887275I$ $a=-0.340815-0.278642I$ $b=-0.78502-1.49028I$	$-3.82130+3.76339I$	0
$u=-0.758636-0.887275I$ $a=-0.340815+0.278642I$ $b=-0.78502+1.49028I$	$-3.82130-3.76339I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.802241 + 0.075713I$ $a = 2.17404 - 1.63873I$ $b = -0.323287 + 0.783361I$	$6.00487 - 2.27473I$	$9.19193 + 3.71392I$
$u = 0.802241 - 0.075713I$ $a = 2.17404 + 1.63873I$ $b = -0.323287 - 0.783361I$	$6.00487 + 2.27473I$	$9.19193 - 3.71392I$
$u = 0.879342 + 0.837979I$ $a = -0.176337 - 0.434177I$ $b = 0.073200 - 0.870222I$	$-4.62872 + 2.55229I$	0
$u = 0.879342 - 0.837979I$ $a = -0.176337 + 0.434177I$ $b = 0.073200 + 0.870222I$	$-4.62872 - 2.55229I$	0
$u = -0.715460 + 0.984773I$ $a = 0.344792 + 0.130176I$ $b = 1.03109 + 1.53314I$	$-7.75605 + 9.32324I$	0
$u = -0.715460 - 0.984773I$ $a = 0.344792 - 0.130176I$ $b = 1.03109 - 1.53314I$	$-7.75605 - 9.32324I$	0
$u = 0.830973 + 0.892744I$ $a = 1.215320 - 0.601098I$ $b = 0.180459 - 0.790574I$	$-8.14977 - 1.83674I$	0
$u = 0.830973 - 0.892744I$ $a = 1.215320 + 0.601098I$ $b = 0.180459 + 0.790574I$	$-8.14977 + 1.83674I$	0
$u = -0.792660 + 0.936246I$ $a = -0.092647 - 0.224921I$ $b = -0.210710 + 0.159454I$	$0.10426 - 3.90855I$	0
$u = -0.792660 - 0.936246I$ $a = -0.092647 + 0.224921I$ $b = -0.210710 - 0.159454I$	$0.10426 + 3.90855I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.929150 + 0.821763I$ $a = -1.301880 + 0.509111I$ $b = 0.142826 + 0.827123I$	$-4.47334 + 3.63985I$	0
$u = 0.929150 - 0.821763I$ $a = -1.301880 - 0.509111I$ $b = 0.142826 - 0.827123I$	$-4.47334 - 3.63985I$	0
$u = -0.880329 + 0.874378I$ $a = 0.520777 + 0.321136I$ $b = 0.56993 + 1.71766I$	$-8.33406 - 1.51336I$	0
$u = -0.880329 - 0.874378I$ $a = 0.520777 - 0.321136I$ $b = 0.56993 - 1.71766I$	$-8.33406 + 1.51336I$	0
$u = -0.703326 + 0.228376I$ $a = 1.271670 + 0.570807I$ $b = -0.813961 + 0.932874I$	$1.22817 - 0.90691I$	$4.10313 - 1.08221I$
$u = -0.703326 - 0.228376I$ $a = 1.271670 - 0.570807I$ $b = -0.813961 - 0.932874I$	$1.22817 + 0.90691I$	$4.10313 + 1.08221I$
$u = 1.228280 + 0.305750I$ $a = -1.68849 - 0.21445I$ $b = 1.32261 + 0.91261I$	$1.11802 + 8.63012I$	0
$u = 1.228280 - 0.305750I$ $a = -1.68849 + 0.21445I$ $b = 1.32261 - 0.91261I$	$1.11802 - 8.63012I$	0
$u = -0.945860 + 0.847488I$ $a = -1.70802 - 0.90011I$ $b = 0.58276 - 1.79431I$	$-8.12673 - 4.86921I$	0
$u = -0.945860 - 0.847488I$ $a = -1.70802 + 0.90011I$ $b = 0.58276 + 1.79431I$	$-8.12673 + 4.86921I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.986055 + 0.828942I$ $a = 0.073132 + 0.599164I$ $b = 0.121967 + 0.888675I$	$-7.66022 + 8.21302I$	0
$u = 0.986055 - 0.828942I$ $a = 0.073132 - 0.599164I$ $b = 0.121967 - 0.888675I$	$-7.66022 - 8.21302I$	0
$u = -1.021020 + 0.788235I$ $a = 1.76694 + 0.84443I$ $b = -0.88862 + 1.59075I$	$-3.00183 - 9.98439I$	0
$u = -1.021020 - 0.788235I$ $a = 1.76694 - 0.84443I$ $b = -0.88862 - 1.59075I$	$-3.00183 + 9.98439I$	0
$u = 0.829095 + 0.994657I$ $a = 0.002787 + 0.308797I$ $b = -0.202360 + 1.091070I$	$-9.58964 - 1.76558I$	0
$u = 0.829095 - 0.994657I$ $a = 0.002787 - 0.308797I$ $b = -0.202360 - 1.091070I$	$-9.58964 + 1.76558I$	0
$u = 0.530933 + 0.444057I$ $a = -0.119018 + 0.649917I$ $b = 0.495359 - 0.792874I$	$-1.52903 + 1.30429I$	$-5.12625 - 3.74177I$
$u = 0.530933 - 0.444057I$ $a = -0.119018 - 0.649917I$ $b = 0.495359 + 0.792874I$	$-1.52903 - 1.30429I$	$-5.12625 + 3.74177I$
$u = -1.160010 + 0.608816I$ $a = 0.545323 + 0.459676I$ $b = -0.612716 + 0.220527I$	$1.59454 - 2.41033I$	0
$u = -1.160010 - 0.608816I$ $a = 0.545323 - 0.459676I$ $b = -0.612716 - 0.220527I$	$1.59454 + 2.41033I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.643557 + 0.178198I$ $a = -2.12674 + 2.04600I$ $b = -0.025888 - 0.650354I$	$5.29698 + 3.34950I$	$6.77983 - 1.21808I$
$u = 0.643557 - 0.178198I$ $a = -2.12674 - 2.04600I$ $b = -0.025888 + 0.650354I$	$5.29698 - 3.34950I$	$6.77983 + 1.21808I$
$u = -1.083150 + 0.804487I$ $a = -1.74237 - 0.78537I$ $b = 1.12860 - 1.67159I$	$-6.5812 - 15.8690I$	0
$u = -1.083150 - 0.804487I$ $a = -1.74237 + 0.78537I$ $b = 1.12860 + 1.67159I$	$-6.5812 + 15.8690I$	0
$u = 1.039460 + 0.875271I$ $a = 1.252010 - 0.411170I$ $b = -0.250076 - 1.144770I$	$-8.90185 + 8.59101I$	0
$u = 1.039460 - 0.875271I$ $a = 1.252010 + 0.411170I$ $b = -0.250076 + 1.144770I$	$-8.90185 - 8.59101I$	0
$u = -0.069054 + 0.554266I$ $a = -0.493891 + 0.277556I$ $b = -0.601970 + 0.652027I$	$0.13598 - 1.52625I$	$0.94008 + 4.56682I$
$u = -0.069054 - 0.554266I$ $a = -0.493891 - 0.277556I$ $b = -0.601970 - 0.652027I$	$0.13598 + 1.52625I$	$0.94008 - 4.56682I$
$u = -0.224940 + 0.509809I$ $a = 2.05694 + 0.80981I$ $b = 0.902556 + 0.301696I$	$-2.40873 + 0.49788I$	$-3.19283 + 1.76670I$
$u = -0.224940 - 0.509809I$ $a = 2.05694 - 0.80981I$ $b = 0.902556 - 0.301696I$	$-2.40873 - 0.49788I$	$-3.19283 - 1.76670I$

II.

$$\boldsymbol{I_2^u = \langle -51u^3a^2+106u^3a+\cdots-80a-21,\ -2u^3a^2+u^3a+\cdots-2a-2,\ u^4-u^2+1\rangle}$$

(i) Arc colorings

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

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}a\\0.111597a^2u^3-0.231947au^3+\cdots+0.175055a+0.0459519\end{pmatrix}$$

$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.391685a^2u^3+0.166302au^3+\cdots+0.00656455a-0.485777\\u^3\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.391685a^2u^3+0.166302au^3+\cdots+0.00656455a-0.485777\\u^3\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-0.111597a^2u^3+0.231947au^3+\cdots+0.824945a-0.0459519\\0.0656455a^2u^3-0.312910au^3+\cdots-0.367615a+0.203501\end{pmatrix}$$

$$a_5 = \begin{pmatrix}0.306346a^2u^3-0.126915au^3+\cdots+0.284464a-1.05033\\1\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.256018a^2u^3-0.120350au^3+\cdots+0.166302a-0.306346\\-0.256018a^2u^3+0.120350au^3+\cdots-0.166302a+0.306346\end{pmatrix}$$

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

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

$$a_{10} = \begin{pmatrix}-u^3\\0\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{588}{457}u^3a^2+\frac{272}{457}a^2u^2+\frac{792}{457}u^3a+\frac{400}{457}a^2u+\frac{44}{457}u^2a-\frac{112}{457}u^3-\frac{384}{457}a^2-\frac{688}{457}au-\frac{1428}{457}u^2+\frac{368}{457}a+\frac{1556}{457}u+\frac{2016}{457}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.866025 + 0.500000I$ $a = 1.79596 - 0.63842I$ $b = -0.14373 - 1.45121I$	$4.66906 - 0.79824I$	$5.50976 - 0.48465I$
$u = 0.866025 + 0.500000I$ $a = -2.29105 + 0.88075I$ $b = 0.60113 + 1.32865I$	$4.66906 + 4.85801I$	$5.50976 - 6.44355I$
$u = 0.866025 + 0.500000I$ $a = -1.37094 + 2.98973I$ $b = 3.27465 - 0.87744I$	$0.53148 + 2.02988I$	$-1.01951 - 3.46410I$
$u = 0.866025 - 0.500000I$ $a = 1.79596 + 0.63842I$ $b = -0.14373 + 1.45121I$	$4.66906 + 0.79824I$	$5.50976 + 0.48465I$
$u = 0.866025 - 0.500000I$ $a = -2.29105 - 0.88075I$ $b = 0.60113 - 1.32865I$	$4.66906 - 4.85801I$	$5.50976 + 6.44355I$
$u = 0.866025 - 0.500000I$ $a = -1.37094 - 2.98973I$ $b = 3.27465 + 0.87744I$	$0.53148 - 2.02988I$	$-1.01951 + 3.46410I$
$u = -0.866025 + 0.500000I$ $a = -0.383943 - 0.049811I$ $b = 0.235109 - 0.877439I$	$0.53148 - 2.02988I$	$-1.01951 + 3.46410I$
$u = -0.866025 + 0.500000I$ $a = 0.87835 + 1.41333I$ $b = -0.356011 - 0.161073I$	$4.66906 - 4.85801I$	$5.50976 + 6.44355I$
$u = -0.866025 + 0.500000I$ $a = -0.62838 - 1.59557I$ $b = 0.388851 + 0.038512I$	$4.66906 + 0.79824I$	$5.50976 + 0.48465I$
$u = -0.866025 - 0.500000I$ $a = -0.383943 + 0.049811I$ $b = 0.235109 + 0.877439I$	$0.53148 + 2.02988I$	$-1.01951 - 3.46410I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.866025 - 0.500000I$ $a = 0.87835 - 1.41333I$ $b = -0.356011 + 0.161073I$	$4.66906 + 4.85801I$	$5.50976 - 6.44355I$
$u = -0.866025 - 0.500000I$ $a = -0.62838 + 1.59557I$ $b = 0.388851 - 0.038512I$	$4.66906 - 0.79824I$	$5.50976 - 0.48465I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^3-u^2+2u-1)^4)(u^{60}+35u^{59}+\cdots+64u+1)$
c_2	$((u^3+u^2-1)^4)(u^{60}-5u^{59}+\cdots-16u+1)$
c_3, c_7	$((u^6-3u^4+2u^2+1)^2)(u^{60}-u^{59}+\cdots-4u+1)$
c_4	$((u^3-u^2+1)^4)(u^{60}-5u^{59}+\cdots-16u+1)$
c_5, c_8, c_9	$((u^2+1)^6)(u^{60}-3u^{59}+\cdots-154u+49)$
c_6, c_{11}	$((u^4-u^2+1)^3)(u^{60}-3u^{59}+\cdots-12u+17)$
c_{10}	$((u^2+u+1)^6)(u^{60}-17u^{59}+\cdots-2558u+289)$
c_{12}	$((u^2-u+1)^6)(u^{60}-17u^{59}+\cdots-2558u+289)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^3+3y^2+2y-1)^4)(y^{60}-15y^{59}+\cdots+2064y+1)$
c_2, c_4	$((y^3-y^2+2y-1)^4)(y^{60}-35y^{59}+\cdots-64y+1)$
c_3, c_7	$((y^3-3y^2+2y+1)^4)(y^{60}-15y^{59}+\cdots-40y+1)$
c_5, c_8, c_9	$((y+1)^{12})(y^{60}+21y^{59}+\cdots+34104y+2401)$
c_6, c_{11}	$((y^2-y+1)^6)(y^{60}-17y^{59}+\cdots-2558y+289)$
c_{10}, c_{12}	$((y^2+y+1)^6)(y^{60}+59y^{59}+\cdots-725794y+83521)$