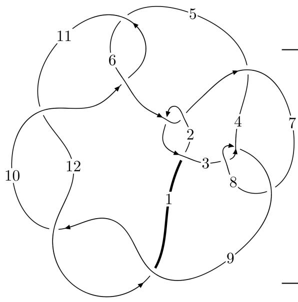
$12n_{0337}$ $(K12n_{0337})$



A knot diagram[1]

Linearized knot diagam

$$\begin{array}{cccccccccccccccccccccccc} \to & \downarrow & \to & \uparrow & \to & \uparrow & \to & \downarrow & \to & \downarrow & \to & \uparrow & \to & \uparrow & \to & \uparrow & \to & \uparrow & \to & \downarrow & \to & \uparrow & \to & \uparrow & \to \\ & 3 & & 6 & & 8 & & 7 & & 11 & & 2 & & 9 & & 4 & & 12 & & 6 & & 10 & & 9 & \end{array}$$

Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 8.75045 \times 10^{28} u^{62} + 5.63839 \times 10^{29} u^{61} + \cdots + 4.42036 \times 10^{29} b + 4.19132 \times 10^{29}, \\ & -8.61586 \times 10^{29} u^{62} + 6.95817 \times 10^{29} u^{61} + \cdots + 2.21018 \times 10^{29} a + 3.02574 \times 10^{30},\ u^{63} - u^{62} + \cdots - 10u - \\ I_2^u = \langle & u^5 b + u^3 b + 2u^2 b + b^2 + 2bu - u^2 - u - 2,\ -u^4 + a - 1,\ u^6 + u^4 + 2u^2 + 1\rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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.

$\boldsymbol{I_1^u = \langle 8.75\times10^{28}u^{62}+5.64\times10^{29}u^{61}+\cdots+4.42\times10^{29}b+4.19\times10^{29},\ -8.62\times10^{29}u^{62}+6.96\times10^{29}u^{61}+\cdots+2.21\times10^{29}a+3.03\times10^{30},\ u^{63}-u^{62}+\cdots-10u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} 3.89826u^{62} - 3.14824u^{61} + \cdots + 86.3365u - 13.6900 \\ -0.197958u^{62} - 1.27555u^{61} + \cdots + 12.6503u - 0.948184 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 3.89826u^{62} - 3.14824u^{61} + \cdots + 86.3365u - 13.6900 \\ -0.929682u^{62} - 1.65830u^{61} + \cdots + 16.2523u - 1.69821 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.53828u^{62} - 0.187645u^{61} + \cdots + 14.1508u - 6.97201 \\ 2.72772u^{62} - 1.67622u^{61} + \cdots + 30.4294u - 4.29057 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^6+u^4+2u^2+1 \\ u^6+u^2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.471410u^{62} - 0.471626u^{61} + \cdots + 16.3283u + 1.49775 \\ -2.28058u^{62} - 0.384216u^{61} + \cdots - 9.13957u + 2.00704 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^4+u^2+1 \\ u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.43450u^{62} - 0.861770u^{61} + \cdots + 27.0832u - 9.69122 \\ 1.91211u^{62} - 0.548333u^{61} + \cdots + 17.6204u - 2.91399 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.06158u^{62} - 4.22142u^{61} + \cdots + 98.6123u - 19.1903$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{63} + 23u^{62} + \cdots - 11050u - 625$
c_2, c_6	$u^{63} - u^{62} + \cdots + 40u - 25$
c_3, c_8	$u^{63} - u^{62} + \cdots + 2u^2 - 1$
c_4	$u^{63} - 3u^{62} + \cdots + 736u - 53$
c_5, c_{10}	$u^{63} + u^{62} + \cdots - 10u - 1$
c_7	$u^{63} - 35u^{62} + \cdots + 4u - 1$
c_9, c_{11}, c_{12}	$u^{63} - 23u^{62} + \cdots + 38u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{63} + 47y^{62} + \cdots - 20571250y - 390625$
c_2, c_6	$y^{63} + 23y^{62} + \cdots - 11050y - 625$
c_3, c_8	$y^{63} - 35y^{62} + \cdots + 4y - 1$
c_4	$y^{63} + 49y^{62} + \cdots + 209280y - 2809$
c_5, c_{10}	$y^{63} + 23y^{62} + \cdots + 38y - 1$
c_7	$y^{63} - 7y^{62} + \cdots + 4y - 1$
c_9, c_{11}, c_{12}	$y^{63} + 39y^{62} + \cdots + 682y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.615481 + 0.782024I$ $a = 0.924724 + 0.192341I$ $b = -0.085512 - 1.194750I$	$-2.81026 - 3.12410I$	$1.80668 + 2.74088I$
$u = 0.615481 - 0.782024I$ $a = 0.924724 - 0.192341I$ $b = -0.085512 + 1.194750I$	$-2.81026 + 3.12410I$	$1.80668 - 2.74088I$
$u = -0.817617 + 0.593503I$ $a = 1.176330 - 0.407742I$ $b = -0.666725 - 0.147698I$	$-0.28869 - 4.27274I$	$0. + 2.20858I$
$u = -0.817617 - 0.593503I$ $a = 1.176330 + 0.407742I$ $b = -0.666725 + 0.147698I$	$-0.28869 + 4.27274I$	$0. - 2.20858I$
$u = -0.822477 + 0.507948I$ $a = -0.501572 - 1.068710I$ $b = 0.080964 - 0.498715I$	$4.20996 - 3.12624I$	$4.99490 + 1.04203I$
$u = -0.822477 - 0.507948I$ $a = -0.501572 + 1.068710I$ $b = 0.080964 + 0.498715I$	$4.20996 + 3.12624I$	$4.99490 - 1.04203I$
$u = -0.654440 + 0.706606I$ $a = 1.004440 - 0.278481I$ $b = -0.521492 + 0.799483I$	$-3.29416 - 2.07147I$	$-0.14477 + 3.47358I$
$u = -0.654440 - 0.706606I$ $a = 1.004440 + 0.278481I$ $b = -0.521492 - 0.799483I$	$-3.29416 + 2.07147I$	$-0.14477 - 3.47358I$
$u = 0.822755 + 0.498425I$ $a = 1.246610 + 0.349007I$ $b = -0.388160 + 0.165493I$	$4.25689 + 0.43803I$	$5.01449 + 0.38960I$
$u = 0.822755 - 0.498425I$ $a = 1.246610 - 0.349007I$ $b = -0.388160 - 0.165493I$	$4.25689 - 0.43803I$	$5.01449 - 0.38960I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.358362 + 0.992150I$ $a = -0.074839 - 0.827034I$ $b = -0.15062 - 1.56941I$	$4.17413 + 3.04921I$	$11.13137 - 4.86659I$
$u = -0.358362 - 0.992150I$ $a = -0.074839 + 0.827034I$ $b = -0.15062 + 1.56941I$	$4.17413 - 3.04921I$	$11.13137 + 4.86659I$
$u = 0.581922 + 0.742342I$ $a = -0.988921 - 0.922896I$ $b = 0.40243 - 1.83245I$	$-2.47100 + 1.06449I$	$2.36761 - 0.85729I$
$u = 0.581922 - 0.742342I$ $a = -0.988921 + 0.922896I$ $b = 0.40243 + 1.83245I$	$-2.47100 - 1.06449I$	$2.36761 + 0.85729I$
$u = 0.867209 + 0.606173I$ $a = 1.202120 + 0.457899I$ $b = -0.693184 + 0.345225I$	$2.65432 + 9.47231I$	$4.00000 - 5.30483I$
$u = 0.867209 - 0.606173I$ $a = 1.202120 - 0.457899I$ $b = -0.693184 - 0.345225I$	$2.65432 - 9.47231I$	$4.00000 + 5.30483I$
$u = 0.142481 + 0.926913I$ $a = 1.282780 - 0.021406I$ $b = 0.772343 - 0.206200I$	$0.767985 + 0.824168I$	$9.41506 + 0.65151I$
$u = 0.142481 - 0.926913I$ $a = 1.282780 + 0.021406I$ $b = 0.772343 + 0.206200I$	$0.767985 - 0.824168I$	$9.41506 - 0.65151I$
$u = -0.700176 + 0.840660I$ $a = -0.765140 + 0.730947I$ $b = 0.23555 + 1.51474I$	$-4.60599 + 2.68345I$	0
$u = -0.700176 - 0.840660I$ $a = -0.765140 - 0.730947I$ $b = 0.23555 - 1.51474I$	$-4.60599 - 2.68345I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.628609 + 0.908068I$ $a = 0.219058 + 0.696182I$ $b = 1.37912 + 1.43255I$	$-2.41121 - 1.77391I$	0
$u = 0.628609 - 0.908068I$ $a = 0.219058 - 0.696182I$ $b = 1.37912 - 1.43255I$	$-2.41121 + 1.77391I$	0
$u = -0.026642 + 0.893006I$ $a = -0.482850 - 0.230070I$ $b = -1.76148 - 0.77429I$	$0.96850 - 2.33689I$	$10.51063 + 3.88561I$
$u = -0.026642 - 0.893006I$ $a = -0.482850 + 0.230070I$ $b = -1.76148 + 0.77429I$	$0.96850 + 2.33689I$	$10.51063 - 3.88561I$
$u = 0.603817 + 0.944430I$ $a = -1.014530 - 0.651522I$ $b = -0.14337 - 1.71884I$	$-1.81973 - 5.79600I$	0
$u = 0.603817 - 0.944430I$ $a = -1.014530 + 0.651522I$ $b = -0.14337 + 1.71884I$	$-1.81973 + 5.79600I$	0
$u = 0.052552 + 1.129890I$ $a = -0.775773 - 0.796782I$ $b = -1.07864 - 2.15641I$	$5.89708 - 3.19125I$	0
$u = 0.052552 - 1.129890I$ $a = -0.775773 + 0.796782I$ $b = -1.07864 + 2.15641I$	$5.89708 + 3.19125I$	0
$u = -0.767293 + 0.838686I$ $a = -0.536133 + 0.727624I$ $b = 0.38652 + 1.38050I$	$-4.75625 + 2.66334I$	0
$u = -0.767293 - 0.838686I$ $a = -0.536133 - 0.727624I$ $b = 0.38652 - 1.38050I$	$-4.75625 - 2.66334I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.791545 + 0.338366I$ $a = -0.47232 - 1.36375I$ $b = 0.146940 - 0.685183I$	$4.21373 + 5.84305I$	$4.20006 - 5.43025I$
$u = -0.791545 - 0.338366I$ $a = -0.47232 + 1.36375I$ $b = 0.146940 + 0.685183I$	$4.21373 - 5.84305I$	$4.20006 + 5.43025I$
$u = -0.641851 + 0.958734I$ $a = 0.290568 - 0.785458I$ $b = 1.28323 - 2.11096I$	$-2.52965 + 7.13795I$	0
$u = -0.641851 - 0.958734I$ $a = 0.290568 + 0.785458I$ $b = 1.28323 + 2.11096I$	$-2.52965 - 7.13795I$	0
$u = 0.706658 + 0.446411I$ $a = -0.295145 + 1.196460I$ $b = 0.201963 + 0.567576I$	$0.70382 - 1.36878I$	$1.16247 + 2.76782I$
$u = 0.706658 - 0.446411I$ $a = -0.295145 - 1.196460I$ $b = 0.201963 - 0.567576I$	$0.70382 + 1.36878I$	$1.16247 - 2.76782I$
$u = -0.096687 + 1.163890I$ $a = -0.845889 + 0.838885I$ $b = -1.03193 + 2.21147I$	$9.39173 + 8.34057I$	0
$u = -0.096687 - 1.163890I$ $a = -0.845889 - 0.838885I$ $b = -1.03193 - 2.21147I$	$9.39173 - 8.34057I$	0
$u = 0.003658 + 1.168730I$ $a = -0.699048 + 0.871689I$ $b = -0.99139 + 2.10096I$	$10.19250 - 1.37204I$	0
$u = 0.003658 - 1.168730I$ $a = -0.699048 - 0.871689I$ $b = -0.99139 - 2.10096I$	$10.19250 + 1.37204I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.796964 + 0.882251I$ $a = -0.538356 - 0.100627I$ $b = 0.233347 - 0.784599I$	$-3.04388 - 0.13688I$	0
$u = 0.796964 - 0.882251I$ $a = -0.538356 + 0.100627I$ $b = 0.233347 + 0.784599I$	$-3.04388 + 0.13688I$	0
$u = -0.752341 + 0.920918I$ $a = -0.786716 + 0.409689I$ $b = 0.013060 + 1.198020I$	$-4.50104 + 3.08347I$	0
$u = -0.752341 - 0.920918I$ $a = -0.786716 - 0.409689I$ $b = 0.013060 - 1.198020I$	$-4.50104 - 3.08347I$	0
$u = 0.804318 + 0.888939I$ $a = -0.159292 - 0.605167I$ $b = 0.615657 - 1.226000I$	$-3.02941 - 5.85741I$	0
$u = 0.804318 - 0.888939I$ $a = -0.159292 + 0.605167I$ $b = 0.615657 + 1.226000I$	$-3.02941 + 5.85741I$	0
$u = 0.617710 + 1.047470I$ $a = 0.859697 - 0.364923I$ $b = 0.97715 - 1.06171I$	$2.35789 - 3.68565I$	0
$u = 0.617710 - 1.047470I$ $a = 0.859697 + 0.364923I$ $b = 0.97715 + 1.06171I$	$2.35789 + 3.68565I$	0
$u = -0.567021 + 1.085240I$ $a = 0.986354 + 0.368127I$ $b = 1.018770 + 0.967931I$	$6.42352 - 0.87285I$	0
$u = -0.567021 - 1.085240I$ $a = 0.986354 - 0.368127I$ $b = 1.018770 - 0.967931I$	$6.42352 + 0.87285I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.688188 + 1.054390I$ $a = 0.386516 - 0.981629I$ $b = 0.54971 - 2.74649I$	$1.09750 + 9.92639I$	0
$u = -0.688188 - 1.054390I$ $a = 0.386516 + 0.981629I$ $b = 0.54971 + 2.74649I$	$1.09750 - 9.92639I$	0
$u = 0.650788 + 1.081400I$ $a = 0.309480 + 1.022320I$ $b = 0.43116 + 2.53815I$	$5.99769 - 5.93570I$	0
$u = 0.650788 - 1.081400I$ $a = 0.309480 - 1.022320I$ $b = 0.43116 - 2.53815I$	$5.99769 + 5.93570I$	0
$u = -0.655982 + 1.078790I$ $a = 0.836188 + 0.475018I$ $b = 1.03372 + 1.10446I$	$5.91225 + 8.64566I$	0
$u = -0.655982 - 1.078790I$ $a = 0.836188 - 0.475018I$ $b = 1.03372 - 1.10446I$	$5.91225 - 8.64566I$	0
$u = 0.314549 + 0.662120I$ $a = 0.218311 + 0.670532I$ $b = -0.011835 + 0.612906I$	$0.267822 - 1.158260I$	$3.61517 + 5.66198I$
$u = 0.314549 - 0.662120I$ $a = 0.218311 - 0.670532I$ $b = -0.011835 - 0.612906I$	$0.267822 + 1.158260I$	$3.61517 - 5.66198I$
$u = 0.710541 + 1.068660I$ $a = 0.425206 + 1.016740I$ $b = 0.42500 + 2.83258I$	$4.0664 - 15.3392I$	0
$u = 0.710541 - 1.068660I$ $a = 0.425206 - 1.016740I$ $b = 0.42500 - 2.83258I$	$4.0664 + 15.3392I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.516415$ $a=\quad 1.18250$ $b=-0.0216347$	1.52695	6.20940
$u=\quad 0.178816+0.052588I$ $a=\quad 0.97689+5.20866I$ $b=\quad 0.848518+0.314174I$	$-1.74489-2.05954I$	$-4.07565+4.15680I$
$u=\quad 0.178816-0.052588I$ $a=\quad 0.97689-5.20866I$ $b=\quad 0.848518-0.314174I$	$-1.74489+2.05954I$	$-4.07565-4.15680I$

II.

$$\boldsymbol{I^u_2 = \langle u^5b + u^3b + 2u^2b + b^2 + 2bu - u^2 - u - 2,\ -u^4 + a - 1,\ u^6 + u^4 + 2u^2 + 1\rangle}$$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} u^4 + 1 \\ b \end{pmatrix}$$

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

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

$$a_7 = \begin{pmatrix} u^5 + u^3 + 2u \\ u^5b + bu \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0 \\ -u^4 - u^2 - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^5b - u^5 - u^3 + bu \\ -u^3b + 2u^3 + u^2 + b + 3u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^4 + u^2 + 1 \\ u^4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5b + u^5 + u^3b + bu + u \\ 2u^5b - u^5 - 2u^3 + bu - u \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u^4 - 4u^3 - 4bu + 4u^2 + 8$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.744862 + 0.877439I$ $a = -0.662359 - 0.562280I$ $b = 1.06984 - 1.15137I$	$-4.66906 - 0.79824I$	$-1.50976 - 0.48465I$
$u = 0.744862 + 0.877439I$ $a = -0.662359 - 0.562280I$ $b = -0.07740 - 2.12527I$	$-4.66906 - 4.85801I$	$-1.50976 + 6.44355I$
$u = 0.744862 - 0.877439I$ $a = -0.662359 + 0.562280I$ $b = 1.06984 + 1.15137I$	$-4.66906 + 0.79824I$	$-1.50976 + 0.48465I$
$u = 0.744862 - 0.877439I$ $a = -0.662359 + 0.562280I$ $b = -0.07740 + 2.12527I$	$-4.66906 + 4.85801I$	$-1.50976 - 6.44355I$
$u = -0.744862 + 0.877439I$ $a = -0.662359 + 0.562280I$ $b = 0.507560 + 0.489013I$	$-4.66906 + 4.85801I$	$-1.50976 - 6.44355I$
$u = -0.744862 + 0.877439I$ $a = -0.662359 + 0.562280I$ $b = -0.63968 + 1.46291I$	$-4.66906 + 0.79824I$	$-1.50976 + 0.48465I$
$u = -0.744862 - 0.877439I$ $a = -0.662359 - 0.562280I$ $b = 0.507560 - 0.489013I$	$-4.66906 - 4.85801I$	$-1.50976 + 6.44355I$
$u = -0.744862 - 0.877439I$ $a = -0.662359 - 0.562280I$ $b = -0.63968 - 1.46291I$	$-4.66906 - 0.79824I$	$-1.50976 - 0.48465I$
$u = 0.754878I$ $a = 1.32472$ $b = -0.577399 - 0.662359I$	$-0.53148 - 2.02988I$	$5.01951 + 3.46410I$
$u = 0.754878I$ $a = 1.32472$ $b = 1.71708 - 0.66236I$	$-0.53148 + 2.02988I$	$5.01951 - 3.46410I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad\quad - 0.754878I$ $a = \quad 1.32472$ $b = -0.577399 + 0.662359I$	$-0.53148 + 2.02988I$	$5.01951 - 3.46410I$
$u = \quad\quad - 0.754878I$ $a = \quad 1.32472$ $b = \quad 1.71708 + 0.66236I$	$-0.53148 - 2.02988I$	$5.01951 + 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^{12})(u^{63}+23u^{62}+\cdots-11050u-625)$
c_2, c_6	$((u^2+1)^6)(u^{63}-u^{62}+\cdots+40u-25)$
c_3, c_8	$((u^4-u^2+1)^3)(u^{63}-u^{62}+\cdots+2u^2-1)$
c_4	$((u^4-u^2+1)^3)(u^{63}-3u^{62}+\cdots+736u-53)$
c_5, c_{10}	$((u^6+u^4+2u^2+1)^2)(u^{63}+u^{62}+\cdots-10u-1)$
c_7	$((u^2+u+1)^6)(u^{63}-35u^{62}+\cdots+4u-1)$
c_9	$((u^3+u^2+2u+1)^4)(u^{63}-23u^{62}+\cdots+38u+1)$
c_{11}, c_{12}	$((u^3-u^2+2u-1)^4)(u^{63}-23u^{62}+\cdots+38u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^{12})(y^{63}+47y^{62}+\cdots-2.05713\times 10^7 y-390625)$
c_2, c_6	$((y+1)^{12})(y^{63}+23y^{62}+\cdots-11050y-625)$
c_3, c_8	$((y^2-y+1)^6)(y^{63}-35y^{62}+\cdots+4y-1)$
c_4	$((y^2-y+1)^6)(y^{63}+49y^{62}+\cdots+209280y-2809)$
c_5, c_{10}	$((y^3+y^2+2y+1)^4)(y^{63}+23y^{62}+\cdots+38y-1)$
c_7	$((y^2+y+1)^6)(y^{63}-7y^{62}+\cdots+4y-1)$
c_9, c_{11}, c_{12}	$((y^3+3y^2+2y-1)^4)(y^{63}+39y^{62}+\cdots+682y-1)$