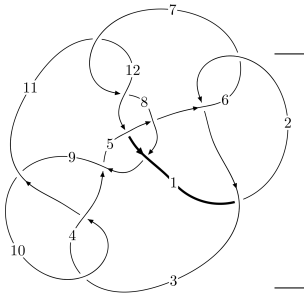
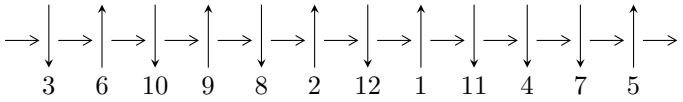
$12a_{0451}$ $(K12a_{0451})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 2.15850 \times 10^{215} u^{141} + 1.12135 \times 10^{215} u^{140} + \cdots + 1.47358 \times 10^{214} b + 4.27986 \times 10^{215}, \\
&\quad - 1.02103 \times 10^{216} u^{141} - 3.98145 \times 10^{215} u^{140} + \cdots + 1.47358 \times 10^{214} a - 1.65816 \times 10^{216}, \\
&\quad u^{142} + u^{141} + \cdots + 2u + 1 \rangle \\
I_2^u &= \langle -5u^{29} + 37u^{27} + \cdots + b + 1,\ u^{29} - 6u^{28} + \cdots + a + 16,\ u^{30} - 8u^{28} + \cdots - 6u^2 + 1 \rangle \\
I_3^u &= \langle -u^2 + b,\ u^2 + a - 1,\ u^9 - u^7 + u^5 + u - 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 181 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. $\boldsymbol{I_1^u = \langle 2.16 \times 10^{215} u^{141} + 1.12 \times 10^{215} u^{140} + \cdots + 1.47 \times 10^{214} b + 4.28 \times 10^{215},\ -1.02 \times 10^{216} u^{141} - 3.98 \times 10^{215} u^{140} + \cdots + 1.47 \times 10^{214} a - 1.66 \times 10^{216},\ u^{142} + u^{141} + \cdots + 2u + 1 \rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 69.2888u^{141} + 27.0189u^{140} + \cdots + 60.3781u + 112.526 \\ -14.6480u^{141} - 7.60972u^{140} + \cdots - 3.77923u - 29.0439 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 98.5271u^{141} + 51.8440u^{140} + \cdots - 20.6958u + 209.268 \\ -15.8723u^{141} - 9.69013u^{140} + \cdots + 8.74357u - 36.7595 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 70.6230u^{141} + 32.6381u^{140} + \cdots + 24.8012u + 130.839 \\ -3.19139u^{141} - 1.99522u^{140} + \cdots + 1.36837u - 7.21709 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -105.596u^{141} - 54.7390u^{140} + \cdots + 20.3905u - 221.860 \\ 14.8864u^{141} + 8.90364u^{140} + \cdots - 7.43228u + 33.9364 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 82.6547u^{141} + 42.1539u^{140} + \cdots - 11.9522u + 172.509 \\ -15.8723u^{141} - 9.69013u^{140} + \cdots + 8.74357u - 36.7595 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -12.2390u^{141} - 10.0968u^{140} + \cdots + 43.9408u - 42.9882 \\ -12.0821u^{141} - 4.24533u^{140} + \cdots - 5.97197u - 18.4046 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 5.34809u^{141} + 4.05326u^{140} + \cdots - 19.7693u + 23.7811$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{142} + 68u^{141} + \cdots + 45485023u + 1940449$
c_2, c_6	$u^{142} - 2u^{141} + \cdots + 793u + 1393$
c_3, c_{10}	$u^{142} - u^{141} + \cdots - 2u + 1$
c_4	$u^{142} - 3u^{141} + \cdots - 3417185u + 423016$
c_5	$u^{142} - 9u^{141} + \cdots - 48u + 1$
c_7, c_{11}	$u^{142} - 10u^{141} + \cdots - 1373392u + 119344$
c_8	$u^{142} - 5u^{141} + \cdots + 1486u + 347$
c_9	$u^{142} + 75u^{141} + \cdots + 12u + 1$
c_{12}	$u^{142} - u^{141} + \cdots - 68944u + 61373$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{142} + 28y^{141} + \cdots + 136799040774219y + 3765342321601$
c_2, c_6	$y^{142} + 68y^{141} + \cdots + 45485023y + 1940449$
c_3, c_{10}	$y^{142} - 75y^{141} + \cdots - 12y + 1$
c_4	$y^{142} + 81y^{141} + \cdots - 614480347793y + 178942536256$
c_5	$y^{142} - 11y^{141} + \cdots - 96y + 1$
c_7, c_{11}	$y^{142} - 98y^{141} + \cdots - 733475256192y + 14242990336$
c_8	$y^{142} + 17y^{141} + \cdots + 8068556y + 120409$
c_9	$y^{142} - 3y^{141} + \cdots - 56y + 1$
c_{12}	$y^{142} + 37y^{141} + \cdots + 186760312142y + 3766645129$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.819925 + 0.573197I$ $a = 0.879246 + 0.964168I$ $b = -0.686532 - 0.919738I$	$2.90346 + 1.92369I$	0
$u = 0.819925 - 0.573197I$ $a = 0.879246 - 0.964168I$ $b = -0.686532 + 0.919738I$	$2.90346 - 1.92369I$	0
$u = -0.998317 + 0.162663I$ $a = 0.15234 + 1.72026I$ $b = 0.429286 + 0.749945I$	$-1.98733 + 4.15694I$	0
$u = -0.998317 - 0.162663I$ $a = 0.15234 - 1.72026I$ $b = 0.429286 - 0.749945I$	$-1.98733 - 4.15694I$	0
$u = 0.983094 + 0.270642I$ $a = 0.329558 + 0.164084I$ $b = 0.379901 + 0.532584I$	$-1.85848 - 0.87645I$	0
$u = 0.983094 - 0.270642I$ $a = 0.329558 - 0.164084I$ $b = 0.379901 - 0.532584I$	$-1.85848 + 0.87645I$	0
$u = -0.336460 + 0.966769I$ $a = 1.40956 - 0.63858I$ $b = -0.552563 + 1.026870I$	$-3.12233 - 4.55892I$	0
$u = -0.336460 - 0.966769I$ $a = 1.40956 + 0.63858I$ $b = -0.552563 - 1.026870I$	$-3.12233 + 4.55892I$	0
$u = 0.769689 + 0.689370I$ $a = -1.24009 - 0.71557I$ $b = 0.760360 + 0.502335I$	$1.41703 - 6.24375I$	0
$u = 0.769689 - 0.689370I$ $a = -1.24009 + 0.71557I$ $b = 0.760360 - 0.502335I$	$1.41703 + 6.24375I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.752662 + 0.593812I$ $a = -2.39364 - 0.09867I$ $b = 0.661817 - 0.973208I$	$3.09116 - 6.54197I$	0
$u = 0.752662 - 0.593812I$ $a = -2.39364 + 0.09867I$ $b = 0.661817 + 0.973208I$	$3.09116 + 6.54197I$	0
$u = -0.102308 + 1.037670I$ $a = 0.804635 + 0.252765I$ $b = -0.341980 - 0.947064I$	$-4.69706 + 1.29869I$	0
$u = -0.102308 - 1.037670I$ $a = 0.804635 - 0.252765I$ $b = -0.341980 + 0.947064I$	$-4.69706 - 1.29869I$	0
$u = -0.886405 + 0.577385I$ $a = 1.92287 + 0.05036I$ $b = -0.710853 - 0.743340I$	$3.41659 + 3.40993I$	0
$u = -0.886405 - 0.577385I$ $a = 1.92287 - 0.05036I$ $b = -0.710853 + 0.743340I$	$3.41659 - 3.40993I$	0
$u = 0.827768 + 0.692948I$ $a = 1.78087 + 0.30538I$ $b = -0.626794 + 0.564260I$	$1.26246 + 1.00442I$	0
$u = 0.827768 - 0.692948I$ $a = 1.78087 - 0.30538I$ $b = -0.626794 - 0.564260I$	$1.26246 - 1.00442I$	0
$u = -0.262097 + 0.881582I$ $a = -1.56596 + 0.44079I$ $b = 0.647747 - 1.172540I$	$-3.7320 - 14.3288I$	0
$u = -0.262097 - 0.881582I$ $a = -1.56596 - 0.44079I$ $b = 0.647747 + 1.172540I$	$-3.7320 + 14.3288I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.675824+0.615061I$ $a=-0.95501+1.31977I$ $b=\ \ 0.714573-0.655402I$	$4.02613+1.27883I$	0
$u=-0.675824-0.615061I$ $a=-0.95501-1.31977I$ $b=\ \ 0.714573+0.655402I$	$4.02613-1.27883I$	0
$u=\ \ 0.981739+0.467961I$ $a=-0.83111+2.10000I$ $b=-0.290470-0.855232I$	$-4.11806+0.96122I$	0
$u=\ \ 0.981739-0.467961I$ $a=-0.83111-2.10000I$ $b=-0.290470+0.855232I$	$-4.11806-0.96122I$	0
$u=-1.061260+0.329465I$ $a=\ \ 0.516163-1.058550I$ $b=\ \ 0.471837-1.310330I$	$-5.43261-3.34267I$	0
$u=-1.061260-0.329465I$ $a=\ \ 0.516163+1.058550I$ $b=\ \ 0.471837+1.310330I$	$-5.43261+3.34267I$	0
$u=-0.825572+0.325567I$ $a=-0.102107-0.515957I$ $b=-0.239822-1.224430I$	$-4.72518+5.65170I$	0
$u=-0.825572-0.325567I$ $a=-0.102107+0.515957I$ $b=-0.239822+1.224430I$	$-4.72518-5.65170I$	0
$u=-0.835490+0.753017I$ $a=-1.91088-0.30285I$ $b=\ \ 0.606604+1.064330I$	$-0.26999+11.42200I$	0
$u=-0.835490-0.753017I$ $a=-1.91088+0.30285I$ $b=\ \ 0.606604-1.064330I$	$-0.26999-11.42200I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.796220+0.800451I$ $a=\ \ 0.638727-0.980874I$ $b=-0.560690+1.022220I$	$-0.12297-5.68905I$	0
$u=-0.796220-0.800451I$ $a=\ \ 0.638727+0.980874I$ $b=-0.560690-1.022220I$	$-0.12297+5.68905I$	0
$u=\ \ 0.265127+0.826576I$ $a=-1.42559+0.49190I$ $b=\ \ 0.950982-0.387299I$	$-1.32824+8.51203I$	0
$u=\ \ 0.265127-0.826576I$ $a=-1.42559-0.49190I$ $b=\ \ 0.950982+0.387299I$	$-1.32824-8.51203I$	0
$u=\ \ 1.038220+0.468696I$ $a=\ \ 0.143061-0.914417I$ $b=\ \ 0.907283+0.353856I$	$-0.461214-1.205920I$	0
$u=\ \ 1.038220-0.468696I$ $a=\ \ 0.143061+0.914417I$ $b=\ \ 0.907283-0.353856I$	$-0.461214+1.205920I$	0
$u=\ \ 0.357950+0.775515I$ $a=\ \ 1.41875+0.05983I$ $b=-0.335547-0.925700I$	$-1.48529+2.74039I$	0
$u=\ \ 0.357950-0.775515I$ $a=\ \ 1.41875-0.05983I$ $b=-0.335547+0.925700I$	$-1.48529-2.74039I$	0
$u=-1.120770+0.262113I$ $a=-0.22224-1.55747I$ $b=\ \ 0.165035-1.029870I$	$-5.95469-0.06109I$	0
$u=-1.120770-0.262113I$ $a=-0.22224+1.55747I$ $b=\ \ 0.165035+1.029870I$	$-5.95469+0.06109I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.120430 + 0.285920I$ $a = 0.030486 + 0.400743I$ $b = -0.547562 + 0.446101I$	$-1.94419 + 0.00486I$	0
$u = 1.120430 - 0.285920I$ $a = 0.030486 - 0.400743I$ $b = -0.547562 - 0.446101I$	$-1.94419 - 0.00486I$	0
$u = 0.587273 + 0.586722I$ $a = 1.68540 - 0.81948I$ $b = -0.631334 + 1.116390I$	$-0.58161 - 4.44960I$	$0. + 7.84954I$
$u = 0.587273 - 0.586722I$ $a = 1.68540 + 0.81948I$ $b = -0.631334 - 1.116390I$	$-0.58161 + 4.44960I$	$0. - 7.84954I$
$u = -1.058660 + 0.516485I$ $a = -0.598797 + 1.113080I$ $b = 0.876245 - 0.001895I$	$0.01537 + 5.05199I$	0
$u = -1.058660 - 0.516485I$ $a = -0.598797 - 1.113080I$ $b = 0.876245 + 0.001895I$	$0.01537 - 5.05199I$	0
$u = 0.219678 + 0.781394I$ $a = -1.59503 + 0.21320I$ $b = 0.582661 + 1.058010I$	$0.56062 + 7.88617I$	$-2.00000 - 7.64027I$
$u = 0.219678 - 0.781394I$ $a = -1.59503 - 0.21320I$ $b = 0.582661 - 1.058010I$	$0.56062 - 7.88617I$	$-2.00000 + 7.64027I$
$u = -0.810891 + 0.018995I$ $a = -0.44839 + 2.20459I$ $b = 0.442563 + 1.132130I$	$-4.66414 + 3.91640I$	$-11.24169 + 0.I$
$u = -0.810891 - 0.018995I$ $a = -0.44839 - 2.20459I$ $b = 0.442563 - 1.132130I$	$-4.66414 - 3.91640I$	$-11.24169 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.106370+0.437420I$ $a=\ \ 2.29478-2.07878I$ $b=-0.380770-0.983522I$	$-4.77162+1.80859I$	0
$u=-1.106370-0.437420I$ $a=\ \ 2.29478+2.07878I$ $b=-0.380770+0.983522I$	$-4.77162-1.80859I$	0
$u=-1.061380+0.538697I$ $a=-1.18916+0.82215I$ $b=\ \ 0.782131+0.441989I$	$-0.10586+5.44582I$	0
$u=-1.061380-0.538697I$ $a=-1.18916-0.82215I$ $b=\ \ 0.782131-0.441989I$	$-0.10586-5.44582I$	0
$u=-1.124720+0.396145I$ $a=\ \ 0.693007+0.740985I$ $b=-0.539884+1.115230I$	$-7.31755-1.87859I$	0
$u=-1.124720-0.396145I$ $a=\ \ 0.693007-0.740985I$ $b=-0.539884-1.115230I$	$-7.31755+1.87859I$	0
$u=\ \ 1.120490+0.414286I$ $a=\ \ 0.431652+0.605235I$ $b=\ \ 0.452609+1.065390I$	$-3.01714-0.96511I$	0
$u=\ \ 1.120490-0.414286I$ $a=\ \ 0.431652-0.605235I$ $b=\ \ 0.452609-1.065390I$	$-3.01714+0.96511I$	0
$u=\ \ 1.101160+0.477897I$ $a=-1.59513-0.83858I$ $b=\ \ 1.065770-0.832707I$	$-1.30656-7.29187I$	0
$u=\ \ 1.101160-0.477897I$ $a=-1.59513+0.83858I$ $b=\ \ 1.065770+0.832707I$	$-1.30656+7.29187I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.146851+0.783292I$ $a=-0.306003-0.486855I$ $b=\ \ 0.100720+1.339030I$	$-7.52306-5.15147I$	$-7.08476+4.50382I$
$u=-0.146851-0.783292I$ $a=-0.306003+0.486855I$ $b=\ \ 0.100720-1.339030I$	$-7.52306+5.15147I$	$-7.08476-4.50382I$
$u=-1.118420+0.447051I$ $a=\ \ 0.38796-1.51839I$ $b=-0.672384+0.533733I$	$-5.05939+4.74367I$	0
$u=-1.118420-0.447051I$ $a=\ \ 0.38796+1.51839I$ $b=-0.672384-0.533733I$	$-5.05939-4.74367I$	0
$u=-0.284485+0.740309I$ $a=-0.781132-0.751379I$ $b=\ \ 0.692387+0.481448I$	$2.26299-2.95719I$	$2.44235+2.41736I$
$u=-0.284485-0.740309I$ $a=-0.781132+0.751379I$ $b=\ \ 0.692387-0.481448I$	$2.26299+2.95719I$	$2.44235-2.41736I$
$u=\ \ 1.115220+0.468441I$ $a=-0.55244-1.56579I$ $b=-0.242606-1.060950I$	$-4.53390-5.70007I$	0
$u=\ \ 1.115220-0.468441I$ $a=-0.55244+1.56579I$ $b=-0.242606+1.060950I$	$-4.53390+5.70007I$	0
$u=\ \ 0.044027+0.788764I$ $a=\ \ 0.147867-0.134067I$ $b=\ \ 0.327426-0.992104I$	$-5.35872-1.03966I$	$-10.97184+1.37054I$
$u=\ \ 0.044027-0.788764I$ $a=\ \ 0.147867+0.134067I$ $b=\ \ 0.327426+0.992104I$	$-5.35872+1.03966I$	$-10.97184-1.37054I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.124070 + 0.450929I$ $a = 0.582151 - 0.061219I$ $b = -0.719681 + 0.339253I$	$-5.01892 - 2.92665I$	0
$u = 1.124070 - 0.450929I$ $a = 0.582151 + 0.061219I$ $b = -0.719681 - 0.339253I$	$-5.01892 + 2.92665I$	0
$u = -1.030980 + 0.639248I$ $a = -0.066615 + 0.964674I$ $b = 0.256363 - 0.901271I$	$-3.06581 + 5.46183I$	0
$u = -1.030980 - 0.639248I$ $a = -0.066615 - 0.964674I$ $b = 0.256363 + 0.901271I$	$-3.06581 - 5.46183I$	0
$u = -1.183630 + 0.278653I$ $a = -0.862551 + 0.065500I$ $b = 0.645704 + 0.218716I$	$-6.27261 + 3.16463I$	0
$u = -1.183630 - 0.278653I$ $a = -0.862551 - 0.065500I$ $b = 0.645704 - 0.218716I$	$-6.27261 - 3.16463I$	0
$u = -1.127760 + 0.468002I$ $a = -1.73382 + 1.41012I$ $b = 0.627158 + 1.114120I$	$-2.64743 + 6.77904I$	0
$u = -1.127760 - 0.468002I$ $a = -1.73382 - 1.41012I$ $b = 0.627158 - 1.114120I$	$-2.64743 - 6.77904I$	0
$u = -1.182600 + 0.328583I$ $a = 0.040553 + 1.247040I$ $b = -0.523046 + 1.043670I$	$-3.66226 - 4.36716I$	0
$u = -1.182600 - 0.328583I$ $a = 0.040553 - 1.247040I$ $b = -0.523046 - 1.043670I$	$-3.66226 + 4.36716I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.112390 + 0.534778I$ $a = -2.25516 - 1.06311I$ $b = 0.61062 - 1.32428I$	$-3.95389 - 10.65120I$	0
$u = 1.112390 - 0.534778I$ $a = -2.25516 + 1.06311I$ $b = 0.61062 + 1.32428I$	$-3.95389 + 10.65120I$	0
$u = 1.132030 + 0.495273I$ $a = 2.78786 + 0.82100I$ $b = -0.586312 + 1.047710I$	$-6.60530 - 9.65736I$	0
$u = 1.132030 - 0.495273I$ $a = 2.78786 - 0.82100I$ $b = -0.586312 - 1.047710I$	$-6.60530 + 9.65736I$	0
$u = -1.206510 + 0.271984I$ $a = 0.438591 - 0.468643I$ $b = -0.927115 - 0.288564I$	$-6.00510 - 5.09569I$	0
$u = -1.206510 - 0.271984I$ $a = 0.438591 + 0.468643I$ $b = -0.927115 + 0.288564I$	$-6.00510 + 5.09569I$	0
$u = -0.420856 + 0.623086I$ $a = 1.302530 - 0.322364I$ $b = -0.732698 + 0.315993I$	$1.74958 - 0.85826I$	$4.53301 - 0.84557I$
$u = -0.420856 - 0.623086I$ $a = 1.302530 + 0.322364I$ $b = -0.732698 - 0.315993I$	$1.74958 + 0.85826I$	$4.53301 + 0.84557I$
$u = 0.316242 + 0.681335I$ $a = 1.51703 + 0.62075I$ $b = -0.599099 - 1.263720I$	$-1.64838 + 5.95849I$	$-1.86023 - 9.97228I$
$u = 0.316242 - 0.681335I$ $a = 1.51703 - 0.62075I$ $b = -0.599099 + 1.263720I$	$-1.64838 - 5.95849I$	$-1.86023 + 9.97228I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.204550 + 0.360848I$ $a = 1.10979 + 1.04467I$ $b = -0.192669 + 1.340680I$	$-11.58090 + 1.28812I$	0
$u = 1.204550 - 0.360848I$ $a = 1.10979 - 1.04467I$ $b = -0.192669 - 1.340680I$	$-11.58090 - 1.28812I$	0
$u = -1.134450 + 0.543154I$ $a = -0.123964 - 0.975497I$ $b = -0.722111 + 0.415523I$	$-0.21897 + 7.80995I$	0
$u = -1.134450 - 0.543154I$ $a = -0.123964 + 0.975497I$ $b = -0.722111 - 0.415523I$	$-0.21897 - 7.80995I$	0
$u = -0.435709 + 0.592879I$ $a = 1.350760 + 0.182256I$ $b = -0.785767 - 0.088874I$	$1.83512 - 0.62347I$	$6.22978 + 1.16653I$
$u = -0.435709 - 0.592879I$ $a = 1.350760 - 0.182256I$ $b = -0.785767 + 0.088874I$	$1.83512 + 0.62347I$	$6.22978 - 1.16653I$
$u = 1.133490 + 0.572512I$ $a = -2.03687 - 0.98690I$ $b = 0.365310 - 1.019860I$	$-3.80710 - 7.83125I$	0
$u = 1.133490 - 0.572512I$ $a = -2.03687 + 0.98690I$ $b = 0.365310 + 1.019860I$	$-3.80710 + 7.83125I$	0
$u = 0.578025 + 0.442992I$ $a = -2.22702 + 2.71668I$ $b = 0.418703 - 0.936982I$	$-2.89762 - 4.84473I$	$-4.45896 + 8.40432I$
$u = 0.578025 - 0.442992I$ $a = -2.22702 - 2.71668I$ $b = 0.418703 + 0.936982I$	$-2.89762 + 4.84473I$	$-4.45896 - 8.40432I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.638347 + 0.344624I$ $a = 1.128900 + 0.503530I$ $b = -0.038917 + 0.902501I$	$-1.20928 - 1.53546I$	$-3.16332 + 5.13059I$
$u = 0.638347 - 0.344624I$ $a = 1.128900 - 0.503530I$ $b = -0.038917 - 0.902501I$	$-1.20928 + 1.53546I$	$-3.16332 - 5.13059I$
$u = 1.268260 + 0.172146I$ $a = -0.550571 + 0.487520I$ $b = 0.470552 + 1.105120I$	$-8.85021 + 1.09012I$	0
$u = 1.268260 - 0.172146I$ $a = -0.550571 - 0.487520I$ $b = 0.470552 - 1.105120I$	$-8.85021 - 1.09012I$	0
$u = -1.203140 + 0.436543I$ $a = 0.46505 - 1.38480I$ $b = -0.302401 - 1.041580I$	$-9.00666 + 5.34263I$	0
$u = -1.203140 - 0.436543I$ $a = 0.46505 + 1.38480I$ $b = -0.302401 + 1.041580I$	$-9.00666 - 5.34263I$	0
$u = -1.177010 + 0.511932I$ $a = -1.056080 + 0.529663I$ $b = -0.096574 + 1.406160I$	$-10.5281 + 9.9181I$	0
$u = -1.177010 - 0.511932I$ $a = -1.056080 - 0.529663I$ $b = -0.096574 - 1.406160I$	$-10.5281 - 9.9181I$	0
$u = 1.166720 + 0.535906I$ $a = 2.03104 + 1.48485I$ $b = -0.578682 + 1.093820I$	$-2.21982 - 12.79480I$	0
$u = 1.166720 - 0.535906I$ $a = 2.03104 - 1.48485I$ $b = -0.578682 - 1.093820I$	$-2.21982 + 12.79480I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.261150 + 0.262650I$ $a = 0.256746 - 0.677907I$ $b = -0.602673 - 1.185480I$	$-8.71799 + 10.63660I$	0
$u = 1.261150 - 0.262650I$ $a = 0.256746 + 0.677907I$ $b = -0.602673 + 1.185480I$	$-8.71799 - 10.63660I$	0
$u = 1.206220 + 0.470147I$ $a = -1.145850 - 0.708872I$ $b = -0.285763 - 0.968912I$	$-8.77226 - 3.52818I$	0
$u = 1.206220 - 0.470147I$ $a = -1.145850 + 0.708872I$ $b = -0.285763 + 0.968912I$	$-8.77226 + 3.52818I$	0
$u = 1.168320 + 0.562737I$ $a = 0.378377 + 1.120870I$ $b = -1.004580 - 0.384344I$	$-4.0150 - 13.6539I$	0
$u = 1.168320 - 0.562737I$ $a = 0.378377 - 1.120870I$ $b = -1.004580 + 0.384344I$	$-4.0150 + 13.6539I$	0
$u = 1.165290 + 0.572245I$ $a = -0.548802 - 0.853736I$ $b = 0.720267 + 0.515487I$	$-4.21037 - 5.21554I$	0
$u = 1.165290 - 0.572245I$ $a = -0.548802 + 0.853736I$ $b = 0.720267 - 0.515487I$	$-4.21037 + 5.21554I$	0
$u = -1.188740 + 0.577791I$ $a = 2.13432 - 0.95302I$ $b = -0.662890 - 1.194780I$	$-6.5211 + 19.6728I$	0
$u = -1.188740 - 0.577791I$ $a = 2.13432 + 0.95302I$ $b = -0.662890 + 1.194780I$	$-6.5211 - 19.6728I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.183180 + 0.623411I$ $a = -2.82260 - 0.68473I$ $b = 0.528925 + 1.041150I$	$-3.95708 + 5.28566I$	$-7.65386 - 6.06353I$
$u = 0.183180 - 0.623411I$ $a = -2.82260 + 0.68473I$ $b = 0.528925 - 1.041150I$	$-3.95708 - 5.28566I$	$-7.65386 + 6.06353I$
$u = -1.204110 + 0.613290I$ $a = -1.98739 + 0.58176I$ $b = 0.602557 + 1.058490I$	$-5.83477 + 10.29910I$	0
$u = -1.204110 - 0.613290I$ $a = -1.98739 - 0.58176I$ $b = 0.602557 - 1.058490I$	$-5.83477 - 10.29910I$	0
$u = 1.326160 + 0.345995I$ $a = -0.837092 - 0.801210I$ $b = 0.374168 - 1.056810I$	$-9.57865 - 6.09266I$	0
$u = 1.326160 - 0.345995I$ $a = -0.837092 + 0.801210I$ $b = 0.374168 + 1.056810I$	$-9.57865 + 6.09266I$	0
$u = 0.424473 + 0.459934I$ $a = 0.886035 - 0.618312I$ $b = -0.863375 + 0.576810I$	$1.27964 - 2.75816I$	$3.84353 + 4.77810I$
$u = 0.424473 - 0.459934I$ $a = 0.886035 + 0.618312I$ $b = -0.863375 - 0.576810I$	$1.27964 + 2.75816I$	$3.84353 - 4.77810I$
$u = -1.280760 + 0.498534I$ $a = 0.170811 - 0.501114I$ $b = 0.224304 - 0.941715I$	$-8.52722 + 4.11557I$	0
$u = -1.280760 - 0.498534I$ $a = 0.170811 + 0.501114I$ $b = 0.224304 + 0.941715I$	$-8.52722 - 4.11557I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.073227+0.614228I$ $a=1.218720-0.030606I$ $b=-0.603832+0.990875I$	$0.17547-2.67476I$	$-0.35921+1.91691I$
$u=-0.073227-0.614228I$ $a=1.218720+0.030606I$ $b=-0.603832-0.990875I$	$0.17547+2.67476I$	$-0.35921-1.91691I$
$u=0.051046+0.545236I$ $a=-0.58347-1.88291I$ $b=0.519307+0.372756I$	$-2.18234-0.98648I$	$-3.62310+1.27691I$
$u=0.051046-0.545236I$ $a=-0.58347+1.88291I$ $b=0.519307-0.372756I$	$-2.18234+0.98648I$	$-3.62310-1.27691I$
$u=-0.518123+0.128146I$ $a=2.59101+0.02205I$ $b=-0.835508-0.943250I$	$0.62409+3.22256I$	$-4.92112-0.95785I$
$u=-0.518123-0.128146I$ $a=2.59101-0.02205I$ $b=-0.835508+0.943250I$	$0.62409-3.22256I$	$-4.92112+0.95785I$
$u=0.249659+0.454698I$ $a=1.56686+1.42274I$ $b=-0.957567-0.789185I$	$1.05703+3.26207I$	$0.45189-6.64532I$
$u=0.249659-0.454698I$ $a=1.56686-1.42274I$ $b=-0.957567+0.789185I$	$1.05703-3.26207I$	$0.45189+6.64532I$
$u=0.156198+0.492346I$ $a=-0.43442-2.02699I$ $b=0.202504-0.920440I$	$-1.94775+1.68927I$	$-5.11970-2.70838I$
$u=0.156198-0.492346I$ $a=-0.43442+2.02699I$ $b=0.202504+0.920440I$	$-1.94775-1.68927I$	$-5.11970+2.70838I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.490158+0.040124I$		
$a=-5.13907+1.02652I$	$-2.22107+1.42999I$	$-3.99644+0.75307I$
$b=\ \ 0.396678-0.727427I$		
$u=-0.490158-0.040124I$		
$a=-5.13907-1.02652I$	$-2.22107-1.42999I$	$-3.99644-0.75307I$
$b=\ \ 0.396678+0.727427I$		

II. $I_2^u =$
$\langle -5u^{29}+37u^{27}+\cdots+b+1,\ u^{29}-6u^{28}+\cdots+a+16,\ u^{30}-8u^{28}+\cdots-6u^2+1\rangle$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^{29}+6u^{28}+\cdots+4u-16 \\ 5u^{29}-37u^{27}+\cdots-4u-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -4u^{29}+29u^{27}+\cdots-29u^3+5u \\ -2u^{29}+13u^{27}+\cdots+4u^3-2u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 2u^{29}-12u^{27}+\cdots-u-1 \\ 2u^{29}-u^{28}+\cdots+4u+1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -9u^{29}+66u^{27}+\cdots-63u^3+11u \\ -2u^{29}+13u^{27}+\cdots+3u^3-u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -6u^{29}+42u^{27}+\cdots-25u^3+3u \\ -2u^{29}+13u^{27}+\cdots+4u^3-2u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -15u^{29}-u^{28}+\cdots-114u^3+24u \\ -3u^{29}-2u^{28}+\cdots+9u+2 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^6-u^4+1 \\ u^8-2u^6+2u^4 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -5u^{29}+18u^{28}+44u^{27}-144u^{26}-185u^{25}+576u^{24}+479u^{23}-1426u^{22}-846u^{21}+2355u^{20}+1095u^{19}-2559u^{18}-1150u^{17}+1602u^{16}+1132u^{15}-52u^{14}-1071u^{13}-1048u^{12}+799u^{11}+1383u^{10}-296u^9-1263u^8-115u^7+982u^6+211u^5-584u^4-103u^3+244u^2+21u-61$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30} - 15u^{29} + \cdots - 19u + 1$
c_2	$u^{30} - u^{29} + \cdots - u + 1$
c_3	$u^{30} - 8u^{28} + \cdots - 6u^2 + 1$
c_4	$u^{30} + 8u^{28} + \cdots - 10u^2 + 1$
c_5	$u^{30} - 4u^{29} + \cdots - 2u^2 + 1$
c_6	$u^{30} + u^{29} + \cdots + u + 1$
c_7	$u^{30} + 2u^{29} + \cdots + 2u + 1$
c_8	$u^{30} + 4u^{28} + \cdots - 4u^4 + 1$
c_9	$u^{30} - 16u^{29} + \cdots - 12u + 1$
c_{10}	$u^{30} - 8u^{28} + \cdots - 6u^2 + 1$
c_{11}	$u^{30} - 2u^{29} + \cdots - 2u + 1$
c_{12}	$u^{30} + 8u^{28} + \cdots + 7u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{30} + 15y^{29} + \cdots + 7y + 1$
c_2, c_6	$y^{30} + 15y^{29} + \cdots + 19y + 1$
c_3, c_{10}	$y^{30} - 16y^{29} + \cdots - 12y + 1$
c_4	$y^{30} + 16y^{29} + \cdots - 20y + 1$
c_5	$y^{30} - 4y^{29} + \cdots - 4y + 1$
c_7, c_{11}	$y^{30} - 26y^{29} + \cdots - 26y + 1$
c_8	$y^{30} + 8y^{29} + \cdots - 8y^2 + 1$
c_9	$y^{30} + 32y^{28} + \cdots + 4y + 1$
c_{12}	$y^{30} + 16y^{29} + \cdots + 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.994467+0.353916I$ $a=-0.13957-1.41778I$ $b=\ \ 0.222604+0.612148I$	$-3.61074+0.45473I$	$-6.93636-1.50595I$
$u=-0.994467-0.353916I$ $a=-0.13957+1.41778I$ $b=\ \ 0.222604-0.612148I$	$-3.61074-0.45473I$	$-6.93636+1.50595I$
$u=-0.064011+0.940566I$ $a=\ \ 0.544351+0.162933I$ $b=-0.345063-0.914149I$	$-4.26161+1.42424I$	$0.50352-5.57942I$
$u=-0.064011-0.940566I$ $a=\ \ 0.544351-0.162933I$ $b=-0.345063+0.914149I$	$-4.26161-1.42424I$	$0.50352+5.57942I$
$u=-1.017560+0.448999I$ $a=\ \ 0.436222+1.072600I$ $b=\ \ 0.916579-0.881827I$	$-0.444250-0.254180I$	$2.26850+2.87479I$
$u=-1.017560-0.448999I$ $a=\ \ 0.436222-1.072600I$ $b=\ \ 0.916579+0.881827I$	$-0.444250+0.254180I$	$2.26850-2.87479I$
$u=\ \ 0.551713+0.688134I$ $a=\ \ 2.03216-0.74425I$ $b=-0.379573+0.645839I$	$-0.432727+0.842955I$	$-0.87316-1.36840I$
$u=\ \ 0.551713-0.688134I$ $a=\ \ 2.03216+0.74425I$ $b=-0.379573-0.645839I$	$-0.432727-0.842955I$	$-0.87316+1.36840I$
$u=\ \ 1.068000+0.342485I$ $a=-0.260910+1.386390I$ $b=\ \ 0.420339+1.169090I$	$-5.93334+2.39344I$	$-9.77631-1.23550I$
$u=\ \ 1.068000-0.342485I$ $a=-0.260910-1.386390I$ $b=\ \ 0.420339-1.169090I$	$-5.93334-2.39344I$	$-9.77631+1.23550I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.406986+0.761142I$ $a=1.60147-0.85711I$ $b=-0.516050+1.071810I$	$-2.07907-4.66119I$	$-3.39761+4.57858I$
$u=-0.406986-0.761142I$ $a=1.60147+0.85711I$ $b=-0.516050-1.071810I$	$-2.07907+4.66119I$	$-3.39761-4.57858I$
$u=1.028170+0.498788I$ $a=-1.40714-1.07504I$ $b=0.900131-0.752158I$	$-0.07812-6.43302I$	$-0.11395+9.43161I$
$u=1.028170-0.498788I$ $a=-1.40714+1.07504I$ $b=0.900131+0.752158I$	$-0.07812+6.43302I$	$-0.11395-9.43161I$
$u=-0.791075+0.218782I$ $a=-2.88566+0.56757I$ $b=-0.215247+0.703613I$	$-2.68027+2.10521I$	$-10.48037-7.05069I$
$u=-0.791075-0.218782I$ $a=-2.88566-0.56757I$ $b=-0.215247-0.703613I$	$-2.68027-2.10521I$	$-10.48037+7.05069I$
$u=1.051160+0.570107I$ $a=-0.540576-1.233710I$ $b=0.351699+0.565930I$	$-1.98901-5.71256I$	$-1.36845+5.76067I$
$u=1.051160-0.570107I$ $a=-0.540576+1.233710I$ $b=0.351699-0.565930I$	$-1.98901+5.71256I$	$-1.36845-5.76067I$
$u=0.592104+0.489364I$ $a=1.173220+0.500106I$ $b=-0.804256-0.760321I$	$1.33625+2.32795I$	$0.115382-0.275012I$
$u=0.592104-0.489364I$ $a=1.173220-0.500106I$ $b=-0.804256+0.760321I$	$1.33625-2.32795I$	$0.115382+0.275012I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.754778 + 0.131207I$ $a = -0.67105 + 2.14428I$ $b = -0.356741 + 1.111360I$	$-4.37931 - 4.59780I$	$-7.80627 + 7.63028I$
$u = 0.754778 - 0.131207I$ $a = -0.67105 - 2.14428I$ $b = -0.356741 - 1.111360I$	$-4.37931 + 4.59780I$	$-7.80627 - 7.63028I$
$u = -1.118810 + 0.557281I$ $a = -2.35393 + 0.82448I$ $b = 0.550027 + 1.148230I$	$-4.27699 + 9.64890I$	$-6.76427 - 7.42984I$
$u = -1.118810 - 0.557281I$ $a = -2.35393 - 0.82448I$ $b = 0.550027 - 1.148230I$	$-4.27699 - 9.64890I$	$-6.76427 + 7.42984I$
$u = -0.641717 + 0.369598I$ $a = 1.92513 + 0.81605I$ $b = -0.830917 - 0.913416I$	$0.87575 + 3.82370I$	$0.74649 - 11.26661I$
$u = -0.641717 - 0.369598I$ $a = 1.92513 - 0.81605I$ $b = -0.830917 + 0.913416I$	$0.87575 - 3.82370I$	$0.74649 + 11.26661I$
$u = 1.235430 + 0.411587I$ $a = -0.506147 - 0.937143I$ $b = 0.306226 - 0.980203I$	$-8.41986 - 5.93076I$	$-6.32065 + 9.46541I$
$u = 1.235430 - 0.411587I$ $a = -0.506147 + 0.937143I$ $b = 0.306226 + 0.980203I$	$-8.41986 + 5.93076I$	$-6.32065 - 9.46541I$
$u = -1.246730 + 0.463505I$ $a = 0.552435 - 0.730357I$ $b = 0.280242 - 0.887089I$	$-8.03990 + 3.51185I$	$-3.79648 + 1.95941I$
$u = -1.246730 - 0.463505I$ $a = 0.552435 + 0.730357I$ $b = 0.280242 + 0.887089I$	$-8.03990 - 3.51185I$	$-3.79648 - 1.95941I$

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

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

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

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

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

$$a_{12} = \begin{pmatrix} u^6 - u^4 - u - 1 \\ -u^6 - u^3 - u^2 + u \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u^6 - u^4 + 1 \\ u^8 - 2u^6 + 2u^4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{12}	$y^9 + 10y^8 + 39y^7 + 82y^6 + 111y^5 + 98y^4 + 86y^3 + 32y^2 + y - 1$
c_2, c_6, c_9	$y^9 + 2y^8 + 7y^7 + 10y^6 + 15y^5 + 10y^4 + 6y^3 + y - 1$
c_3, c_8, c_{10}	$y^9 - 2y^8 + 3y^7 - 2y^6 + 3y^5 - 2y^4 + 2y^3 + y - 1$
c_4	$y^9 - 2y^8 + 7y^7 - 7y^6 + 35y^5 + 28y^4 + 80y^3 + 51y^2 + 91y - 9$
c_5	$y^9 - 6y^8 + 19y^7 - 26y^6 - 9y^5 + 86y^4 + 94y^3 - 72y^2 + 13y - 1$
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
$u=-0.569300+0.827941I$ $a=\ 1.36138+0.94269I$ $b=-0.361384-0.942694I$	-1.64493	-6.00000
$u=-0.569300-0.827941I$ $a=\ 1.36138-0.94269I$ $b=-0.361384+0.942694I$	-1.64493	-6.00000
$u=\ 0.951836+0.524109I$ $a=\ 0.368699-0.997731I$ $b=\ 0.631301+0.997731I$	-1.64493	-6.00000
$u=\ 0.951836-0.524109I$ $a=\ 0.368699+0.997731I$ $b=\ 0.631301-0.997731I$	-1.64493	-6.00000
$u=\ 0.318649+0.823858I$ $a=\ 1.57720-0.52504I$ $b=-0.577205+0.525043I$	-1.64493	-6.00000
$u=\ 0.318649-0.823858I$ $a=\ 1.57720+0.52504I$ $b=-0.577205-0.525043I$	-1.64493	-6.00000
$u=-1.091200+0.433183I$ $a=-0.003066+0.945378I$ $b=\ 1.003070-0.945378I$	-1.64493	-6.00000
$u=-1.091200-0.433183I$ $a=-0.003066-0.945378I$ $b=\ 1.003070+0.945378I$	-1.64493	-6.00000
$u=\ 0.780028$ $a=\ 0.391557$ $b=\ 0.608443$	-1.64493	-6.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^9+2u^8+7u^7+10u^6+15u^5+10u^4+6u^3+u-1)$ $\cdot(u^{30}-15u^{29}+\cdots-19u+1)$ $\cdot(u^{142}+68u^{141}+\cdots+45485023u+1940449)$
c_2	$(u^9+2u^8+\cdots+u+1)(u^{30}-u^{29}+\cdots-u+1)$ $\cdot(u^{142}-2u^{141}+\cdots+793u+1393)$
c_3	$(u^9-u^7+u^5+u+1)(u^{30}-8u^{28}+\cdots-6u^2+1)$ $\cdot(u^{142}-u^{141}+\cdots-2u+1)$
c_4	$(u^9-u^7-3u^6+3u^5+2u^4+4u^3+5u^2+11u+3)$ $\cdot(u^{30}+8u^{28}+\cdots-10u^2+1)(u^{142}-3u^{141}+\cdots-3417185u+423016)$
c_5	$(u^9-3u^7-4u^6+5u^5+4u^4+10u^3-2u^2-3u+1)$ $\cdot(u^{30}-4u^{29}+\cdots-2u^2+1)(u^{142}-9u^{141}+\cdots-48u+1)$
c_6	$(u^9+2u^8+\cdots+u+1)(u^{30}+u^{29}+\cdots+u+1)$ $\cdot(u^{142}-2u^{141}+\cdots+793u+1393)$
c_7	$((u+1)^9)(u^{30}+2u^{29}+\cdots+2u+1)$ $\cdot(u^{142}-10u^{141}+\cdots-1373392u+119344)$
c_8	$(u^9-u^7+u^5+u+1)(u^{30}+4u^{28}+\cdots-4u^4+1)$ $\cdot(u^{142}-5u^{141}+\cdots+1486u+347)$
c_9	$(u^9+2u^8+3u^7+2u^6+3u^5+2u^4+2u^3+u+1)$ $\cdot(u^{30}-16u^{29}+\cdots-12u+1)(u^{142}+75u^{141}+\cdots+12u+1)$
c_{10}	$(u^9-u^7+u^5+u+1)(u^{30}-8u^{28}+\cdots-6u^2+1)$ $\cdot(u^{142}-u^{141}+\cdots-2u+1)$
c_{11}	$((u+1)^9)(u^{30}-2u^{29}+\cdots-2u+1)$ $\cdot(u^{142}-10u^{141}+\cdots-1373392u+119344)$
c_{12}	$(u^9-2u^8+7u^7-10u^6+15u^5-10u^4+6u^3+u+1)$ $\cdot(u^{30}+8u^{28}+\cdots+7u^2+1)(u^{142}-u^{141}+\cdots-68944u+61373)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^9+10y^8+39y^7+82y^6+111y^5+98y^4+86y^3+32y^2+y-1)$ $\cdot(y^{30}+15y^{29}+\cdots+7y+1)$ $\cdot(y^{142}+28y^{141}+\cdots+136799040774219y+3765342321601)$
c_2, c_6	$(y^9+2y^8+7y^7+10y^6+15y^5+10y^4+6y^3+y-1)$ $\cdot(y^{30}+15y^{29}+\cdots+19y+1)$ $\cdot(y^{142}+68y^{141}+\cdots+45485023y+1940449)$
c_3, c_{10}	$(y^9-2y^8+3y^7-2y^6+3y^5-2y^4+2y^3+y-1)$ $\cdot(y^{30}-16y^{29}+\cdots-12y+1)(y^{142}-75y^{141}+\cdots-12y+1)$
c_4	$(y^9-2y^8+7y^7-7y^6+35y^5+28y^4+80y^3+51y^2+91y-9)$ $\cdot(y^{30}+16y^{29}+\cdots-20y+1)$ $\cdot(y^{142}+81y^{141}+\cdots-614480347793y+178942536256)$
c_5	$(y^9-6y^8+19y^7-26y^6-9y^5+86y^4+94y^3-72y^2+13y-1)$ $\cdot(y^{30}-4y^{29}+\cdots-4y+1)(y^{142}-11y^{141}+\cdots-96y+1)$
c_7, c_{11}	$((y-1)^9)(y^{30}-26y^{29}+\cdots-26y+1)$ $\cdot(y^{142}-98y^{141}+\cdots-733475256192y+14242990336)$
c_8	$(y^9-2y^8+3y^7-2y^6+3y^5-2y^4+2y^3+y-1)$ $\cdot(y^{30}+8y^{29}+\cdots-8y^2+1)(y^{142}+17y^{141}+\cdots+8068556y+120409)$
c_9	$(y^9+2y^8+7y^7+10y^6+15y^5+10y^4+6y^3+y-1)$ $\cdot(y^{30}+32y^{28}+\cdots+4y+1)(y^{142}-3y^{141}+\cdots-56y+1)$
c_{12}	$(y^9+10y^8+39y^7+82y^6+111y^5+98y^4+86y^3+32y^2+y-1)$ $\cdot(y^{30}+16y^{29}+\cdots+14y+1)$ $\cdot(y^{142}+37y^{141}+\cdots+186760312142y+3766645129)$