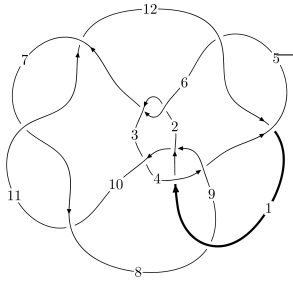
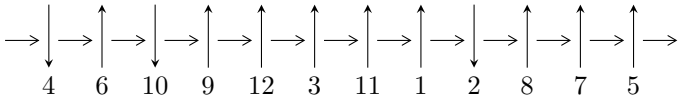
$12a_{0959}$ $(K12a_{0959})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle 8.35200 \times 10^{510} u^{141} - 4.09385 \times 10^{511} u^{140} + \cdots + 2.45826 \times 10^{513} b - 8.83000 \times 10^{512}, \\
&\quad 6.00094 \times 10^{514} u^{141} - 2.96953 \times 10^{515} u^{140} + \cdots + 2.13869 \times 10^{515} a - 1.26630 \times 10^{517}, \\
&\quad u^{142} - 5u^{141} + \cdots - 332u + 29 \rangle \\
I_2^u &= \langle 75418015 u^{30} + 613925564 u^{29} + \cdots + 89877703 b - 104428676, \\
&\quad 227579646 u^{30} + 1595720565 u^{29} + \cdots + 89877703 a + 471832864,\ u^{31} + 6u^{30} + \cdots + 27u^2 - 1 \rangle \\
I_3^u &= \langle b - 1,\ 3a - u + 1,\ u^2 + u + 1 \rangle \\
I_4^u &= \langle b - 1,\ a + u,\ u^2 + u + 1 \rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 177 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. $\boldsymbol{I_1^u = \langle 8.35 \times 10^{510} u^{141} - 4.09 \times 10^{511} u^{140} + \cdots + 2.46 \times 10^{513} b - 8.83 \times 10^{512},\ 6.00 \times 10^{514} u^{141} - 2.97 \times 10^{515} u^{140} + \cdots + 2.14 \times 10^{515} a - 1.27 \times 10^{517},\ u^{142} - 5u^{141} + \cdots - 332u + 29 \rangle}$

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.280590u^{141} + 1.38848u^{140} + \cdots - 228.267u + 59.2090 \\ -0.00339752u^{141} + 0.0166534u^{140} + \cdots + 1.73708u + 0.359197 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -0.161778u^{141} + 0.754742u^{140} + \cdots - 182.653u + 47.6645 \\ 0.0494736u^{141} - 0.275149u^{140} + \cdots + 7.41354u - 0.302281 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.000859398u^{141} + 0.0173947u^{140} + \cdots - 87.6362u + 22.3884 \\ 0.0988280u^{141} - 0.484196u^{140} + \cdots - 0.641859u + 0.706963 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.174032u^{141} + 0.814178u^{140} + \cdots - 185.281u + 48.4292 \\ 0.0372198u^{141} - 0.215713u^{140} + \cdots + 4.78579u + 0.462379 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -0.267746u^{141} + 1.28141u^{140} + \cdots - 216.097u + 57.4617 \\ -0.00572144u^{141} - 0.00711253u^{140} + \cdots + 4.17014u + 0.863544 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.400381u^{141} - 1.89645u^{140} + \cdots + 318.441u - 68.7080 \\ 0.0321004u^{141} - 0.116898u^{140} + \cdots - 13.3500u + 3.03495 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.228624u^{141} - 1.18663u^{140} + \cdots + 64.1107u - 11.5201 \\ 0.199469u^{141} - 1.13061u^{140} + \cdots + 19.9646u - 0.792164 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 2.49543u^{141} - 12.0492u^{140} + \cdots + 2253.52u - 500.102$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$3(3u^{142} - 20u^{140} + \cdots + 29u - 1)$
c_2, c_6	$u^{142} + 2u^{141} + \cdots - 356u + 304$
c_3	$3(3u^{142} - 6u^{141} + \cdots - 261246u - 14332)$
c_4	$u^{142} + 2u^{141} + \cdots + 32895u - 13173$
c_5, c_{12}	$3(3u^{142} + 12u^{141} + \cdots - 1.16737 \times 10^7 u - 729697)$
c_7, c_{10}, c_{11}	$u^{142} - 5u^{141} + \cdots - 332u + 29$
c_8	$u^{142} + 22u^{140} + \cdots + 3840u + 576$
c_9	$u^{142} - 2u^{141} + \cdots + 29864u - 11279$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$9(9y^{142} - 120y^{141} + \cdots - 57y + 1)$
c_2, c_6	$y^{142} - 62y^{141} + \cdots + 425936y + 92416$
c_3	$9(9y^{142} - 138y^{141} + \cdots + 2.20180 \times 10^{10}y + 2.05406 \times 10^{8})$
c_4	$y^{142} + 26y^{141} + \cdots + 7659337353y + 173527929$
c_5, c_{12}	$9(9y^{142} + 852y^{141} + \cdots + 1.69390 \times 10^{13}y + 5.32458 \times 10^{11})$
c_7, c_{10}, c_{11}	$y^{142} + 139y^{141} + \cdots - 94158y + 841$
c_8	$y^{142} + 44y^{141} + \cdots - 2230272y + 331776$
c_9	$y^{142} + 2y^{141} + \cdots - 7484772366y + 127215841$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.642590 + 0.816128I$ $a = 0.017475 - 0.603353I$ $b = -1.090570 - 0.186235I$	$2.74568 + 3.72052I$	0
$u = 0.642590 - 0.816128I$ $a = 0.017475 + 0.603353I$ $b = -1.090570 + 0.186235I$	$2.74568 - 3.72052I$	0
$u = 0.943307 + 0.013606I$ $a = 0.523454 - 0.510396I$ $b = -0.918496 - 0.691900I$	$0.70494 + 2.70160I$	0
$u = 0.943307 - 0.013606I$ $a = 0.523454 + 0.510396I$ $b = -0.918496 + 0.691900I$	$0.70494 - 2.70160I$	0
$u = -0.966558 + 0.452108I$ $a = -0.535878 - 0.706338I$ $b = 1.158380 - 0.655861I$	$-1.3841 - 14.7096I$	0
$u = -0.966558 - 0.452108I$ $a = -0.535878 + 0.706338I$ $b = 1.158380 + 0.655861I$	$-1.3841 + 14.7096I$	0
$u = 0.875728 + 0.317953I$ $a = 0.439140 - 0.569516I$ $b = -1.044380 - 0.109811I$	$4.26985 + 1.50980I$	0
$u = 0.875728 - 0.317953I$ $a = 0.439140 + 0.569516I$ $b = -1.044380 + 0.109811I$	$4.26985 - 1.50980I$	0
$u = 0.493472 + 0.961325I$ $a = -0.340616 - 0.322389I$ $b = 1.089300 - 0.079315I$	$1.53464 + 2.38535I$	0
$u = 0.493472 - 0.961325I$ $a = -0.340616 + 0.322389I$ $b = 1.089300 + 0.079315I$	$1.53464 - 2.38535I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.790119+0.452760I$ $a=-1.356870-0.396797I$ $b=\ \ 0.728522-0.516306I$	$-3.29487+4.30574I$	0
$u=-0.790119-0.452760I$ $a=-1.356870+0.396797I$ $b=\ \ 0.728522+0.516306I$	$-3.29487-4.30574I$	0
$u=\ \ 0.208817+1.079900I$ $a=-0.223436+0.626423I$ $b=-0.429029+0.204141I$	$-2.34458+3.04452I$	0
$u=\ \ 0.208817-1.079900I$ $a=-0.223436-0.626423I$ $b=-0.429029-0.204141I$	$-2.34458-3.04452I$	0
$u=\ \ 1.020410+0.442473I$ $a=-0.521102+0.238186I$ $b=\ \ 1.088850+0.444342I$	$0.64936+4.75757I$	0
$u=\ \ 1.020410-0.442473I$ $a=-0.521102-0.238186I$ $b=\ \ 1.088850-0.444342I$	$0.64936-4.75757I$	0
$u=\ \ 0.707431+0.499654I$ $a=-0.386233+0.646196I$ $b=\ \ 1.219560+0.648628I$	$-1.03167+5.58242I$	0
$u=\ \ 0.707431-0.499654I$ $a=-0.386233-0.646196I$ $b=\ \ 1.219560-0.648628I$	$-1.03167-5.58242I$	0
$u=\ \ 0.749048+0.402762I$ $a=-0.087163+1.372770I$ $b=\ \ 0.981884+0.276958I$	$3.02954+2.04599I$	0
$u=\ \ 0.749048-0.402762I$ $a=-0.087163-1.372770I$ $b=\ \ 0.981884-0.276958I$	$3.02954-2.04599I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.737530+0.384331I$ $a=\ \ 0.857728+0.749010I$ $b=-1.154610+0.661050I$	$-2.52747-7.11688I$	0
$u=-0.737530-0.384331I$ $a=\ \ 0.857728-0.749010I$ $b=-1.154610-0.661050I$	$-2.52747+7.11688I$	0
$u=-0.643956+0.508889I$ $a=-0.338789+0.319747I$ $b=\ \ 0.376743+0.950292I$	$-3.72501-8.90092I$	0
$u=-0.643956-0.508889I$ $a=-0.338789-0.319747I$ $b=\ \ 0.376743-0.950292I$	$-3.72501+8.90092I$	0
$u=\ \ 1.065310+0.522095I$ $a=\ \ 0.583609-0.675353I$ $b=-0.995320-0.551462I$	$0.87974+5.44723I$	0
$u=\ \ 1.065310-0.522095I$ $a=\ \ 0.583609+0.675353I$ $b=-0.995320+0.551462I$	$0.87974-5.44723I$	0
$u=-0.693685+0.398764I$ $a=\ \ 0.451970+1.337320I$ $b=-1.211880+0.404517I$	$3.98949-8.94716I$	0
$u=-0.693685-0.398764I$ $a=\ \ 0.451970-1.337320I$ $b=-1.211880-0.404517I$	$3.98949+8.94716I$	0
$u=\ \ 0.340372+1.157210I$ $a=\ \ 0.34956-2.02425I$ $b=-0.821720-0.784733I$	$-2.82768+7.38570I$	0
$u=\ \ 0.340372-1.157210I$ $a=\ \ 0.34956+2.02425I$ $b=-0.821720+0.784733I$	$-2.82768-7.38570I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.333359+0.713404I$ $a=-0.475634+0.135045I$ $b=-1.303340-0.251159I$	$3.04704+5.02224I$	0
$u=-0.333359-0.713404I$ $a=-0.475634-0.135045I$ $b=-1.303340+0.251159I$	$3.04704-5.02224I$	0
$u=-0.240579+1.193860I$ $a=0.932308-0.268323I$ $b=1.380920+0.175400I$	$0.47775-3.33774I$	0
$u=-0.240579-1.193860I$ $a=0.932308+0.268323I$ $b=1.380920-0.175400I$	$0.47775+3.33774I$	0
$u=0.548703+1.091500I$ $a=-0.527923+0.273988I$ $b=-0.823315+0.539077I$	$-2.62567+2.51585I$	0
$u=0.548703-1.091500I$ $a=-0.527923-0.273988I$ $b=-0.823315-0.539077I$	$-2.62567-2.51585I$	0
$u=0.853051+0.882884I$ $a=0.186871+0.078567I$ $b=-0.689713+0.477853I$	$-0.187221+1.160760I$	0
$u=0.853051-0.882884I$ $a=0.186871-0.078567I$ $b=-0.689713-0.477853I$	$-0.187221-1.160760I$	0
$u=-0.163374+1.218340I$ $a=-1.02663-1.89218I$ $b=-0.092596-0.262769I$	$-4.71635-7.36833I$	0
$u=-0.163374-1.218340I$ $a=-1.02663+1.89218I$ $b=-0.092596+0.262769I$	$-4.71635+7.36833I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.871082+0.873688I$ $a=\ \ 0.224041-0.128263I$ $b=\ \ 0.956294+0.527645I$	$-2.54329+8.54907I$	0
$u=-0.871082-0.873688I$ $a=\ \ 0.224041+0.128263I$ $b=\ \ 0.956294-0.527645I$	$-2.54329-8.54907I$	0
$u=-0.509071+0.547445I$ $a=-0.157483+0.680723I$ $b=-0.867139-0.575732I$	$-3.33250+2.82467I$	0
$u=-0.509071-0.547445I$ $a=-0.157483-0.680723I$ $b=-0.867139+0.575732I$	$-3.33250-2.82467I$	0
$u=\ \ 0.328825+0.657498I$ $a=\ \ 0.704188+0.606675I$ $b=-0.008280+0.398492I$	$-0.40637+1.82781I$	0
$u=\ \ 0.328825-0.657498I$ $a=\ \ 0.704188-0.606675I$ $b=-0.008280-0.398492I$	$-0.40637-1.82781I$	0
$u=\ \ 0.097968+1.268690I$ $a=\ \ 0.78424+1.56513I$ $b=\ \ 0.746783+0.781991I$	$-1.52986+2.94544I$	0
$u=\ \ 0.097968-1.268690I$ $a=\ \ 0.78424-1.56513I$ $b=\ \ 0.746783-0.781991I$	$-1.52986-2.94544I$	0
$u=-0.006619+1.292480I$ $a=\ \ 0.13050+2.44173I$ $b=-0.133227+1.311720I$	$-7.54127+0.89803I$	0
$u=-0.006619-1.292480I$ $a=\ \ 0.13050-2.44173I$ $b=-0.133227-1.311720I$	$-7.54127-0.89803I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.168089+1.283240I$ $a=-0.94002+1.07137I$ $b=-0.964706+0.361388I$	$-1.70264+3.21989I$	0
$u=-0.168089-1.283240I$ $a=-0.94002-1.07137I$ $b=-0.964706-0.361388I$	$-1.70264-3.21989I$	0
$u=0.057100+1.324370I$ $a=0.345602-0.380089I$ $b=1.49368-0.11239I$	$-1.23352+0.72597I$	0
$u=0.057100-1.324370I$ $a=0.345602+0.380089I$ $b=1.49368+0.11239I$	$-1.23352-0.72597I$	0
$u=-0.201131+1.310480I$ $a=0.39729-1.76605I$ $b=1.119060-0.706966I$	$-0.30789-2.94943I$	0
$u=-0.201131-1.310480I$ $a=0.39729+1.76605I$ $b=1.119060+0.706966I$	$-0.30789+2.94943I$	0
$u=0.558574+0.358142I$ $a=0.31244+1.61475I$ $b=0.941529-0.330493I$	$-0.83700-1.33766I$	0
$u=0.558574-0.358142I$ $a=0.31244-1.61475I$ $b=0.941529+0.330493I$	$-0.83700+1.33766I$	0
$u=-0.189121+1.325790I$ $a=-0.71099-1.70974I$ $b=-0.176301-0.714324I$	$-4.63200-7.40725I$	0
$u=-0.189121-1.325790I$ $a=-0.71099+1.70974I$ $b=-0.176301+0.714324I$	$-4.63200+7.40725I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.873456 + 1.020830I$ $a = 0.035777 + 0.409646I$ $b = 0.752464 - 0.266551I$	$-0.90582 + 1.76298I$	0
$u = 0.873456 - 1.020830I$ $a = 0.035777 - 0.409646I$ $b = 0.752464 + 0.266551I$	$-0.90582 - 1.76298I$	0
$u = -0.635804 + 0.150451I$ $a = 1.47210 - 0.05433I$ $b = -0.755655 + 0.592582I$	$-3.68254 - 1.82520I$	0
$u = -0.635804 - 0.150451I$ $a = 1.47210 + 0.05433I$ $b = -0.755655 - 0.592582I$	$-3.68254 + 1.82520I$	0
$u = -0.044396 + 1.351350I$ $a = -0.18490 + 1.64708I$ $b = -1.23408 + 0.78519I$	$-7.00217 - 3.33315I$	0
$u = -0.044396 - 1.351350I$ $a = -0.18490 - 1.64708I$ $b = -1.23408 - 0.78519I$	$-7.00217 + 3.33315I$	0
$u = -0.645165 + 0.054390I$ $a = -0.806804 - 0.445214I$ $b = 1.229590 - 0.404665I$	$3.92422 + 0.06439I$	0
$u = -0.645165 - 0.054390I$ $a = -0.806804 + 0.445214I$ $b = 1.229590 + 0.404665I$	$3.92422 - 0.06439I$	0
$u = -0.055605 + 1.354360I$ $a = -0.858508 + 0.157201I$ $b = -1.85397 + 0.05924I$	$-1.07564 - 6.31405I$	0
$u = -0.055605 - 1.354360I$ $a = -0.858508 - 0.157201I$ $b = -1.85397 - 0.05924I$	$-1.07564 + 6.31405I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.109009 + 1.360100I$ $a = 0.50860 + 1.62021I$ $b = 0.503762 + 0.129477I$	$-5.96355 + 0.91867I$	0
$u = 0.109009 - 1.360100I$ $a = 0.50860 - 1.62021I$ $b = 0.503762 - 0.129477I$	$-5.96355 - 0.91867I$	0
$u = 0.094013 + 1.373090I$ $a = 0.50435 - 1.56561I$ $b = 0.835374 - 0.604403I$	$-3.21335 + 1.13985I$	0
$u = 0.094013 - 1.373090I$ $a = 0.50435 + 1.56561I$ $b = 0.835374 + 0.604403I$	$-3.21335 - 1.13985I$	0
$u = 0.047673 + 1.382060I$ $a = -0.53024 + 2.46707I$ $b = 0.939459 + 0.260395I$	$-5.11402 + 0.68211I$	0
$u = 0.047673 - 1.382060I$ $a = -0.53024 - 2.46707I$ $b = 0.939459 - 0.260395I$	$-5.11402 - 0.68211I$	0
$u = 0.226425 + 0.574051I$ $a = 2.05635 - 2.42714I$ $b = -0.780073 - 0.475319I$	$-2.86698 + 6.92930I$	$3.42159 - 10.37880I$
$u = 0.226425 - 0.574051I$ $a = 2.05635 + 2.42714I$ $b = -0.780073 + 0.475319I$	$-2.86698 - 6.92930I$	$3.42159 + 10.37880I$
$u = -0.065349 + 1.385010I$ $a = 0.21400 + 1.57674I$ $b = -0.408080 + 0.684531I$	$-6.89459 + 0.86791I$	0
$u = -0.065349 - 1.385010I$ $a = 0.21400 - 1.57674I$ $b = -0.408080 - 0.684531I$	$-6.89459 - 0.86791I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.575616+0.208751I$ $a=-0.488825-0.593288I$ $b=\ \ 0.034455-0.837209I$	$0.18610-4.61045I$	$6.00000+7.28544I$
$u=-0.575616-0.208751I$ $a=-0.488825+0.593288I$ $b=\ \ 0.034455+0.837209I$	$0.18610+4.61045I$	$6.00000-7.28544I$
$u=-0.33407+1.38157I$ $a=\ \ 0.330549+1.362890I$ $b=-1.059480+0.676117I$	$-8.45107-5.56059I$	0
$u=-0.33407-1.38157I$ $a=\ \ 0.330549-1.362890I$ $b=-1.059480-0.676117I$	$-8.45107+5.56059I$	0
$u=-0.397175+0.416339I$ $a=\ \ 0.0397112+0.0396057I$ $b=-0.419872-1.036180I$	$-4.82118-1.14145I$	$-3.17765+7.01904I$
$u=-0.397175-0.416339I$ $a=\ \ 0.0397112-0.0396057I$ $b=-0.419872+1.036180I$	$-4.82118+1.14145I$	$-3.17765-7.01904I$
$u=-0.225495+0.507809I$ $a=\ \ 1.16640+1.00371I$ $b=\ \ 0.048260+0.563484I$	$-1.14702+1.78911I$	$1.00281-1.12035I$
$u=-0.225495-0.507809I$ $a=\ \ 1.16640-1.00371I$ $b=\ \ 0.048260-0.563484I$	$-1.14702-1.78911I$	$1.00281+1.12035I$
$u=\ \ 0.34333+1.41646I$ $a=-0.152141-1.211710I$ $b=-0.979069-0.395764I$	$-1.20544+5.88296I$	0
$u=\ \ 0.34333-1.41646I$ $a=-0.152141+1.211710I$ $b=-0.979069+0.395764I$	$-1.20544-5.88296I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.16196+1.45079I$ $a=-0.77757-1.41013I$ $b=-0.61496-1.31797I$	$-10.82780-3.31481I$	0
$u=-0.16196-1.45079I$ $a=-0.77757+1.41013I$ $b=-0.61496+1.31797I$	$-10.82780+3.31481I$	0
$u=0.11893+1.45940I$ $a=0.48863-1.65260I$ $b=0.53766-1.56090I$	$-10.21780+0.80786I$	0
$u=0.11893-1.45940I$ $a=0.48863+1.65260I$ $b=0.53766+1.56090I$	$-10.21780-0.80786I$	0
$u=-0.10051+1.46785I$ $a=0.89905-1.63901I$ $b=0.992133-0.444265I$	$-4.24703-1.99121I$	0
$u=-0.10051-1.46785I$ $a=0.89905+1.63901I$ $b=0.992133+0.444265I$	$-4.24703+1.99121I$	0
$u=-0.28003+1.47044I$ $a=-0.19310+1.71437I$ $b=-1.27509+0.81538I$	$-8.51253-10.83600I$	0
$u=-0.28003-1.47044I$ $a=-0.19310-1.71437I$ $b=-1.27509-0.81538I$	$-8.51253+10.83600I$	0
$u=-0.25470+1.48414I$ $a=-0.54064+1.72717I$ $b=-1.137500+0.588329I$	$-2.14091-12.41600I$	0
$u=-0.25470-1.48414I$ $a=-0.54064-1.72717I$ $b=-1.137500-0.588329I$	$-2.14091+12.41600I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.19637+1.50341I$ $a=-0.551614-0.650419I$ $b=-0.595444-0.816822I$	$-9.87357+0.03826I$	0
$u=-0.19637-1.50341I$ $a=-0.551614+0.650419I$ $b=-0.595444+0.816822I$	$-9.87357-0.03826I$	0
$u=-0.23545+1.49943I$ $a=\ \ 0.59355+1.34991I$ $b=\ \ 0.517545+1.305810I$	$-10.2251-12.1553I$	0
$u=-0.23545-1.49943I$ $a=\ \ 0.59355-1.34991I$ $b=\ \ 0.517545-1.305810I$	$-10.2251+12.1553I$	0
$u=\ \ 0.27997+1.49439I$ $a=\ \ 0.49688+1.51195I$ $b=\ \ 0.857275+0.575483I$	$-3.16407+5.81342I$	0
$u=\ \ 0.27997-1.49439I$ $a=\ \ 0.49688-1.51195I$ $b=\ \ 0.857275-0.575483I$	$-3.16407-5.81342I$	0
$u=\ \ 0.11388+1.51903I$ $a=-0.224209-1.221250I$ $b=-0.158453-1.159590I$	$-10.04230+3.46563I$	0
$u=\ \ 0.11388-1.51903I$ $a=-0.224209+1.221250I$ $b=-0.158453+1.159590I$	$-10.04230-3.46563I$	0
$u=\ \ 0.467947+0.082376I$ $a=\ \ 0.20095+1.61703I$ $b=\ \ 1.061320+0.299676I$	$2.49343+0.76222I$	$8.97618+6.78934I$
$u=\ \ 0.467947-0.082376I$ $a=\ \ 0.20095-1.61703I$ $b=\ \ 1.061320-0.299676I$	$2.49343-0.76222I$	$8.97618-6.78934I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.16019 + 1.51773I$ $a = 0.161334 - 1.389530I$ $b = -1.165360 - 0.532914I$	$-9.81043 + 8.85249I$	0
$u = 0.16019 - 1.51773I$ $a = 0.161334 + 1.389530I$ $b = -1.165360 + 0.532914I$	$-9.81043 - 8.85249I$	0
$u = 0.471529 + 0.034714I$ $a = 0.724237 + 0.854589I$ $b = 0.189168 + 0.252378I$	$1.130630 + 0.395757I$	$9.73572 - 1.85939I$
$u = 0.471529 - 0.034714I$ $a = 0.724237 - 0.854589I$ $b = 0.189168 - 0.252378I$	$1.130630 - 0.395757I$	$9.73572 + 1.85939I$
$u = 0.27262 + 1.51013I$ $a = 0.43826 + 1.57436I$ $b = 1.33352 + 0.92106I$	$-7.55128 + 9.24082I$	0
$u = 0.27262 - 1.51013I$ $a = 0.43826 - 1.57436I$ $b = 1.33352 - 0.92106I$	$-7.55128 - 9.24082I$	0
$u = 0.15346 + 1.53004I$ $a = -0.688242 - 1.214960I$ $b = -1.080210 - 0.654743I$	$-4.94512 + 6.18384I$	0
$u = 0.15346 - 1.53004I$ $a = -0.688242 + 1.214960I$ $b = -1.080210 + 0.654743I$	$-4.94512 - 6.18384I$	0
$u = 0.36147 + 1.51681I$ $a = 0.213386 + 1.183390I$ $b = 1.35152 + 0.64187I$	$-5.64604 + 9.68033I$	0
$u = 0.36147 - 1.51681I$ $a = 0.213386 - 1.183390I$ $b = 1.35152 - 0.64187I$	$-5.64604 - 9.68033I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.25466+1.54065I$ $a=-0.151629-1.104120I$ $b=\ \ 1.137050-0.553487I$	$-9.93865+0.42751I$	0
$u=-0.25466-1.54065I$ $a=-0.151629+1.104120I$ $b=\ \ 1.137050+0.553487I$	$-9.93865-0.42751I$	0
$u=-0.36101+1.52897I$ $a=\ \ 0.17111-1.60929I$ $b=\ \ 1.26889-0.80370I$	$-7.7580-19.5165I$	0
$u=-0.36101-1.52897I$ $a=\ \ 0.17111+1.60929I$ $b=\ \ 1.26889+0.80370I$	$-7.7580+19.5165I$	0
$u=\ \ 0.22488+1.55770I$ $a=-0.388858+1.130520I$ $b=-0.442685+0.996940I$	$-8.08216+4.56639I$	0
$u=\ \ 0.22488-1.55770I$ $a=-0.388858-1.130520I$ $b=-0.442685-0.996940I$	$-8.08216-4.56639I$	0
$u=-0.259450+0.296585I$ $a=-0.43913-2.89349I$ $b=\ \ 1.105900-0.177648I$	$1.65486-0.64880I$	$1.44968-4.85704I$
$u=-0.259450-0.296585I$ $a=-0.43913+2.89349I$ $b=\ \ 1.105900+0.177648I$	$1.65486+0.64880I$	$1.44968+4.85704I$
$u=\ \ 0.38304+1.57313I$ $a=-0.07108-1.44660I$ $b=-1.164860-0.701696I$	$-5.88179+10.70490I$	0
$u=\ \ 0.38304-1.57313I$ $a=-0.07108+1.44660I$ $b=-1.164860+0.701696I$	$-5.88179-10.70490I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.114533+0.357347I$ $a=-1.35824+1.81438I$ $b=-0.768213-0.676906I$	$-3.17629+2.69246I$	$-0.28093-4.84720I$
$u=-0.114533-0.357347I$ $a=-1.35824-1.81438I$ $b=-0.768213+0.676906I$	$-3.17629-2.69246I$	$-0.28093+4.84720I$
$u=\ 0.199086+0.312708I$ $a=-1.043320-0.040655I$ $b=\ 0.206884-1.238140I$	$-4.26384-0.61629I$	$-0.55814-8.09106I$
$u=\ 0.199086-0.312708I$ $a=-1.043320+0.040655I$ $b=\ 0.206884+1.238140I$	$-4.26384+0.61629I$	$-0.55814+8.09106I$
$u=-0.300707+0.176178I$ $a=-0.73109+1.94677I$ $b=-1.42436-0.01880I$	$2.99963+5.36465I$	$12.00185-5.42830I$
$u=-0.300707-0.176178I$ $a=-0.73109-1.94677I$ $b=-1.42436+0.01880I$	$2.99963-5.36465I$	$12.00185+5.42830I$
$u=\ 0.05719+1.68348I$ $a=-0.506400+0.609047I$ $b=-0.347661+0.495378I$	$-12.33570+4.40392I$	0
$u=\ 0.05719-1.68348I$ $a=-0.506400-0.609047I$ $b=-0.347661-0.495378I$	$-12.33570-4.40392I$	0
$u=-0.06429+1.75109I$ $a=\ 0.275749+0.446728I$ $b=\ 0.439231+0.416422I$	$-12.19390+4.78155I$	0
$u=-0.06429-1.75109I$ $a=\ 0.275749-0.446728I$ $b=\ 0.439231-0.416422I$	$-12.19390-4.78155I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.142557$ $a = -21.6522$ $b = \ 0.835651$	-0.427188	291.940
$u = \ 0.113032$ $a = \ 7.26839$ $b = \ 0.697821$	1.16360	10.1550

II. $\boldsymbol{I_2^u = \langle 7.54\times10^7 u^{30} + 6.14\times10^8 u^{29} + \cdots + 8.99\times10^7 b - 1.04\times10^8,\ 2.28\times 10^8 u^{30} + 1.60\times10^9 u^{29} + \cdots + 8.99\times10^7 a + 4.72\times10^8,\ u^{31} + 6u^{30} + \cdots + 27u^2 - 1\rangle}$

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2.53210u^{30} - 17.7544u^{29} + \cdots - 71.3633u - 5.24972 \\ -0.839118u^{30} - 6.83068u^{29} + \cdots + 1.62587u + 1.16190 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} -2.17968u^{30} - 9.31290u^{29} + \cdots - 59.8579u - 8.18588 \\ -1.28897u^{30} - 4.20054u^{29} + \cdots + 7.12225u - 3.10181 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2.83987u^{30} - 19.0985u^{29} + \cdots - 29.4731u + 1.62448 \\ -0.256171u^{30} - 3.06243u^{29} + \cdots - 1.50377u - 0.879822 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.26989u^{30} - 4.98483u^{29} + \cdots - 60.7486u - 7.95395 \\ -0.379172u^{30} + 0.127534u^{29} + \cdots + 6.23153u - 2.86988 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -2.80831u^{30} - 20.0829u^{29} + \cdots - 70.3192u - 4.37596 \\ -0.645109u^{30} - 5.78072u^{29} + \cdots + 0.857948u + 0.959447 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 1.97743u^{30} + 11.1095u^{29} + \cdots + 127.357u + 18.0892 \\ 1.02402u^{30} + 5.42485u^{29} + \cdots - 5.14949u - 0.162049 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.603868u^{30} - 5.03515u^{29} + \cdots + 36.8306u + 1.93288 \\ -0.686689u^{30} - 5.47183u^{29} + \cdots - 4.98451u + 3.10493 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1461514683}{89877703}u^{30} - \frac{8086163338}{89877703}u^{29} + \cdots - \frac{51551548380}{89877703}u - \frac{5515258640}{89877703}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{31} - 12u^{30} + \cdots - 3u^2 - 1$
c_2	$u^{31} - 7u^{30} + \cdots - 10u + 1$
c_3	$u^{31} - 2u^{30} + \cdots - u + 13$
c_4	$u^{31} + 4u^{29} + \cdots - 2u + 1$
c_5	$u^{31} + 6u^{30} + \cdots - 12u + 1$
c_6	$u^{31} + 7u^{30} + \cdots - 10u - 1$
c_7	$u^{31} + 6u^{30} + \cdots + 27u^2 - 1$
c_8	$u^{31} + u^{30} + \cdots + 156u + 49$
c_9	$u^{31} + u^{30} + \cdots - 15u^2 - 1$
c_{10}, c_{11}	$u^{31} - 6u^{30} + \cdots - 27u^2 + 1$
c_{12}	$u^{31} - 6u^{30} + \cdots - 12u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{31} - 22y^{30} + \cdots - 6y - 1$
c_2, c_6	$y^{31} - 13y^{30} + \cdots + 28y - 1$
c_3	$y^{31} - 18y^{30} + \cdots - 1455y - 169$
c_4	$y^{31} + 8y^{30} + \cdots + 16y^2 - 1$
c_5, c_{12}	$y^{31} + 10y^{30} + \cdots + 16y - 1$
c_7, c_{10}, c_{11}	$y^{31} + 34y^{30} + \cdots + 54y - 1$
c_8	$y^{31} + 29y^{30} + \cdots + 39722y - 2401$
c_9	$y^{31} + 17y^{30} + \cdots - 30y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.965390+0.529714I$ $a=\ \ 0.556150+0.489722I$ $b=-1.061210+0.508762I$	$0.10637-5.02110I$	$3.13722+7.80756I$
$u=-0.965390-0.529714I$ $a=\ \ 0.556150-0.489722I$ $b=-1.061210-0.508762I$	$0.10637+5.02110I$	$3.13722-7.80756I$
$u=\ \ 0.032221+1.171400I$ $a=-1.386770+0.084190I$ $b=-1.60455-0.07381I$	$0.43030+5.74357I$	$6.00000-5.60976I$
$u=\ \ 0.032221-1.171400I$ $a=-1.386770-0.084190I$ $b=-1.60455+0.07381I$	$0.43030-5.74357I$	$6.00000+5.60976I$
$u=\ \ 0.195145+1.193150I$ $a=\ \ 1.10190-2.35628I$ $b=-0.566095-0.444169I$	$-4.60693+8.02154I$	$0.-13.88052I$
$u=\ \ 0.195145-1.193150I$ $a=\ \ 1.10190+2.35628I$ $b=-0.566095+0.444169I$	$-4.60693-8.02154I$	$0.+13.88052I$
$u=-0.211598+1.206560I$ $a=\ \ 0.410374+0.203269I$ $b=\ \ 1.275200+0.226168I$	$-0.08729-1.73503I$	$6.00000+4.05768I$
$u=-0.211598-1.206560I$ $a=\ \ 0.410374-0.203269I$ $b=\ \ 1.275200-0.226168I$	$-0.08729+1.73503I$	$6.00000-4.05768I$
$u=-0.003155+0.730855I$ $a=\ \ 0.035636+0.575912I$ $b=-1.44512+0.15145I$	$2.13309-5.55164I$	$2.31699+7.15311I$
$u=-0.003155-0.730855I$ $a=\ \ 0.035636-0.575912I$ $b=-1.44512-0.15145I$	$2.13309+5.55164I$	$2.31699-7.15311I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.687065+0.208171I$ $a=-0.297047-1.061110I$ $b=\ \ 0.970172-0.301221I$	$2.86190-1.36449I$	$13.50429+1.58498I$
$u=-0.687065-0.208171I$ $a=-0.297047+1.061110I$ $b=\ \ 0.970172+0.301221I$	$2.86190+1.36449I$	$13.50429-1.58498I$
$u=\ \ 0.375229+0.609839I$ $a=\ \ 0.47768-2.17422I$ $b=-0.513348+0.224655I$	$-2.53264-5.92324I$	$6.56403+3.62035I$
$u=\ \ 0.375229-0.609839I$ $a=\ \ 0.47768+2.17422I$ $b=-0.513348-0.224655I$	$-2.53264+5.92324I$	$6.56403-3.62035I$
$u=-0.040678+1.288960I$ $a=\ \ 0.22049+2.54227I$ $b=\ \ 0.142465+1.248760I$	$-7.66939+0.31322I$	0
$u=-0.040678-1.288960I$ $a=\ \ 0.22049-2.54227I$ $b=\ \ 0.142465-1.248760I$	$-7.66939-0.31322I$	0
$u=-0.865616+0.997186I$ $a=-0.032189+0.145586I$ $b=-0.754831-0.389568I$	$-1.14639-1.39055I$	0
$u=-0.865616-0.997186I$ $a=-0.032189-0.145586I$ $b=-0.754831+0.389568I$	$-1.14639+1.39055I$	0
$u=\ \ 0.054834+1.398650I$ $a=\ \ 0.14781+2.40858I$ $b=\ \ 0.844242+0.251626I$	$-5.28196+0.64943I$	0
$u=\ \ 0.054834-1.398650I$ $a=\ \ 0.14781-2.40858I$ $b=\ \ 0.844242-0.251626I$	$-5.28196-0.64943I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.33057+1.39092I$ $a=\ \ 0.214549-1.335150I$ $b=\ \ 0.755038-0.537490I$	$-2.25696-5.16117I$	0
$u=-0.33057-1.39092I$ $a=\ \ 0.214549+1.335150I$ $b=\ \ 0.755038+0.537490I$	$-2.25696+5.16117I$	0
$u=-0.11973+1.47233I$ $a=-0.31732-1.39329I$ $b=-0.287392-1.344580I$	$-10.07670-2.28079I$	0
$u=-0.11973-1.47233I$ $a=-0.31732+1.39329I$ $b=-0.287392+1.344580I$	$-10.07670+2.28079I$	0
$u=-0.30019+1.52833I$ $a=-0.27317+1.40504I$ $b=-1.30238+0.74131I$	$-6.61918-9.43308I$	0
$u=-0.30019-1.52833I$ $a=-0.27317-1.40504I$ $b=-1.30238-0.74131I$	$-6.61918+9.43308I$	0
$u=-0.175986+0.238164I$ $a=\ \ 1.20947+0.74353I$ $b=-0.020359-1.200950I$	$-4.12466-0.99187I$	$8.09761+9.09408I$
$u=-0.175986-0.238164I$ $a=\ \ 1.20947-0.74353I$ $b=-0.020359+1.200950I$	$-4.12466+0.99187I$	$8.09761-9.09408I$
$u=-0.01650+1.74532I$ $a=-0.292008-0.300798I$ $b=-0.342131-0.079341I$	$-11.90070-4.45233I$	0
$u=-0.01650-1.74532I$ $a=-0.292008+0.300798I$ $b=-0.342131+0.079341I$	$-11.90070+4.45233I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.118124$		
$a = -24.5511$	-0.443607	-199.230
$b = \quad 0.820564$		

III. $I_3^u = \langle b-1,\ 3a-u+1,\ u^2+u+1 \rangle$

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{1}{3}u - \frac{1}{3} \\ 1 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} \frac{1}{3}u + \frac{2}{3} \\ 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} \frac{2}{3}u + \frac{4}{3} \\ \frac{1}{3}u + \frac{5}{3} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} \frac{5}{3}u + \frac{1}{3} \\ -\frac{2}{3}u - \frac{1}{3} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{3}u \\ -0.333333 \end{pmatrix}$$

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{44}{9}u + \frac{91}{9}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_{12}	$9(3y+1)^2$
c_2, c_6	$(y-1)^2$
c_3	$9(9y^2-12y+16)$
c_4	y^2-3y+9
c_7, c_9, c_{10} c_{11}	y^2+y+1
c_8	y^2

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=-0.500000+0.288675I$ $b=\ \ 1.00000$	$1.64493-2.02988I$	$12.55556-4.23390I$
$u=-0.500000-0.866025I$ $a=-0.500000-0.288675I$ $b=\ \ 1.00000$	$1.64493+2.02988I$	$12.55556+4.23390I$

IV. $I_4^u = \langle b-1,\ a+u,\ u^2+u+1 \rangle$

(i) Arc colorings

$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u+1 \\ 1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ u+1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u+1 \\ u+1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u+1 \\ u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ u+1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4u + 11$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500000+0.866025I$ $a=\ 0.500000-0.866025I$ $b=\ 1.00000$	$1.64493-2.02988I$	$9.00000+3.46410I$
$u=-0.500000-0.866025I$ $a=\ 0.500000+0.866025I$ $b=\ 1.00000$	$1.64493+2.02988I$	$9.00000-3.46410I$

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$9(u^2+u+1)(3u^2+1)(u^{31}-12u^{30}+\cdots-3u^2-1)$ $\cdot(3u^{142}-20u^{140}+\cdots+29u-1)$
c_2	$((u+1)^4)(u^{31}-7u^{30}+\cdots-10u+1)(u^{142}+2u^{141}+\cdots-356u+304)$
c_3	$9(u^2-u+1)(3u^2+6u+4)(u^{31}-2u^{30}+\cdots-u+13)$ $\cdot(3u^{142}-6u^{141}+\cdots-261246u-14332)$
c_4	$((u-1)^2)(u^2+3u+3)(u^{31}+4u^{29}+\cdots-2u+1)$ $\cdot(u^{142}+2u^{141}+\cdots+32895u-13173)$
c_5	$9(u^2-u+1)(3u^2+1)(u^{31}+6u^{30}+\cdots-12u+1)$ $\cdot(3u^{142}+12u^{141}+\cdots-11673715u-729697)$
c_6	$((u-1)^4)(u^{31}+7u^{30}+\cdots-10u-1)(u^{142}+2u^{141}+\cdots-356u+304)$
c_7	$((u^2+u+1)^2)(u^{31}+6u^{30}+\cdots+27u^2-1)$ $\cdot(u^{142}-5u^{141}+\cdots-332u+29)$
c_8	$u^4(u^{31}+u^{30}+\cdots+156u+49)(u^{142}+22u^{140}+\cdots+3840u+576)$
c_9	$((u^2-u+1)^2)(u^{31}+u^{30}+\cdots-15u^2-1)$ $\cdot(u^{142}-2u^{141}+\cdots+29864u-11279)$
c_{10}, c_{11}	$((u^2-u+1)^2)(u^{31}-6u^{30}+\cdots-27u^2+1)$ $\cdot(u^{142}-5u^{141}+\cdots-332u+29)$
c_{12}	$9(u^2+u+1)(3u^2+1)(u^{31}-6u^{30}+\cdots-12u-1)$ $\cdot(3u^{142}+12u^{141}+\cdots-11673715u-729697)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$81(3y+1)^2(y^2+y+1)(y^{31}-22y^{30}+\cdots-6y-1)$ $\cdot(9y^{142}-120y^{141}+\cdots-57y+1)$
c_2, c_6	$((y-1)^4)(y^{31}-13y^{30}+\cdots+28y-1)$ $\cdot(y^{142}-62y^{141}+\cdots+425936y+92416)$
c_3	$81(y^2+y+1)(9y^2-12y+16)(y^{31}-18y^{30}+\cdots-1455y-169)$ $\cdot(9y^{142}-138y^{141}+\cdots+22018021060y+205406224)$
c_4	$((y-1)^2)(y^2-3y+9)(y^{31}+8y^{30}+\cdots+16y^2-1)$ $\cdot(y^{142}+26y^{141}+\cdots+7659337353y+173527929)$
c_5, c_{12}	$81(3y+1)^2(y^2+y+1)(y^{31}+10y^{30}+\cdots+16y-1)$ $\cdot(9y^{142}+852y^{141}+\cdots+16938989993629y+532457711809)$
c_7, c_{10}, c_{11}	$((y^2+y+1)^2)(y^{31}+34y^{30}+\cdots+54y-1)$ $\cdot(y^{142}+139y^{141}+\cdots-94158y+841)$
c_8	$y^4(y^{31}+29y^{30}+\cdots+39722y-2401)$ $\cdot(y^{142}+44y^{141}+\cdots-2230272y+331776)$
c_9	$((y^2+y+1)^2)(y^{31}+17y^{30}+\cdots-30y-1)$ $\cdot(y^{142}+2y^{141}+\cdots-7484772366y+127215841)$