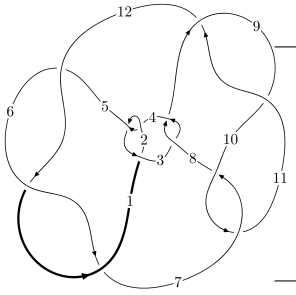
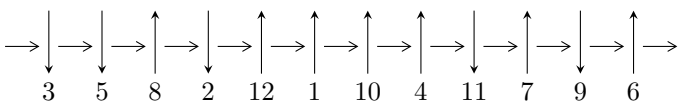
$12a_{0122}$ $(K12a_{0122})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -2.85904 \times 10^{163} u^{70} - 4.35691 \times 10^{163} u^{69} + \cdots + 1.78033 \times 10^{166} d + 6.66454 \times 10^{165}, \\
& 6.92432 \times 10^{163} u^{70} + 3.87141 \times 10^{164} u^{69} + \cdots + 1.42427 \times 10^{167} c - 4.02166 \times 10^{167}, \\
& -3.44890 \times 10^{145} u^{70} - 6.44692 \times 10^{145} u^{69} + \cdots + 2.51636 \times 10^{148} b - 3.51686 \times 10^{147}, \\
& 2.31798 \times 10^{146} u^{70} + 5.72081 \times 10^{146} u^{69} + \cdots + 1.00654 \times 10^{149} a - 4.30269 \times 10^{149}, \\
& u^{71} + 2u^{70} + \cdots - 1536u^2 + 512 \rangle \\
I_2^u = \langle & d,\ c-1,\ -a^2u^2 + b + 2a - 2,\ 2u^8a^2 - 3u^8a + \cdots + 3a - 1,\ u^9 - u^8 - 2u^7 + 3u^6 + u^5 - 3u^4 + 2u^3 - u + 1 \rangle
\end{aligned}$$

$$\begin{aligned}
I_1^v &= \langle c,\ d-1,\ b,\ a-1,\ v^2 - v + 1 \rangle \\
I_2^v &= \langle a,\ d+1,\ c+a,\ b-1,\ v^2 + v + 1 \rangle \\
I_3^v &= \langle a,\ d,\ c-1,\ b-1,\ v-1 \rangle \\
I_4^v &= \langle a,\ d^2v^2 + dv + 1,\ v^2dc - v^2d + cv + a - v,\ da - c + 1,\ c^2v^2 + cav - 2v^2c + a^2 - av + v^2,\ b-1 \rangle
\end{aligned}$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 103 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[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. $\boldsymbol{I_1^u =}$
$\langle \mathbf{-2.86\times 10^{163}u^{70}-4.36\times 10^{163}u^{69}+\cdots+1.78\times 10^{166}d+6.66\times 10^{165},\ 6.92\times 10^{163}u^{70}+3.87\times 10^{164}u^{69}+\cdots+1.42\times 10^{167}c-4.02\times 10^{167},\ -3.45\times 10^{145}u^{70}-6.45\times 10^{145}u^{69}+\cdots+2.52\times 10^{148}b-3.52\times 10^{147},\ 2.32\times 10^{146}u^{70}+5.72\times 10^{146}u^{69}+\cdots+1.01\times 10^{149}a-4.30\times 10^{149},\ u^{71}+2u^{70}+\cdots-1536u^2+512}\rangle$

(i) Arc colorings

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

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

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

$$a_5 = \begin{pmatrix}-0.00230291u^{70}-0.00568363u^{69}+\cdots+2.16416u+4.27473\\0.00137059u^{70}+0.00256201u^{69}+\cdots-0.903349u+0.139760\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}-0.000486167u^{70}-0.00271817u^{69}+\cdots+1.59401u+2.82367\\0.00160590u^{70}+0.00244724u^{69}+\cdots-0.182976u-0.374342\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.00198935u^{70}-0.00509444u^{69}+\cdots+1.69724u+3.40383\\-0.000342331u^{70}-0.000350145u^{69}+\cdots-0.477053u-0.323800\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-0.00230291u^{70}-0.00568363u^{69}+\cdots+2.16416u+4.27473\\0.000610137u^{70}+0.000608739u^{69}+\cdots-0.275743u-0.691592\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.00169278u^{70}-0.00507489u^{69}+\cdots+1.88842u+3.58313\\0.000610137u^{70}+0.000608739u^{69}+\cdots-0.275743u-0.691592\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.000942281u^{70}-0.000435385u^{69}+\cdots+0.824718u+2.36850\\0.00186115u^{70}+0.00285291u^{69}+\cdots-0.220899u-1.12345\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.000964925u^{70}+0.00251480u^{69}+\cdots-0.510969u-0.979894\\-0.00121332u^{70}-0.00285890u^{69}+\cdots+0.588206u+1.41140\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.00150252u^{70}-0.00389403u^{69}+\cdots+1.52807u+2.30414\\-0.00101635u^{70}-0.00117586u^{69}+\cdots-0.0659421u-0.519527\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.000644196u^{70}-0.0111115u^{69}+\cdots+0.863041u+15.1191$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{71} + 30u^{70} + \cdots + 4640u + 256$
c_2, c_4	$u^{71} - 8u^{70} + \cdots + 56u - 16$
c_3, c_8	$u^{71} - 2u^{70} + \cdots + 1536u^2 - 512$
c_5, c_6, c_{12}	$u^{71} + 8u^{70} + \cdots + 56u - 16$
c_7, c_{10}	$u^{71} + 2u^{70} + \cdots - 5u^2 - 4$
c_9, c_{11}	$u^{71} + 24u^{70} + \cdots - 40u - 16$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{71} + 30y^{70} + \cdots + 5022208y - 65536$
c_2, c_4	$y^{71} - 30y^{70} + \cdots + 4640y - 256$
c_3, c_8	$y^{71} - 30y^{70} + \cdots + 1572864y - 262144$
c_5, c_6, c_{12}	$y^{71} - 70y^{70} + \cdots - 1504y - 256$
c_7, c_{10}	$y^{71} + 24y^{70} + \cdots - 40y - 16$
c_9, c_{11}	$y^{71} + 48y^{70} + \cdots - 6880y - 256$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.372595 + 0.922213I$ $a = 0.485748 - 0.116000I$ $b = 0.947611 + 0.465102I$ $c = -0.384570 - 0.910845I$ $d = -0.352109 - 0.909932I$	$-0.206074 - 1.106620I$	$1.82615 + 2.10157I$
$u = 0.372595 - 0.922213I$ $a = 0.485748 + 0.116000I$ $b = 0.947611 - 0.465102I$ $c = -0.384570 + 0.910845I$ $d = -0.352109 + 0.909932I$	$-0.206074 + 1.106620I$	$1.82615 - 2.10157I$
$u = -0.661751 + 0.731261I$ $a = 0.455879 + 0.075380I$ $b = 1.135190 - 0.353055I$ $c = -0.541629 + 0.798372I$ $d = -0.648241 + 1.044530I$	$-5.31233 + 1.23150I$	$-6.16629 - 0.79467I$
$u = -0.661751 - 0.731261I$ $a = 0.455879 - 0.075380I$ $b = 1.135190 + 0.353055I$ $c = -0.541629 - 0.798372I$ $d = -0.648241 - 1.044530I$	$-5.31233 - 1.23150I$	$-6.16629 + 0.79467I$
$u = -0.216094 + 0.961248I$ $a = 0.507916 + 0.138278I$ $b = 0.832973 - 0.499020I$ $c = 0.383038 - 1.211050I$ $d = 1.32096 - 2.52250I$	$2.60149 + 2.06138I$	$6.60052 - 3.22142I$
$u = -0.216094 - 0.961248I$ $a = 0.507916 - 0.138278I$ $b = 0.832973 + 0.499020I$ $c = 0.383038 + 1.211050I$ $d = 1.32096 + 2.52250I$	$2.60149 - 2.06138I$	$6.60052 + 3.22142I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.510340 + 0.919175I$		
$a = 0.466316 - 0.105830I$		
$b = 1.039430 + 0.462844I$	$-1.22762 - 4.53498I$	$-0.48837 + 4.83158I$
$c = 0.06669 + 1.49411I$		
$d = 0.71893 + 3.03674I$		
$u = 0.510340 - 0.919175I$		
$a = 0.466316 + 0.105830I$		
$b = 1.039430 - 0.462844I$	$-1.22762 + 4.53498I$	$-0.48837 - 4.83158I$
$c = 0.06669 - 1.49411I$		
$d = 0.71893 - 3.03674I$		
$u = -0.843761 + 0.417994I$		
$a = 0.442312 + 0.038598I$		
$b = 1.243760 - 0.195802I$	$-1.74336 - 3.95563I$	$0.57229 + 6.63484I$
$c = -0.734788 + 0.784462I$		
$d = -1.01432 + 1.24587I$		
$u = -0.843761 - 0.417994I$		
$a = 0.442312 - 0.038598I$		
$b = 1.243760 + 0.195802I$	$-1.74336 + 3.95563I$	$0.57229 - 6.63484I$
$c = -0.734788 - 0.784462I$		
$d = -1.01432 - 1.24587I$		
$u = 0.980094 + 0.401535I$		
$a = 0.12281 - 1.97463I$		
$b = -0.968625 + 0.504474I$	$0.13020 + 4.00402I$	$4.41276 - 6.69495I$
$c = -1.197140 - 0.714849I$		
$d = -0.337051 + 0.964290I$		
$u = 0.980094 - 0.401535I$		
$a = 0.12281 + 1.97463I$		
$b = -0.968625 - 0.504474I$	$0.13020 - 4.00402I$	$4.41276 + 6.69495I$
$c = -1.197140 + 0.714849I$		
$d = -0.337051 - 0.964290I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.482781+0.984718I$ $a=\ \ 0.465372+0.116264I$ $b=\ \ 1.022580-0.505302I$ $c=-0.456078+0.912887I$ $d=-0.380030+1.013380I$	$-0.99233+6.45679I$	$0.34368-6.97496I$
$u=-0.482781-0.984718I$ $a=\ \ 0.465372-0.116264I$ $b=\ \ 1.022580+0.505302I$ $c=-0.456078-0.912887I$ $d=-0.380030-1.013380I$	$-0.99233-6.45679I$	$0.34368+6.97496I$
$u=-0.777198+0.427799I$ $a=\ \ 0.07067+2.71633I$ $b=-0.990428-0.367895I$ $c=-1.55052+1.42781I$ $d=-0.496780-0.852703I$	$-1.94652+0.34051I$	$-0.37051+3.03065I$
$u=-0.777198-0.427799I$ $a=\ \ 0.07067-2.71633I$ $b=-0.990428+0.367895I$ $c=-1.55052-1.42781I$ $d=-0.496780+0.852703I$	$-1.94652-0.34051I$	$-0.37051-3.03065I$
$u=-1.127060+0.152551I$ $a=\ \ 0.625091-1.046840I$ $b=-0.579522+0.704176I$ $c=-2.04566+1.44271I$ $d=\ \ 1.04128-1.78221I$	$4.50468+2.47836I$	$7.49354-3.38416I$
$u=-1.127060-0.152551I$ $a=\ \ 0.625091+1.046840I$ $b=-0.579522-0.704176I$ $c=-2.04566-1.44271I$ $d=\ \ 1.04128+1.78221I$	$4.50468-2.47836I$	$7.49354+3.38416I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.982347+0.611518I$ $a=-0.39397+1.91571I$ $b=-1.102990-0.500818I$ $c=-1.67667+0.41013I$ $d=-0.438066-1.090250I$	$-4.29573-6.37313I$	$-3.00781+7.19219I$
$u=-0.982347-0.611518I$ $a=-0.39397-1.91571I$ $b=-1.102990+0.500818I$ $c=-1.67667-0.41013I$ $d=-0.438066+1.090250I$	$-4.29573+6.37313I$	$-3.00781-7.19219I$
$u=-1.173990+0.222972I$ $a=\ \ 0.579369-0.967956I$ $b=-0.544738+0.760609I$ $c=-0.311368-0.051508I$ $d=\ \ 0.148549+1.017150I$	$5.09577-1.83902I$	$8.24819+0.I$
$u=-1.173990-0.222972I$ $a=\ \ 0.579369+0.967956I$ $b=-0.544738-0.760609I$ $c=-0.311368+0.051508I$ $d=\ \ 0.148549-1.017150I$	$5.09577+1.83902I$	$8.24819+0.I$
$u=\ \ 1.203430+0.094057I$ $a=\ \ 0.526070+1.096070I$ $b=-0.644095-0.741530I$ $c=-0.422317+0.128209I$ $d=\ \ 0.061447-1.014150I$	$5.36659-3.89584I$	$8.41567+5.55146I$
$u=\ \ 1.203430-0.094057I$ $a=\ \ 0.526070-1.096070I$ $b=-0.644095+0.741530I$ $c=-0.422317-0.128209I$ $d=\ \ 0.061447+1.014150I$	$5.36659+3.89584I$	$8.41567-5.55146I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.117530+0.478181I$ $a=\ \ 0.592431-0.750598I$ $b=-0.352089+0.820889I$ $c=-2.11325+0.00351I$ $d=\ \ 0.82348-1.49852I$	$3.15531-5.12152I$	0
$u=-1.117530-0.478181I$ $a=\ \ 0.592431+0.750598I$ $b=-0.352089-0.820889I$ $c=-2.11325-0.00351I$ $d=\ \ 0.82348+1.49852I$	$3.15531+5.12152I$	0
$u=\ \ 1.137650+0.460214I$ $a=-0.04379-1.65202I$ $b=-1.016040+0.604894I$ $c=\ \ 1.76875+1.86712I$ $d=\ \ 0.70340-2.59306I$	$3.19656+2.55854I$	0
$u=\ \ 1.137650-0.460214I$ $a=-0.04379+1.65202I$ $b=-1.016040-0.604894I$ $c=\ \ 1.76875-1.86712I$ $d=\ \ 0.70340+2.59306I$	$3.19656-2.55854I$	0
$u=\ \ 0.725491+0.260568I$ $a=\ \ 0.454620-0.024037I$ $b=\ \ 1.193510+0.115977I$ $c=-0.858903-0.665057I$ $d=-1.33178-1.09391I$	$-1.09934-1.05821I$	$3.09814-1.72718I$
$u=\ \ 0.725491-0.260568I$ $a=\ \ 0.454620+0.024037I$ $b=\ \ 1.193510-0.115977I$ $c=-0.858903+0.665057I$ $d=-1.33178+1.09391I$	$-1.09934+1.05821I$	$3.09814+1.72718I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.247645 + 1.226350I$ $a = 0.509066 + 0.265043I$ $b = 0.545453 - 0.804634I$ $c = 0.148746 - 0.746604I$ $d = 0.89036 - 1.73101I$	$6.94619 + 1.12108I$	0
$u = 0.247645 - 1.226350I$ $a = 0.509066 - 0.265043I$ $b = 0.545453 + 0.804634I$ $c = 0.148746 + 0.746604I$ $d = 0.89036 + 1.73101I$	$6.94619 - 1.12108I$	0
$u = -0.464983 + 0.581438I$ $a = 0.788881 - 0.333426I$ $b = 0.075493 + 0.454564I$ $c = 0.323459 + 0.239200I$ $d = 0.936440 + 0.862765I$	$1.011140 + 0.938516I$	$3.66296 + 0.79830I$
$u = -0.464983 - 0.581438I$ $a = 0.788881 + 0.333426I$ $b = 0.075493 - 0.454564I$ $c = 0.323459 - 0.239200I$ $d = 0.936440 - 0.862765I$	$1.011140 - 0.938516I$	$3.66296 - 0.79830I$
$u = -0.368570 + 1.210560I$ $a = 0.515481 - 0.295559I$ $b = 0.459973 + 0.837098I$ $c = 0.122518 + 0.676794I$ $d = 0.83963 + 1.62701I$	$6.42018 + 4.68044I$	0
$u = -0.368570 - 1.210560I$ $a = 0.515481 + 0.295559I$ $b = 0.459973 - 0.837098I$ $c = 0.122518 - 0.676794I$ $d = 0.83963 - 1.62701I$	$6.42018 - 4.68044I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.248660 + 0.306382I$ $a = 0.516438 + 0.892389I$ $b = -0.514200 - 0.839448I$ $c = -1.73216 - 0.62281I$ $d = 0.84440 + 1.69272I$	$7.51654 + 1.91781I$	0
$u = 1.248660 - 0.306382I$ $a = 0.516438 - 0.892389I$ $b = -0.514200 + 0.839448I$ $c = -1.73216 + 0.62281I$ $d = 0.84440 - 1.69272I$	$7.51654 - 1.91781I$	0
$u = -0.504947 + 1.215580I$ $a = 0.443142 + 0.140469I$ $b = 1.050580 - 0.650000I$ $c = -0.011223 - 1.220060I$ $d = 0.60444 - 2.51848I$	$5.42990 + 4.32973I$	0
$u = -0.504947 - 1.215580I$ $a = 0.443142 - 0.140469I$ $b = 1.050580 + 0.650000I$ $c = -0.011223 + 1.220060I$ $d = 0.60444 + 2.51848I$	$5.42990 - 4.32973I$	0
$u = 1.152900 + 0.667545I$ $a = -0.37747 - 1.57567I$ $b = -1.143790 + 0.600204I$ $c = 2.23046 + 0.59659I$ $d = 0.41994 - 2.63177I$	$0.80414 + 10.42400I$	0
$u = 1.152900 - 0.667545I$ $a = -0.37747 + 1.57567I$ $b = -1.143790 - 0.600204I$ $c = 2.23046 - 0.59659I$ $d = 0.41994 + 2.63177I$	$0.80414 - 10.42400I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.185800 + 0.609579I$ $a = -0.27825 - 1.55393I$ $b = -1.111650 + 0.623537I$ $c = -1.371570 - 0.115410I$ $d = -0.331493 + 1.161530I$	$2.33908 + 6.73341I$	0
$u = 1.185800 - 0.609579I$ $a = -0.27825 + 1.55393I$ $b = -1.111650 - 0.623537I$ $c = -1.371570 + 0.115410I$ $d = -0.331493 - 1.161530I$	$2.33908 - 6.73341I$	0
$u = 0.593784 + 1.208600I$ $a = 0.435237 - 0.132054I$ $b = 1.103920 + 0.638344I$ $c = -0.064916 + 1.245600I$ $d = 0.50321 + 2.55667I$	$4.48821 - 10.17210I$	0
$u = 0.593784 - 1.208600I$ $a = 0.435237 + 0.132054I$ $b = 1.103920 - 0.638344I$ $c = -0.064916 - 1.245600I$ $d = 0.50321 - 2.55667I$	$4.48821 + 10.17210I$	0
$u = -1.233000 + 0.545251I$ $a = -0.17535 + 1.50144I$ $b = -1.076740 - 0.657064I$ $c = 1.59832 - 1.09061I$ $d = 0.55162 + 2.51495I$	$5.82408 - 7.48275I$	0
$u = -1.233000 - 0.545251I$ $a = -0.17535 - 1.50144I$ $b = -1.076740 + 0.657064I$ $c = 1.59832 + 1.09061I$ $d = 0.55162 - 2.51495I$	$5.82408 + 7.48275I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.176438 + 0.617781I$ $a = 0.536936 - 0.059094I$ $b = 0.840129 + 0.202520I$ $c = 1.43629 + 1.69472I$ $d = 3.37169 + 3.42725I$	$0.42738 + 1.60074I$	$0.77404 - 2.18898I$
$u = 0.176438 - 0.617781I$ $a = 0.536936 + 0.059094I$ $b = 0.840129 - 0.202520I$ $c = 1.43629 - 1.69472I$ $d = 3.37169 - 3.42725I$	$0.42738 - 1.60074I$	$0.77404 + 2.18898I$
$u = -1.181300 + 0.680585I$ $a = -0.38029 + 1.52881I$ $b = -1.153230 - 0.615988I$ $c = -1.45518 + 0.03477I$ $d = -0.355666 - 1.191500I$	$1.22414 - 12.55690I$	0
$u = -1.181300 - 0.680585I$ $a = -0.38029 - 1.52881I$ $b = -1.153230 + 0.615988I$ $c = -1.45518 - 0.03477I$ $d = -0.355666 + 1.191500I$	$1.22414 + 12.55690I$	0
$u = -0.010891 + 0.626888I$ $a = 0.651032 - 0.036187I$ $b = 0.531292 + 0.085114I$ $c = 1.184550 - 0.522827I$ $d = 0.081339 - 0.143491I$	$0.65592 - 2.35939I$	$1.51759 + 4.85897I$
$u = -0.010891 - 0.626888I$ $a = 0.651032 + 0.036187I$ $b = 0.531292 - 0.085114I$ $c = 1.184550 + 0.522827I$ $d = 0.081339 + 0.143491I$	$0.65592 + 2.35939I$	$1.51759 - 4.85897I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.617428 + 0.085193I$ $a = 2.98131 - 1.84944I$ $b = -0.757787 + 0.150255I$ $c = 1.27420 - 1.43204I$ $d = -0.305853 + 0.300706I$	$-0.93328 + 2.67780I$	$3.99337 - 7.95500I$
$u = 0.617428 - 0.085193I$ $a = 2.98131 + 1.84944I$ $b = -0.757787 - 0.150255I$ $c = 1.27420 + 1.43204I$ $d = -0.305853 - 0.300706I$	$-0.93328 - 2.67780I$	$3.99337 + 7.95500I$
$u = -0.591164$ $a = 1.74742$ $b = -0.427729$ $c = 0.644601$ $d = 0.251389$	1.02886	10.5160
$u = 0.282782 + 0.492299I$ $a = 0.508237 - 0.042524I$ $b = 0.953908 + 0.163482I$ $c = -0.332411 - 0.449116I$ $d = -0.705044 - 0.471800I$	$-1.67984 - 0.60130I$	$-3.90300 + 0.33160I$
$u = 0.282782 - 0.492299I$ $a = 0.508237 + 0.042524I$ $b = 0.953908 - 0.163482I$ $c = -0.332411 + 0.449116I$ $d = -0.705044 + 0.471800I$	$-1.67984 + 0.60130I$	$-3.90300 - 0.33160I$
$u = 1.33133 + 0.61244I$ $a = 0.451627 + 0.707103I$ $b = -0.358449 - 1.004460I$ $c = -1.50323 + 0.13255I$ $d = 0.65119 + 1.56469I$	$10.54930 + 5.35435I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.33133 - 0.61244I$ $a = 0.451627 - 0.707103I$ $b = -0.358449 + 1.004460I$ $c = -1.50323 - 0.13255I$ $d = 0.65119 - 1.56469I$	$10.54930 - 5.35435I$	0
$u = -1.29995 + 0.68416I$ $a = 0.458847 - 0.670856I$ $b = -0.305396 + 1.015540I$ $c = -1.51100 - 0.26879I$ $d = 0.62788 - 1.52561I$	$9.4739 - 11.4004I$	0
$u = -1.29995 - 0.68416I$ $a = 0.458847 + 0.670856I$ $b = -0.305396 - 1.015540I$ $c = -1.51100 + 0.26879I$ $d = 0.62788 + 1.52561I$	$9.4739 + 11.4004I$	0
$u = -1.27239 + 0.75883I$ $a = -0.42552 + 1.37781I$ $b = -1.204630 - 0.662591I$ $c = 1.69978 - 0.12049I$ $d = 0.32788 + 2.50055I$	$7.95427 - 11.37060I$	0
$u = -1.27239 - 0.75883I$ $a = -0.42552 - 1.37781I$ $b = -1.204630 + 0.662591I$ $c = 1.69978 + 0.12049I$ $d = 0.32788 - 2.50055I$	$7.95427 + 11.37060I$	0
$u = 1.24401 + 0.80606I$ $a = -0.49137 - 1.37976I$ $b = -1.229060 + 0.643191I$ $c = 1.80328 - 0.06773I$ $d = 0.28176 - 2.52102I$	$6.6365 + 17.3722I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.24401 - 0.80606I$ $a = -0.49137 + 1.37976I$ $b = -1.229060 - 0.643191I$ $c = 1.80328 + 0.06773I$ $d = 0.28176 + 2.52102I$	$6.6365 - 17.3722I$	0
$u = 1.51788 + 0.06429I$ $a = 0.205748 - 1.062330I$ $b = -0.824278 + 0.907296I$ $c = -0.424327 + 0.865938I$ $d = 0.67197 - 2.01899I$	$13.78050 + 0.08878I$	0
$u = 1.51788 - 0.06429I$ $a = 0.205748 + 1.062330I$ $b = -0.824278 - 0.907296I$ $c = -0.424327 - 0.865938I$ $d = 0.67197 + 2.01899I$	$13.78050 - 0.08878I$	0
$u = -1.51414 + 0.16464I$ $a = 0.145714 + 1.112210I$ $b = -0.884193 - 0.883937I$ $c = -0.163454 - 0.908611I$ $d = 0.64894 + 2.08801I$	$13.6007 - 6.3599I$	0
$u = -1.51414 - 0.16464I$ $a = 0.145714 - 1.112210I$ $b = -0.884193 + 0.883937I$ $c = -0.163454 + 0.908611I$ $d = 0.64894 - 2.08801I$	$13.6007 + 6.3599I$	0

II.

$\boldsymbol{I_2^u = \langle d,\ c-1,\ -a^2u^2+b+2a-2,\ 2u^8a^2-3u^8a+\cdots+3a-1,\ u^9-u^8+\cdots-u+1\rangle}$

(i) Arc colorings

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

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

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

$$a_5 = \begin{pmatrix} a \\ a^2u^2 - 2a + 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_1 = \begin{pmatrix} -a^2u^2 - u^2a + 3a - 2 \\ -a^2u^2 - u^2a + 2a - 2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^4 - u^2 + 1 \\ -u^6 + 2u^4 - u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^7 - 2u^5 + 2u^3 \\ -u^8 + u^7 + 3u^6 - 2u^5 - 3u^4 + 2u^3 + 1 \end{pmatrix}$$

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -4u^7 + 8u^5 - 4u^4 - 8u^3 + 4u^2 - 4u + 2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27}+18u^{26}+\cdots+5u+1$
c_2, c_4, c_5 c_6, c_{12}	$u^{27}-9u^{25}+\cdots-u+1$
c_3, c_8	$(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^3$
c_7, c_{10}	$(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)^3$
c_9, c_{11}	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} - 18y^{26} + \cdots - 15y - 1$
c_2, c_4, c_5 c_6, c_{12}	$y^{27} - 18y^{26} + \cdots + 5y - 1$
c_3, c_8	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)^3$
c_7, c_{10}	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)^3$
c_9, c_{11}	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)^3$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.772920 + 0.510351I$		
$a = 0.780004 + 0.567068I$		
$b = -0.161261 - 0.609769I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$c = 1.00000$		
$d = 0$		
$u = 0.772920 + 0.510351I$		
$a = 0.448284 - 0.048652I$		
$b = 1.204760 + 0.239279I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$c = 1.00000$		
$d = 0$		
$u = 0.772920 + 0.510351I$		
$a = -0.31258 - 2.66243I$		
$b = -1.043500 + 0.370490I$	$-1.78344 + 2.09337I$	$-0.51499 - 4.16283I$
$c = 1.00000$		
$d = 0$		
$u = 0.772920 - 0.510351I$		
$a = 0.780004 - 0.567068I$		
$b = -0.161261 + 0.609769I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$c = 1.00000$		
$d = 0$		
$u = 0.772920 - 0.510351I$		
$a = 0.448284 + 0.048652I$		
$b = 1.204760 - 0.239279I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$c = 1.00000$		
$d = 0$		
$u = 0.772920 - 0.510351I$		
$a = -0.31258 + 2.66243I$		
$b = -1.043500 - 0.370490I$	$-1.78344 - 2.09337I$	$-0.51499 + 4.16283I$
$c = 1.00000$		
$d = 0$		

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.825933$ $a=\ \ 0.445577$ $b=\ \ 1.24428$ $c=\ \ 1.00000$ $d=\ \ 0$	1.19845	8.65230
$u=-0.825933$ $a=\ \ 1.24313+1.32082I$ $b=-0.622141-0.401472I$ $c=\ \ 1.00000$ $d=\ \ 0$	1.19845	8.65230
$u=-0.825933$ $a=\ \ 1.24313-1.32082I$ $b=-0.622141+0.401472I$ $c=\ \ 1.00000$ $d=\ \ 0$	1.19845	8.65230
$u=-1.173910+0.391555I$ $a=\ \ 0.569278-0.822486I$ $b=-0.431041+0.822025I$ $c=\ \ 1.00000$ $d=\ \ 0$	$4.37135-1.33617I$	$7.28409+0.70175I$
$u=-1.173910+0.391555I$ $a=\ \ 0.06212+1.57425I$ $b=-0.974973-0.634235I$ $c=\ \ 1.00000$ $d=\ \ 0$	$4.37135-1.33617I$	$7.28409+0.70175I$
$u=-1.173910+0.391555I$ $a=\ \ 0.413109+0.032243I$ $b=\ \ 1.40601-0.18779I$ $c=\ \ 1.00000$ $d=\ \ 0$	$4.37135-1.33617I$	$7.28409+0.70175I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.173910-0.391555I$ $a=\ 0.569278+0.822486I$ $b=-0.431041-0.822025I$ $c=\ 1.00000$ $d=\ 0$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=-1.173910-0.391555I$ $a=\ 0.06212-1.57425I$ $b=-0.974973+0.634235I$ $c=\ 1.00000$ $d=\ 0$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=-1.173910-0.391555I$ $a=\ 0.413109-0.032243I$ $b=\ 1.40601+0.18779I$ $c=\ 1.00000$ $d=\ 0$	$4.37135+1.33617I$	$7.28409-0.70175I$
$u=\ 0.141484+0.739668I$ $a=\ 0.654691+0.167520I$ $b=\ 0.433577-0.366819I$ $c=\ 1.00000$ $d=\ 0$	$0.61694-2.45442I$	$2.32792+2.91298I$
$u=\ 0.141484+0.739668I$ $a=\ 0.548644-0.094284I$ $b=\ 0.770392+0.304242I$ $c=\ 1.00000$ $d=\ 0$	$0.61694-2.45442I$	$2.32792+2.91298I$
$u=\ 0.141484+0.739668I$ $a=-4.48093-1.37474I$ $b=-1.203970+0.062577I$ $c=\ 1.00000$ $d=\ 0$	$0.61694-2.45442I$	$2.32792+2.91298I$

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.141484-0.739668I$		
$a=$	$0.654691-0.167520I$		
$b=$	$0.433577+0.366819I$	$0.61694+2.45442I$	$2.32792-2.91298I$
$c=$	1.00000		
$d=$	0		
$u=$	$0.141484-0.739668I$		
$a=$	$0.548644+0.094284I$		
$b=$	$0.770392-0.304242I$	$0.61694+2.45442I$	$2.32792-2.91298I$
$c=$	1.00000		
$d=$	0		
$u=$	$0.141484-0.739668I$		
$a=$	$-4.48093+1.37474I$		
$b=$	$-1.203970-0.062577I$	$0.61694+2.45442I$	$2.32792-2.91298I$
$c=$	1.00000		
$d=$	0		
$u=$	$1.172470+0.500383I$		
$a=$	$0.552608+0.748050I$		
$b=$	$-0.361113-0.864843I$	$3.59813+7.08493I$	$5.57680-5.91335I$
$c=$	1.00000		
$d=$	0		
$u=$	$1.172470+0.500383I$		
$a=$	$0.411628-0.041272I$		
$b=$	$1.40520+0.24116I$	$3.59813+7.08493I$	$5.57680-5.91335I$
$c=$	1.00000		
$d=$	0		
$u=$	$1.172470+0.500383I$		
$a=$	$-0.11277-1.59540I$		
$b=$	$-1.044080+0.623685I$	$3.59813+7.08493I$	$5.57680-5.91335I$
$c=$	1.00000		
$d=$	0		

	Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$1.172470-0.500383I$		
$a=$	$0.552608-0.748050I$		
$b=$	$-0.361113+0.864843I$	$3.59813-7.08493I$	$5.57680+5.91335I$
$c=$	1.00000		
$d=$	0		
$u=$	$1.172470-0.500383I$		
$a=$	$0.411628+0.041272I$		
$b=$	$1.40520-0.24116I$	$3.59813-7.08493I$	$5.57680+5.91335I$
$c=$	1.00000		
$d=$	0		
$u=$	$1.172470-0.500383I$		
$a=$	$-0.11277+1.59540I$		
$b=$	$-1.044080-0.623685I$	$3.59813-7.08493I$	$5.57680+5.91335I$
$c=$	1.00000		
$d=$	0		

III. $I_1^v = \langle c,\ d-1,\ b,\ a-1,\ v^2-v+1 \rangle$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

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

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

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

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

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4v + 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

	Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=$	$0.500000+0.866025I$		
$a=$	1.00000		
$b=$	0	$1.64493-2.02988I$	$9.00000+3.46410I$
$c=$	0		
$d=$	1.00000		
$v=$	$0.500000-0.866025I$		
$a=$	1.00000		
$b=$	0	$1.64493+2.02988I$	$9.00000-3.46410I$
$c=$	0		
$d=$	1.00000		

IV. $I_2^v = \langle a,\ d+1,\ c+a,\ b-1,\ v^2+v+1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4v - 5$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -0.500000 + 0.866025I$		
$a = 0$		
$b = 1.00000$	$-1.64493 + 2.02988I$	$-3.00000 - 3.46410I$
$c = 0$		
$d = -1.00000$		
$v = -0.500000 - 0.866025I$		
$a = 0$		
$b = 1.00000$	$-1.64493 - 2.02988I$	$-3.00000 + 3.46410I$
$c = 0$		
$d = -1.00000$		

V. $I_3^v = \langle a,\ d,\ c-1,\ b-1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 0$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^v		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0		
$b =$	1.00000	0	0
$c =$	1.00000		
$d =$	0		

VI. $\boldsymbol{I_4^v = \langle a,\ d^2v^2 + dv + 1,\ v^2dc - v^2d + \cdots + a - v,\ da - c + 1,\ c^2v^2 - 2v^2c + \cdots + a^2 - av,\ b - 1\rangle}$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ d \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ d+1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} v \\ 0 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} v^2d+1 \\ d \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -v^2d+dv \\ d^2v \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ d \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -d^3v - 4dv - v^2$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=\cdots$		
$a=\cdots$		
$b=\cdots$	$2.02988I$	$0.28251-3.79845I$
$c=\cdots$		
$d=\cdots$		

VII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^2(u-1)^3(u^{27}+18u^{26}+\cdots+5u+1)$ $\cdot(u^{71}+30u^{70}+\cdots+4640u+256)$
c_2	$u^2(u-1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}-8u^{70}+\cdots+56u-16)$
c_3, c_8	$u^5(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)^3$ $\cdot(u^{71}-2u^{70}+\cdots+1536u^2-512)$
c_4	$u^2(u+1)^3(u^{27}-9u^{25}+\cdots-u+1)(u^{71}-8u^{70}+\cdots+56u-16)$
c_5, c_6	$u^2(u-1)^2(u+1)(u^{27}-9u^{25}+\cdots-u+1)(u^{71}+8u^{70}+\cdots+56u-16)$
c_7	$u(u^2+u+1)^2(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)^3$ $\cdot(u^{71}+2u^{70}+\cdots-5u^2-4)$
c_9	$u(u^2-u+1)^2$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$ $\cdot(u^{71}+24u^{70}+\cdots-40u-16)$
c_{10}	$u(u^2-u+1)^2(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)^3$ $\cdot(u^{71}+2u^{70}+\cdots-5u^2-4)$
c_{11}	$u(u^2+u+1)^2$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)^3$ $\cdot(u^{71}+24u^{70}+\cdots-40u-16)$
c_{12}	$u^2(u-1)(u+1)^2(u^{27}-9u^{25}+\cdots-u+1)(u^{71}+8u^{70}+\cdots+56u-16)$

VIII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots-15y-1)$ $\cdot(y^{71}+30y^{70}+\cdots+5022208y-65536)$
c_2, c_4	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots+5y-1)$ $\cdot(y^{71}-30y^{70}+\cdots+4640y-256)$
c_3, c_8	$y^5(y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1)^3$ $\cdot(y^{71}-30y^{70}+\cdots+1572864y-262144)$
c_5, c_6, c_{12}	$y^2(y-1)^3(y^{27}-18y^{26}+\cdots+5y-1)$ $\cdot(y^{71}-70y^{70}+\cdots-1504y-256)$
c_7, c_{10}	$y(y^2+y+1)^2$ $\cdot(y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1)^3$ $\cdot(y^{71}+24y^{70}+\cdots-40y-16)$
c_9, c_{11}	$y(y^2+y+1)^2$ $\cdot(y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1)^3$ $\cdot(y^{71}+48y^{70}+\cdots-6880y-256)$