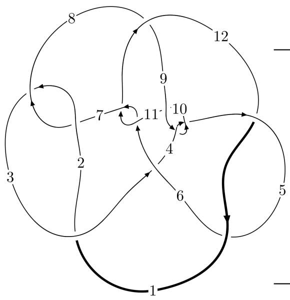
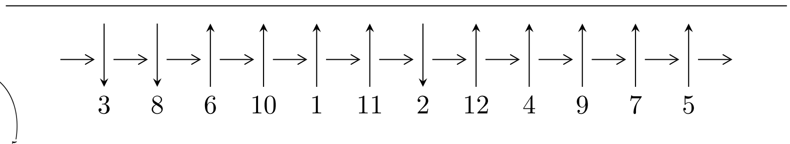
$12a_{0701}$ $(K12a_{0701})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -7.70053 \times 10^{53} u^{39} - 1.74213 \times 10^{54} u^{38} + \cdots + 2.50493 \times 10^{54} b - 1.01102 \times 10^{54}, \\
& 5.17594 \times 10^{54} u^{39} + 1.38121 \times 10^{55} u^{38} + \cdots + 1.08547 \times 10^{55} a - 8.78741 \times 10^{53}, \\
& 5u^{40} + 15u^{39} + \cdots + 4u + 13 \rangle \\
I_2^u = \langle & 2u^{31}a + 3u^{31} + \cdots - 2a + 4,\ 2u^{30}a + 16u^{31} + \cdots + 2a - 15,\ u^{32} - u^{31} + \cdots - 2u + 1 \rangle \\
I_3^u = \langle & -u^3 + b,\ u^3 + u^2 + 2a - 2u,\ u^4 - u^2 + 1 \rangle \\
I_4^u = \langle & b,\ a - 1,\ u^4 - u^3 + 1 \rangle \\
I_5^u = \langle & b + 1,\ -u^3 + a - 1,\ u^4 - u^3 + 1 \rangle \\
I_6^u = \langle & b,\ a - 1,\ u + 1 \rangle \\
I_7^u = \langle & b + 1,\ a,\ u + 1 \rangle \\
I_8^u = \langle & -u^3 + b,\ u^3 + 2a - 2u - 1,\ u^4 - u^2 + 1 \rangle \\
I_9^u = \langle & b + 1,\ u^5 a - u^5 - u^3 a + 2u^3 + au - u + 1 \rangle
\end{aligned}$$

* 8 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 122 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. $\boldsymbol{I_1^u = \langle -7.70 \times 10^{53}u^{39} - 1.74 \times 10^{54}u^{38} + \cdots + 2.50 \times 10^{54}b - 1.01 \times 10^{54},\ 5.18 \times 10^{54}u^{39} + 1.38 \times 10^{55}u^{38} + \cdots + 1.09 \times 10^{55}a - 8.79 \times 10^{53},\ 5u^{40} + 15u^{39} + \cdots + 4u + 13 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.476839u^{39} - 1.27246u^{38} + \cdots - 5.39284u + 0.0809549 \\ 0.307415u^{39} + 0.695481u^{38} + \cdots + 2.07333u + 0.403613 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.169424u^{39} - 0.576975u^{38} + \cdots - 3.31951u + 0.484568 \\ 0.307415u^{39} + 0.695481u^{38} + \cdots + 2.07333u + 0.403613 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.211994u^{39} - 0.480895u^{38} + \cdots - 3.96053u - 0.213115 \\ 0.0500582u^{39} + 0.116432u^{38} + \cdots + 0.995645u + 0.307144 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -0.191581u^{39} - 0.280282u^{38} + \cdots + 5.99057u + 1.63083 \\ -0.0736869u^{39} - 0.292199u^{38} + \cdots - 0.484607u - 0.887781 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.231719u^{39} + 0.602871u^{38} + \cdots + 1.98498u - 0.495273 \\ 0.0632015u^{39} + 0.154197u^{38} + \cdots + 0.0133278u + 0.385259 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -0.245279u^{39} - 0.480339u^{38} + \cdots + 6.44253u + 1.18353 \\ -0.133010u^{39} - 0.382392u^{38} + \cdots - 0.608099u - 1.13846 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.660060u^{39} - 1.59385u^{38} + \cdots - 8.11569u - 0.968106 \\ 0.246464u^{39} + 0.516908u^{38} + \cdots + 1.74196u + 0.398054 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.355272u^{39} + 2.47238u^{38} + \cdots + 1.40321u + 8.32948$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$25(25u^{40} + 355u^{39} + \cdots - 2766u + 169)$
c_2, c_7	$5(5u^{40} - 15u^{39} + \cdots - 4u + 13)$
c_3, c_8	$64(64u^{40} + 192u^{39} + \cdots + 80u + 25)$
c_4, c_9	$5(5u^{40} - 15u^{39} + \cdots - 58u + 13)$
c_5, c_6, c_{11} c_{12}	$u^{40} + 4u^{39} + \cdots + 36u + 4$
c_{10}	$25(25u^{40} - 455u^{39} + \cdots + 718u + 169)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$625(625y^{40} + 14425y^{39} + \cdots - 2166706y + 28561)$
c_2, c_7	$25(25y^{40} - 355y^{39} + \cdots + 2766y + 169)$
c_3, c_8	$4096(4096y^{40} - 53248y^{39} + \cdots - 13450y + 625)$
c_4, c_9	$25(25y^{40} - 455y^{39} + \cdots + 718y + 169)$
c_5, c_6, c_{11} c_{12}	$y^{40} - 12y^{39} + \cdots - 696y + 16$
c_{10}	$625(625y^{40} + 4425y^{39} + \cdots - 2689202y + 28561)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.970531+0.178964I$ $a=-0.833678+1.090430I$ $b=\ \ 0.657380+0.842879I$	$-4.36949+3.79276I$	$-0.84937-5.47947I$
$u=-0.970531-0.178964I$ $a=-0.833678-1.090430I$ $b=\ \ 0.657380-0.842879I$	$-4.36949-3.79276I$	$-0.84937+5.47947I$
$u=-0.800492+0.625954I$ $a=-1.186250-0.317798I$ $b=\ \ 0.13126+1.45702I$	$-0.377065-0.505610I$	$13.55208+2.04018I$
$u=-0.800492-0.625954I$ $a=-1.186250+0.317798I$ $b=\ \ 0.13126-1.45702I$	$-0.377065+0.505610I$	$13.55208-2.04018I$
$u=-0.916490+0.502951I$ $a=-0.335321+0.936812I$ $b=\ \ 0.164319+0.087454I$	$0.08890+4.10799I$	$9.67304-7.45476I$
$u=-0.916490-0.502951I$ $a=-0.335321-0.936812I$ $b=\ \ 0.164319-0.087454I$	$0.08890-4.10799I$	$9.67304+7.45476I$
$u=\ \ 0.957016+0.438264I$ $a=\ \ 0.286645+0.087328I$ $b=\ \ 0.282628+0.561245I$	$-1.45001-1.63863I$	$1.206223+0.491984I$
$u=\ \ 0.957016-0.438264I$ $a=\ \ 0.286645-0.087328I$ $b=\ \ 0.282628-0.561245I$	$-1.45001+1.63863I$	$1.206223-0.491984I$
$u=-0.911045+0.633331I$ $a=-0.896481-0.513913I$ $b=-0.33799+1.45617I$	$-0.73084+5.44478I$	$10.81898-9.02994I$
$u=-0.911045-0.633331I$ $a=-0.896481+0.513913I$ $b=-0.33799-1.45617I$	$-0.73084-5.44478I$	$10.81898+9.02994I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.951215 + 0.571492I$ $a = 0.650883 - 0.383013I$ $b = 0.428609 + 1.127700I$	$-2.13110 - 1.53175I$	$4.45404 + 4.45582I$
$u = 0.951215 - 0.571492I$ $a = 0.650883 + 0.383013I$ $b = 0.428609 - 1.127700I$	$-2.13110 + 1.53175I$	$4.45404 - 4.45582I$
$u = 0.873906 + 0.143183I$ $a = 1.14313 + 1.17285I$ $b = -0.567731 + 0.944214I$	$-3.47850 + 1.11172I$	$0.88815 - 1.52267I$
$u = 0.873906 - 0.143183I$ $a = 1.14313 - 1.17285I$ $b = -0.567731 - 0.944214I$	$-3.47850 - 1.11172I$	$0.88815 + 1.52267I$
$u = 0.719139 + 0.511234I$ $a = 1.309510 + 0.000140I$ $b = -0.326936 + 1.143020I$	$-1.35289 - 2.89894I$	$8.70495 - 0.09481I$
$u = 0.719139 - 0.511234I$ $a = 1.309510 - 0.000140I$ $b = -0.326936 - 1.143020I$	$-1.35289 + 2.89894I$	$8.70495 + 0.09481I$
$u = -0.588353 + 0.956868I$ $a = -1.60068 + 0.27140I$ $b = 1.37609 - 0.52776I$	$8.8274 - 13.1342I$	$12.15484 + 6.65872I$
$u = -0.588353 - 0.956868I$ $a = -1.60068 - 0.27140I$ $b = 1.37609 + 0.52776I$	$8.8274 + 13.1342I$	$12.15484 - 6.65872I$
$u = 0.618330 + 0.966474I$ $a = 1.58166 + 0.29564I$ $b = -1.298800 - 0.465176I$	$6.35181 + 7.20509I$	$10.12101 - 3.51952I$
$u = 0.618330 - 0.966474I$ $a = 1.58166 - 0.29564I$ $b = -1.298800 + 0.465176I$	$6.35181 - 7.20509I$	$10.12101 + 3.51952I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.338231+1.117800I$ $a=-1.43704+0.00820I$ $b=\ \ 1.193230+0.235279I$	$7.17464+7.33287I$	$14.9640-8.5081I$
$u=-0.338231-1.117800I$ $a=-1.43704-0.00820I$ $b=\ \ 1.193230-0.235279I$	$7.17464-7.33287I$	$14.9640+8.5081I$
$u=-0.602564+1.040950I$ $a=-1.52308+0.24652I$ $b=\ \ 1.351000-0.264366I$	$12.76580-3.62003I$	$16.0601+2.4487I$
$u=-0.602564-1.040950I$ $a=-1.52308-0.24652I$ $b=\ \ 1.351000+0.264366I$	$12.76580+3.62003I$	$16.0601-2.4487I$
$u=-1.248820+0.245961I$ $a=-0.407145+0.707475I$ $b=\ \ 0.988408+0.451580I$	$-1.76098+5.75545I$	$3.78884-7.25461I$
$u=-1.248820-0.245961I$ $a=-0.407145-0.707475I$ $b=\ \ 0.988408-0.451580I$	$-1.76098-5.75545I$	$3.78884+7.25461I$
$u=\ \ 1.287890+0.155559I$ $a=\ \ 0.197100+0.675611I$ $b=-1.172550+0.479770I$	$1.16532-11.28520I$	$7.60677+9.06404I$
$u=\ \ 1.287890-0.155559I$ $a=\ \ 0.197100-0.675611I$ $b=-1.172550-0.479770I$	$1.16532+11.28520I$	$7.60677-9.06404I$
$u=-1.108950+0.734483I$ $a=\ \ 1.61641-1.35965I$ $b=-1.38090-0.60199I$	$7.2067+19.3213I$	$10.0095-10.7971I$
$u=-1.108950-0.734483I$ $a=\ \ 1.61641+1.35965I$ $b=-1.38090+0.60199I$	$7.2067-19.3213I$	$10.0095+10.7971I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.100690 + 0.748356I$ $a = -1.62760 - 1.23899I$ $b = 1.31857 - 0.55246I$	$4.8369 - 13.4697I$	$7.95384 + 7.41378I$
$u = 1.100690 - 0.748356I$ $a = -1.62760 + 1.23899I$ $b = 1.31857 + 0.55246I$	$4.8369 + 13.4697I$	$7.95384 - 7.41378I$
$u = -0.535060 + 0.369159I$ $a = 0.693924 + 0.131388I$ $b = -0.374703 + 0.056422I$	$1.022250 - 0.157854I$	$11.13565 + 1.03898I$
$u = -0.535060 - 0.369159I$ $a = 0.693924 - 0.131388I$ $b = -0.374703 - 0.056422I$	$1.022250 + 0.157854I$	$11.13565 - 1.03898I$
$u = -1.129960 + 0.773268I$ $a = 1.39080 - 1.14075I$ $b = -1.36313 - 0.39095I$	$11.1026 + 10.1596I$	$13.5699 - 6.4088I$
$u = -1.129960 - 0.773268I$ $a = 1.39080 + 1.14075I$ $b = -1.36313 + 0.39095I$	$11.1026 - 10.1596I$	$13.5699 + 6.4088I$
$u = 1.060210 + 0.886721I$ $a = -1.48433 - 0.62286I$ $b = 1.071830 - 0.283744I$	$2.70642 - 8.04384I$	$9.5123 + 11.1353I$
$u = 1.060210 - 0.886721I$ $a = -1.48433 + 0.62286I$ $b = 1.071830 + 0.283744I$	$2.70642 + 8.04384I$	$9.5123 - 11.1353I$
$u = 0.082088 + 0.218378I$ $a = 1.80768 - 2.55183I$ $b = -0.140579 + 0.756809I$	$-1.53964 - 2.22484I$	$2.67513 + 4.18107I$
$u = 0.082088 - 0.218378I$ $a = 1.80768 + 2.55183I$ $b = -0.140579 - 0.756809I$	$-1.53964 + 2.22484I$	$2.67513 - 4.18107I$

II. $I_2^u =$
$\langle 2u^{31}a+3u^{31}+\cdots-2a+4,\ 2u^{30}a+16u^{31}+\cdots+2a-15,\ u^{32}-u^{31}+\cdots-2u+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -2u^{31}a-3u^{31}+\cdots+2a-4 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -2u^{31}a-3u^{31}+\cdots+3a-4 \\ -2u^{31}a-3u^{31}+\cdots+2a-4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{31}a+\frac{9}{2}u^{31}+\cdots-9a-\frac{21}{2} \\ 2u^{31}a+u^{31}+\cdots-4a-3 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5-u^3+u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 3u^{31}a-4u^{31}+\cdots+4a+12 \\ -u^{31}a-2u^{31}+\cdots+2a+3 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^{31}a-\frac{13}{2}u^{31}+\cdots-3a+\frac{35}{2} \\ 2u^{31}a-u^{31}+\cdots+a+9 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 3u^{31}a-4u^{31}+\cdots+4a+11 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -3u^{31}a-\frac{21}{2}u^{31}+\cdots-a-\frac{5}{2}u \\ -2u^{31}a-4u^{31}+\cdots+3u-6 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 4u^{30}-20u^{28}+4u^{27}+68u^{26}-20u^{25}-156u^{24}+68u^{23}+276u^{22}-160u^{21}-380u^{20}+292u^{19}+404u^{18}-428u^{17}-328u^{16}+504u^{15}+160u^{14}-496u^{13}+8u^{12}+392u^{11}-124u^{10}-252u^{9}+156u^{8}+120u^{7}-116u^{6}-28u^{5}+64u^{4}-4u^{3}-16u^{2}+12u+10$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{32} + 11u^{31} + \cdots + 2u + 1)^2$
c_2, c_7	$(u^{32} + u^{31} + \cdots + 2u + 1)^2$
c_3, c_8	$4(4u^{64} + 56u^{63} + \cdots + 9.68814 \times 10^7 u + 1.07057 \times 10^7)$
c_4, c_9	$(u^{32} + u^{31} + \cdots - u^2 + 1)^2$
c_5, c_6, c_{11} c_{12}	$u^{64} + 4u^{63} + \cdots + 9164u + 2061$
c_{10}	$(u^{32} - 15u^{31} + \cdots - 2u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{32} + 21y^{31} + \cdots + 2y + 1)^2$
c_2, c_7	$(y^{32} - 11y^{31} + \cdots - 2y + 1)^2$
c_3, c_8	16 $\cdot (16y^{64} - 592y^{63} + \cdots - 2588329366713886y + 114613061651001)$
c_4, c_9	$(y^{32} - 15y^{31} + \cdots - 2y + 1)^2$
c_5, c_6, c_{11} c_{12}	$y^{64} - 44y^{63} + \cdots - 8369050y + 4247721$
c_{10}	$(y^{32} + 5y^{31} + \cdots + 2y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.613006 + 0.792175I$ $a = -0.580332 + 0.498725I$ $b = -0.046189 - 1.144740I$	$4.35959 + 7.30693I$	$10.17644 - 4.86883I$
$u = 0.613006 + 0.792175I$ $a = -1.55904 - 0.63002I$ $b = 1.43094 + 0.54420I$	$4.35959 + 7.30693I$	$10.17644 - 4.86883I$
$u = 0.613006 - 0.792175I$ $a = -0.580332 - 0.498725I$ $b = -0.046189 + 1.144740I$	$4.35959 - 7.30693I$	$10.17644 + 4.86883I$
$u = 0.613006 - 0.792175I$ $a = -1.55904 + 0.63002I$ $b = 1.43094 - 0.54420I$	$4.35959 - 7.30693I$	$10.17644 + 4.86883I$
$u = 0.674958 + 0.742403I$ $a = -0.231789 + 0.247033I$ $b = -0.519927 - 0.890443I$	$6.92548 + 0.05779I$	$13.67435 + 0.61686I$
$u = 0.674958 + 0.742403I$ $a = -1.89732 - 0.65378I$ $b = 1.47394 + 0.15920I$	$6.92548 + 0.05779I$	$13.67435 + 0.61686I$
$u = 0.674958 - 0.742403I$ $a = -0.231789 - 0.247033I$ $b = -0.519927 + 0.890443I$	$6.92548 - 0.05779I$	$13.67435 - 0.61686I$
$u = 0.674958 - 0.742403I$ $a = -1.89732 + 0.65378I$ $b = 1.47394 - 0.15920I$	$6.92548 - 0.05779I$	$13.67435 - 0.61686I$
$u = -0.600521 + 0.762759I$ $a = 0.636612 + 0.360731I$ $b = 0.015937 - 0.912614I$	$2.30027 - 2.26361I$	$6.98106 + 0.67006I$
$u = -0.600521 + 0.762759I$ $a = 1.58656 - 0.49003I$ $b = -1.282540 + 0.447749I$	$2.30027 - 2.26361I$	$6.98106 + 0.67006I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.600521 - 0.762759I$ $a = 0.636612 - 0.360731I$ $b = 0.015937 + 0.912614I$	$2.30027 + 2.26361I$	$6.98106 - 0.67006I$
$u = -0.600521 - 0.762759I$ $a = 1.58656 + 0.49003I$ $b = -1.282540 - 0.447749I$	$2.30027 + 2.26361I$	$6.98106 - 0.67006I$
$u = 0.849583 + 0.407230I$ $a = -0.12171 + 4.60078I$ $b = 1.097710 + 0.061840I$	$3.18087 - 4.15286I$	$5.98714 + 7.18864I$
$u = 0.849583 + 0.407230I$ $a = -5.27629 + 1.13566I$ $b = -0.896174 + 0.115665I$	$3.18087 - 4.15286I$	$5.98714 + 7.18864I$
$u = 0.849583 - 0.407230I$ $a = -0.12171 - 4.60078I$ $b = 1.097710 - 0.061840I$	$3.18087 + 4.15286I$	$5.98714 - 7.18864I$
$u = 0.849583 - 0.407230I$ $a = -5.27629 - 1.13566I$ $b = -0.896174 - 0.115665I$	$3.18087 + 4.15286I$	$5.98714 - 7.18864I$
$u = 1.093530 + 0.032199I$ $a = -0.303475 + 0.746533I$ $b = 0.432660 + 0.694262I$	$-3.44018 - 1.36697I$	$0.099351 + 0.550230I$
$u = 1.093530 + 0.032199I$ $a = 0.132205 - 0.469626I$ $b = 0.906765 - 0.547724I$	$-3.44018 - 1.36697I$	$0.099351 + 0.550230I$
$u = 1.093530 - 0.032199I$ $a = -0.303475 - 0.746533I$ $b = 0.432660 - 0.694262I$	$-3.44018 + 1.36697I$	$0.099351 - 0.550230I$
$u = 1.093530 - 0.032199I$ $a = 0.132205 + 0.469626I$ $b = 0.906765 + 0.547724I$	$-3.44018 + 1.36697I$	$0.099351 - 0.550230I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.098860 + 0.059621I$ $a = 0.432040 + 0.929418I$ $b = -0.258929 + 0.813001I$	$-1.66914 + 6.50568I$	$3.03082 - 5.51070I$
$u = -1.098860 + 0.059621I$ $a = -0.314191 - 0.418292I$ $b = -1.079870 - 0.537053I$	$-1.66914 + 6.50568I$	$3.03082 - 5.51070I$
$u = -1.098860 - 0.059621I$ $a = 0.432040 - 0.929418I$ $b = -0.258929 - 0.813001I$	$-1.66914 - 6.50568I$	$3.03082 + 5.51070I$
$u = -1.098860 - 0.059621I$ $a = -0.314191 + 0.418292I$ $b = -1.079870 + 0.537053I$	$-1.66914 - 6.50568I$	$3.03082 + 5.51070I$
$u = 0.858258 + 0.694285I$ $a = 1.40848 + 0.49567I$ $b = -1.337880 - 0.399067I$	$5.89812 - 2.66625I$	$9.77705 + 3.31297I$
$u = 0.858258 + 0.694285I$ $a = -1.74760 - 1.42262I$ $b = 1.220450 - 0.526531I$	$5.89812 - 2.66625I$	$9.77705 + 3.31297I$
$u = 0.858258 - 0.694285I$ $a = 1.40848 - 0.49567I$ $b = -1.337880 + 0.399067I$	$5.89812 + 2.66625I$	$9.77705 - 3.31297I$
$u = 0.858258 - 0.694285I$ $a = -1.74760 + 1.42262I$ $b = 1.220450 + 0.526531I$	$5.89812 + 2.66625I$	$9.77705 - 3.31297I$
$u = -0.828553 + 0.741140I$ $a = -0.890956 + 0.613775I$ $b = 1.37093 - 0.68976I$	$8.99039 - 0.95663I$	$14.3549 + 0.9762I$
$u = -0.828553 + 0.741140I$ $a = 1.87999 - 1.13465I$ $b = -1.51210 - 0.51307I$	$8.99039 - 0.95663I$	$14.3549 + 0.9762I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.828553 - 0.741140I$ $a = -0.890956 - 0.613775I$ $b = 1.37093 + 0.68976I$	$8.99039 + 0.95663I$	$14.3549 - 0.9762I$
$u = -0.828553 - 0.741140I$ $a = 1.87999 + 1.13465I$ $b = -1.51210 + 0.51307I$	$8.99039 + 0.95663I$	$14.3549 - 0.9762I$
$u = -0.891994 + 0.729689I$ $a = -1.31090 + 0.92685I$ $b = 1.59800 - 0.38325I$	$8.79813 + 6.53878I$	$13.6140 - 6.9915I$
$u = -0.891994 + 0.729689I$ $a = 1.58473 - 1.11655I$ $b = -1.25531 - 0.81498I$	$8.79813 + 6.53878I$	$13.6140 - 6.9915I$
$u = -0.891994 - 0.729689I$ $a = -1.31090 - 0.92685I$ $b = 1.59800 + 0.38325I$	$8.79813 - 6.53878I$	$13.6140 + 6.9915I$
$u = -0.891994 - 0.729689I$ $a = 1.58473 + 1.11655I$ $b = -1.25531 + 0.81498I$	$8.79813 - 6.53878I$	$13.6140 + 6.9915I$
$u = -1.022970 + 0.630121I$ $a = -0.200460 + 0.184858I$ $b = 0.180956 - 0.447265I$	$0.25603 + 5.05352I$	$3.88531 - 5.31459I$
$u = -1.022970 + 0.630121I$ $a = -1.35085 + 1.29776I$ $b = 0.971944 + 0.280768I$	$0.25603 + 5.05352I$	$3.88531 - 5.31459I$
$u = -1.022970 - 0.630121I$ $a = -0.200460 - 0.184858I$ $b = 0.180956 + 0.447265I$	$0.25603 - 5.05352I$	$3.88531 + 5.31459I$
$u = -1.022970 - 0.630121I$ $a = -1.35085 - 1.29776I$ $b = 0.971944 - 0.280768I$	$0.25603 - 5.05352I$	$3.88531 + 5.31459I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.997643 + 0.681461I$ $a = -0.717630 - 0.372056I$ $b = 0.298652 - 0.988469I$	$5.95409 - 5.49753I$	$11.62281 + 4.60034I$
$u = 0.997643 + 0.681461I$ $a = 1.62326 + 1.33956I$ $b = -1.45118 + 0.32417I$	$5.95409 - 5.49753I$	$11.62281 + 4.60034I$
$u = 0.997643 - 0.681461I$ $a = -0.717630 + 0.372056I$ $b = 0.298652 + 0.988469I$	$5.95409 + 5.49753I$	$11.62281 - 4.60034I$
$u = 0.997643 - 0.681461I$ $a = 1.62326 - 1.33956I$ $b = -1.45118 - 0.32417I$	$5.95409 + 5.49753I$	$11.62281 - 4.60034I$
$u = 0.416995 + 0.648442I$ $a = -0.949384 + 0.075306I$ $b = -0.239105 + 0.481030I$	$3.20064 - 4.79464I$	$9.29089 + 5.61871I$
$u = 0.416995 + 0.648442I$ $a = -1.39815 + 0.63323I$ $b = 1.185950 - 0.159624I$	$3.20064 - 4.79464I$	$9.29089 + 5.61871I$
$u = 0.416995 - 0.648442I$ $a = -0.949384 - 0.075306I$ $b = -0.239105 - 0.481030I$	$3.20064 + 4.79464I$	$9.29089 - 5.61871I$
$u = 0.416995 - 0.648442I$ $a = -1.39815 - 0.63323I$ $b = 1.185950 + 0.159624I$	$3.20064 + 4.79464I$	$9.29089 - 5.61871I$
$u = -1.031610 + 0.673233I$ $a = 0.660128 + 0.130914I$ $b = 0.108465 - 1.062730I$	$1.02610 + 7.72193I$	$5.01562 - 5.32873I$
$u = -1.031610 + 0.673233I$ $a = -1.63202 + 1.29034I$ $b = 1.30307 + 0.59506I$	$1.02610 + 7.72193I$	$5.01562 - 5.32873I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.031610 - 0.673233I$ $a = 0.660128 - 0.130914I$ $b = 0.108465 + 1.062730I$	$1.02610 - 7.72193I$	$5.01562 + 5.32873I$
$u = -1.031610 - 0.673233I$ $a = -1.63202 - 1.29034I$ $b = 1.30307 - 0.59506I$	$1.02610 - 7.72193I$	$5.01562 + 5.32873I$
$u = 1.036490 + 0.686644I$ $a = -0.859246 + 0.141872I$ $b = -0.088389 - 1.243250I$	$3.09358 - 12.88870I$	$8.12323 + 9.41526I$
$u = 1.036490 + 0.686644I$ $a = 1.66673 + 1.31376I$ $b = -1.42433 + 0.67775I$	$3.09358 - 12.88870I$	$8.12323 + 9.41526I$
$u = 1.036490 - 0.686644I$ $a = -0.859246 - 0.141872I$ $b = -0.088389 + 1.243250I$	$3.09358 + 12.88870I$	$8.12323 - 9.41526I$
$u = 1.036490 - 0.686644I$ $a = 1.66673 - 1.31376I$ $b = -1.42433 - 0.67775I$	$3.09358 + 12.88870I$	$8.12323 - 9.41526I$
$u = -0.730192 + 0.168194I$ $a = 1.037910 + 0.857867I$ $b = -1.158730 + 0.009887I$	$2.12065 + 0.19319I$	$2.79170 - 0.78328I$
$u = -0.730192 + 0.168194I$ $a = 2.40293 + 0.28821I$ $b = 0.655532 + 0.107869I$	$2.12065 + 0.19319I$	$2.79170 - 0.78328I$
$u = -0.730192 - 0.168194I$ $a = 1.037910 - 0.857867I$ $b = -1.158730 - 0.009887I$	$2.12065 - 0.19319I$	$2.79170 + 0.78328I$
$u = -0.730192 - 0.168194I$ $a = 2.40293 - 0.28821I$ $b = 0.655532 - 0.107869I$	$2.12065 - 0.19319I$	$2.79170 + 0.78328I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.164238 + 0.469611I$ $a = -0.67492 + 1.27326I$ $b = -0.926457 + 0.376650I$	$4.93312 + 1.19641I$	$13.57525 - 0.85209I$
$u = 0.164238 + 0.469611I$ $a = -1.03530 + 1.51984I$ $b = 1.225220 + 0.155136I$	$4.93312 + 1.19641I$	$13.57525 - 0.85209I$
$u = 0.164238 - 0.469611I$ $a = -0.67492 - 1.27326I$ $b = -0.926457 - 0.376650I$	$4.93312 - 1.19641I$	$13.57525 + 0.85209I$
$u = 0.164238 - 0.469611I$ $a = -1.03530 - 1.51984I$ $b = 1.225220 - 0.155136I$	$4.93312 - 1.19641I$	$13.57525 + 0.85209I$

III. $I^u_3 = \langle -u^3 + b,\ u^3 + u^2 + 2a - 2u,\ u^4 - u^2 + 1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{2}u^2 + u \\ u^3 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} \frac{1}{2}u^3 - \frac{1}{2}u^2 + u \\ u^3 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{4}u^2 + u + \frac{1}{4} \\ \frac{1}{2}u^2 + \frac{1}{2}u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -\frac{1}{2}u^3 + u^2 + \frac{1}{2}u + \frac{1}{2} \\ -1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{1}{2}u^3 - \frac{1}{2}u^2 - \frac{1}{4}u + 1 \\ -\frac{1}{2}u^3 + \frac{1}{2}u^2 + \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -\frac{1}{2}u^3 + u^2 + \frac{1}{2}u - \frac{1}{2} \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -\frac{3}{2}u^3 - \frac{3}{4}u^2 + \frac{3}{2}u \\ \frac{1}{2}u^3 + \frac{1}{2}u + \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8u^2$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_{10}	$(u^2 - u + 1)^2$
c_2, c_4, c_7 c_9	$u^4 - u^2 + 1$
c_3, c_8	$16(16u^4 + 16u^3 + 8u^2 - 4u + 1)$
c_5, c_6, c_{11} c_{12}	$(u^2 + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^2+y+1)^2$
c_2, c_4, c_7 c_9	$(y^2-y+1)^2$
c_3, c_8	$256(256y^4+224y^2+1)$
c_5, c_6, c_{11} c_{12}	$(y+1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.866025+0.500000I$		
$a=$	$0.616025-0.433013I$	$-1.64493-4.05977I$	$4.00000+6.92820I$
$b=$	$1.000000I$		
$u=$	$0.866025-0.500000I$		
$a=$	$0.616025+0.433013I$	$-1.64493+4.05977I$	$4.00000-6.92820I$
$b=$	$-1.000000I$		
$u=$	$-0.866025+0.500000I$		
$a=$	$-1.116030+0.433013I$	$-1.64493+4.05977I$	$4.00000-6.92820I$
$b=$	$1.000000I$		
$u=$	$-0.866025-0.500000I$		
$a=$	$-1.116030-0.433013I$	$-1.64493-4.05977I$	$4.00000+6.92820I$
$b=$	$-1.000000I$		

IV. $I_4^u = \langle b,\ a-1,\ u^4 - u^3 + 1 \rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ -u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^3 + 1 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^3 + u^2 \\ u^3 - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.518913 + 0.666610I$ $a = 1.00000$ $b = 0$	1.64493	6.00000
$u = -0.518913 - 0.666610I$ $a = 1.00000$ $b = 0$	1.64493	6.00000
$u = 1.018910 + 0.602565I$ $a = 1.00000$ $b = 0$	1.64493	6.00000
$u = 1.018910 - 0.602565I$ $a = 1.00000$ $b = 0$	1.64493	6.00000

V. $I_5^u = \langle b+1,\ -u^3+a-1,\ u^4-u^3+1\rangle$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3+u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^3+1 \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^3 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -u^2-u+1 \\ -u^3+u^2+u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -u^3 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} u^3-2u-1 \\ -u^3-u^2+u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^3 \\ 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3+u^2+2 \\ u^3+u-1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.518913 + 0.666610I$ $a = \quad 1.55204 + 0.24227I$ $b = -1.00000$	1.64493	6.00000
$u = -0.518913 - 0.666610I$ $a = \quad 1.55204 - 0.24227I$ $b = -1.00000$	1.64493	6.00000
$u = \quad 1.018910 + 0.602565I$ $a = \quad 0.94796 + 1.65794I$ $b = -1.00000$	1.64493	6.00000
$u = \quad 1.018910 - 0.602565I$ $a = \quad 0.94796 - 1.65794I$ $b = -1.00000$	1.64493	6.00000

VI. $I_6^u = \langle b,\ a-1,\ u+1 \rangle$

(i) Arc colorings

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

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

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

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

$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

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

$a_9 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$

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

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

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

$a_5 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$

$a_{10} = \begin{pmatrix} 3 \\ 1 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 1.00000$ $b = \quad 0$	1.64493	6.00000

VII. $I_7^u = \langle b+1,\ a,\ u+1 \rangle$

(i) Arc colorings

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

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

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

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

$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

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

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

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

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

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

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = \quad 0$ $b = -1.00000$	1.64493	6.00000

VIII. $I_8^u = \langle -u^3 + b,\ u^3 + 2a - 2u - 1,\ u^4 - u^2 + 1 \rangle$

(i) Arc colorings

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

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

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

$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{2}u^3 + u + \frac{1}{2} \\ u^3 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} u^3 - \frac{1}{2}u + \frac{1}{2} \\ \frac{1}{2}u^3 + \frac{1}{2}u^2 - \frac{1}{2}u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ 0 \end{pmatrix}$$

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

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

$$a_5 = \begin{pmatrix} \frac{1}{2}u^3 + u^2 - \frac{1}{2} \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{1}{2}u^2 + \frac{1}{2} \\ u^3 + \frac{1}{2}u^2 - \frac{1}{2}u - \frac{1}{2} \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_{10}	$(y^2 + y + 1)^2$
c_2, c_4, c_7 c_9	$(y^2 - y + 1)^2$
c_3, c_8	$16(16y^4 - 4y^2 + 1)$
c_5, c_6, c_{11} c_{12}	$(y + 1)^4$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.866025 + 0.500000I$ $a = 1.36603$ $b = 1.000000I$	-1.64493	4.00000
$u = 0.866025 - 0.500000I$ $a = 1.36603$ $b = -1.000000I$	-1.64493	4.00000
$u = -0.866025 + 0.500000I$ $a = -0.366025$ $b = 1.000000I$	-1.64493	4.00000
$u = -0.866025 - 0.500000I$ $a = -0.366025$ $b = -1.000000I$	-1.64493	4.00000

IX. $\boldsymbol{I_9^u = \langle b+1,\ u^5a - u^5 - u^3a + 2u^3 + au - u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} a \\ -1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} a-1 \\ -1 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a^2u^2 - 2u^2a + u^2 + a \\ -u^2a + 2u^2 - 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 - u^3 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -a+1 \\ 1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3a^2 + 2u^3a + a^2u - u^3 - 3au + u \\ u^3a - 2u^3 - au + 3u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} u^3 - a + 1 \\ u^5 - u^3 + u + 1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^4a^2 - 2u^4a + u^4 + u^2a + a \\ -u^4a + 2u^4 - u^2 - 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(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_9^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \cdots$ $a = \cdots$ $b = \cdots$	3.28987	12.0000

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$25(u+1)^2(u^2-u+1)^4(u^4+u^3+2u^2+1)^2$ $\cdot((u^{32}+11u^{31}+\cdots+2u+1)^2)(25u^{40}+355u^{39}+\cdots-2766u+169)$
c_2, c_7	$5(u-1)^2(u^4-u^2+1)^2(u^4+u^3+1)^2(u^{32}+u^{31}+\cdots+2u+1)^2$ $\cdot(5u^{40}-15u^{39}+\cdots-4u+13)$
c_3, c_8	$16384u(u-1)(u^4-u^2-2u+3)(u^4-u^3+2u^2+1)$ $\cdot(4u^4+4u^3+2u^2+2u+1)(16u^4+16u^3+8u^2-4u+1)$ $\cdot(64u^{40}+192u^{39}+\cdots+80u+25)$ $\cdot(4u^{64}+56u^{63}+\cdots+96881428u+10705749)$
c_4, c_9	$5(u-1)^2(u^4-u^2+1)^2(u^4+u^3+1)^2(u^{32}+u^{31}+\cdots-u^2+1)^2$ $\cdot(5u^{40}-15u^{39}+\cdots-58u+13)$
c_5, c_6, c_{11} c_{12}	$u^5(u-1)^5(u^2+1)^4(u^{40}+4u^{39}+\cdots+36u+4)$ $\cdot(u^{64}+4u^{63}+\cdots+9164u+2061)$
c_{10}	$25(u-1)^2(u^2-u+1)^4(u^4-u^3+2u^2+1)^2$ $\cdot((u^{32}-15u^{31}+\cdots-2u+1)^2)(25u^{40}-455u^{39}+\cdots+718u+169)$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$625(y-1)^2(y^2+y+1)^4(y^4+3y^3+6y^2+4y+1)^2$ $\cdot (y^{32}+21y^{31}+\cdots+2y+1)^2$ $\cdot (625y^{40}+14425y^{39}+\cdots-2166706y+28561)$
c_2, c_7	$25(y-1)^2(y^2-y+1)^4(y^4-y^3+2y^2+1)^2$ $\cdot ((y^{32}-11y^{31}+\cdots-2y+1)^2)(25y^{40}-355y^{39}+\cdots+2766y+169)$
c_3, c_8	$268435456(y)(y-1)(y^4-2y^3+\cdots-10y+9)(y^4+3y^3+\cdots+4y+1)$ $\cdot (16y^4-4y^2+1)(256y^4+224y^2+1)$ $\cdot (4096y^{40}-53248y^{39}+\cdots-13450y+625)$ $\cdot (16y^{64}-592y^{63}+\cdots-2588329366713886y+114613061651001)$
c_4, c_9	$25(y-1)^2(y^2-y+1)^4(y^4-y^3+2y^2+1)^2$ $\cdot ((y^{32}-15y^{31}+\cdots-2y+1)^2)(25y^{40}-455y^{39}+\cdots+718y+169)$
c_5, c_6, c_{11} c_{12}	$y^5(y-1)^5(y+1)^8(y^{40}-12y^{39}+\cdots-696y+16)$ $\cdot (y^{64}-44y^{63}+\cdots-8369050y+4247721)$
c_{10}	$625(y-1)^2(y^2+y+1)^4(y^4+3y^3+6y^2+4y+1)^2$ $\cdot (y^{32}+5y^{31}+\cdots+2y+1)^2$ $\cdot (625y^{40}+4425y^{39}+\cdots-2689202y+28561)$