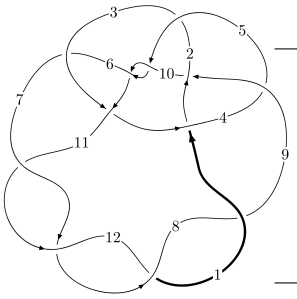
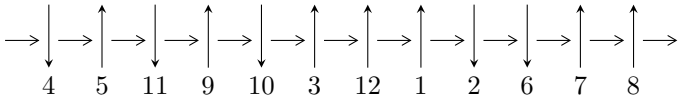
$12a_{0864}$ $(K12a_{0864})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -1.21264 \times 10^{139} u^{95} + 1.73441 \times 10^{139} u^{94} + \cdots + 1.05860 \times 10^{139} b + 1.91553 \times 10^{139}, \\
&\quad - 3.04022 \times 10^{140} u^{95} + 1.79659 \times 10^{139} u^{94} + \cdots + 1.05860 \times 10^{139} a + 2.01484 \times 10^{141}, \\
&\quad u^{96} - 61 u^{94} + \cdots - 28u - 1 \rangle \\
I_2^u &= \langle u^{15} - u^{14} + \cdots + b + 2,\ -u^{15} + 2u^{14} + \cdots + a - 9,\ u^{16} - 12u^{14} + \cdots + 5u + 1 \rangle \\
I_3^u &= \langle b - 1,\ a + 2,\ u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 113 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. $\boldsymbol{I_1^u = \langle -1.21 \times 10^{139} u^{95} + 1.73 \times 10^{139} u^{94} + \cdots + 1.06 \times 10^{139} b + 1.92 \times 10^{139},\ -3.04 \times 10^{140} u^{95} + 1.80 \times 10^{139} u^{94} + \cdots + 1.06 \times 10^{139} a + 2.01 \times 10^{141},\ u^{96} - 61 u^{94} + \cdots - 28u - 1 \rangle}$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix} 28.7194u^{95} - 1.69714u^{94} + \cdots - 3987.96u - 190.331 \\ 1.14552u^{95} - 1.63841u^{94} + \cdots - 76.6899u - 1.80950 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} 18.9381u^{95} - 4.14300u^{94} + \cdots - 1887.37u - 59.3130 \\ 2.76827u^{95} - 0.450564u^{94} + \cdots - 370.656u - 18.2747 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 26.6420u^{95} - 4.78463u^{94} + \cdots - 3924.43u - 186.996 \\ 3.22295u^{95} + 1.44908u^{94} + \cdots - 140.220u - 5.14505 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -3.95609u^{95} - 0.462103u^{94} + \cdots + 390.837u + 0.542360 \\ 3.87936u^{95} + 0.714479u^{94} + \cdots - 343.306u - 13.3366 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -4.26382u^{95} + 1.69030u^{94} + \cdots - 9.12211u - 30.4716 \\ -3.77515u^{95} + 0.646135u^{94} + \cdots + 455.415u + 22.4214 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 31.0772u^{95} - 2.97999u^{94} + \cdots - 4218.61u - 199.407 \\ 1.95541u^{95} - 1.75880u^{94} + \cdots - 157.514u - 5.53567 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.53643u^{95} + 0.820615u^{94} + \cdots + 864.770u + 50.5047$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{96}+5u^{95}+\cdots-4478u+638$
c_2	$u^{96}-8u^{95}+\cdots+5u-1$
c_3	$u^{96}+5u^{94}+\cdots-723u-97$
c_4	$u^{96}+2u^{95}+\cdots-5914u-463$
c_5, c_{10}	$u^{96}-2u^{95}+\cdots+4u+2$
c_6	$u^{96}-9u^{94}+\cdots-872u-79$
c_7, c_8, c_{11} c_{12}	$u^{96}-61u^{94}+\cdots+28u-1$
c_9	$u^{96}-3u^{95}+\cdots-1819u+211$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{96} + 23y^{95} + \cdots - 5697484y + 407044$
c_2	$y^{96} + 6y^{95} + \cdots - 947y + 1$
c_3	$y^{96} + 10y^{95} + \cdots + 487817y + 9409$
c_4	$y^{96} - 32y^{95} + \cdots - 43540896y + 214369$
c_5, c_{10}	$y^{96} - 74y^{95} + \cdots + 592y + 4$
c_6	$y^{96} - 18y^{95} + \cdots - 426056y + 6241$
c_7, c_8, c_{11} c_{12}	$y^{96} - 122y^{95} + \cdots - 208y + 1$
c_9	$y^{96} - 29y^{95} + \cdots - 3023067y + 44521$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.848856 + 0.512394I$ $a = -1.48444 + 0.02987I$ $b = 1.13304 + 1.13103I$	$1.79803 + 6.02425I$	0
$u = 0.848856 - 0.512394I$ $a = -1.48444 - 0.02987I$ $b = 1.13304 - 1.13103I$	$1.79803 - 6.02425I$	0
$u = -0.762783 + 0.552893I$ $a = 0.084512 - 0.657058I$ $b = 0.480853 + 0.094565I$	$1.63897 - 1.62411I$	0
$u = -0.762783 - 0.552893I$ $a = 0.084512 + 0.657058I$ $b = 0.480853 - 0.094565I$	$1.63897 + 1.62411I$	0
$u = -0.872654 + 0.313471I$ $a = 1.57203 + 0.70936I$ $b = -0.771400 + 0.941898I$	$-2.26631 - 4.65369I$	0
$u = -0.872654 - 0.313471I$ $a = 1.57203 - 0.70936I$ $b = -0.771400 - 0.941898I$	$-2.26631 + 4.65369I$	0
$u = 0.943151 + 0.542936I$ $a = 1.046870 - 0.578677I$ $b = -0.950136 - 0.507528I$	$4.03768 + 8.33548I$	0
$u = 0.943151 - 0.542936I$ $a = 1.046870 + 0.578677I$ $b = -0.950136 + 0.507528I$	$4.03768 - 8.33548I$	0
$u = 0.910484$ $a = -0.878663$ $b = -0.378648$	-3.16205	0
$u = 0.811946 + 0.726956I$ $a = 0.149340 + 0.747403I$ $b = 0.505940 - 0.747645I$	$-2.10344 - 4.68024I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.811946 - 0.726956I$ $a = 0.149340 - 0.747403I$ $b = 0.505940 + 0.747645I$	$-2.10344 + 4.68024I$	0
$u = -0.951904 + 0.531798I$ $a = -1.65073 - 0.27863I$ $b = 1.17052 - 1.03295I$	$-1.00269 - 14.05450I$	0
$u = -0.951904 - 0.531798I$ $a = -1.65073 + 0.27863I$ $b = 1.17052 + 1.03295I$	$-1.00269 + 14.05450I$	0
$u = -0.849730 + 0.148988I$ $a = 1.28832 - 0.69583I$ $b = -0.310227 + 0.149527I$	$1.94088 - 0.58707I$	0
$u = -0.849730 - 0.148988I$ $a = 1.28832 + 0.69583I$ $b = -0.310227 - 0.149527I$	$1.94088 + 0.58707I$	0
$u = -0.066590 + 0.860109I$ $a = 0.044443 + 0.190892I$ $b = -0.667589 + 0.223840I$	$0.94601 - 3.74110I$	0
$u = -0.066590 - 0.860109I$ $a = 0.044443 - 0.190892I$ $b = -0.667589 - 0.223840I$	$0.94601 + 3.74110I$	0
$u = 0.851105 + 0.131792I$ $a = 1.01100 + 2.07444I$ $b = -0.236581 - 0.169350I$	$0.90358 + 5.68147I$	0
$u = 0.851105 - 0.131792I$ $a = 1.01100 - 2.07444I$ $b = -0.236581 + 0.169350I$	$0.90358 - 5.68147I$	0
$u = 0.847214 + 0.071086I$ $a = -1.54881 + 0.33064I$ $b = 1.119980 + 0.555179I$	$4.24776 + 1.77300I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.847214 - 0.071086I$ $a = -1.54881 - 0.33064I$ $b = 1.119980 - 0.555179I$	$4.24776 - 1.77300I$	0
$u = 1.15263$ $a = -2.79307$ $b = 1.59079$	1.49561	0
$u = -1.012410 + 0.563472I$ $a = 0.915243 + 0.270713I$ $b = -0.830878 + 0.373538I$	$3.91381 - 1.35031I$	0
$u = -1.012410 - 0.563472I$ $a = 0.915243 - 0.270713I$ $b = -0.830878 - 0.373538I$	$3.91381 + 1.35031I$	0
$u = 0.776553 + 0.310353I$ $a = -0.378054 + 0.041126I$ $b = 0.132735 + 0.970644I$	$1.05313 + 4.13427I$	0
$u = 0.776553 - 0.310353I$ $a = -0.378054 - 0.041126I$ $b = 0.132735 - 0.970644I$	$1.05313 - 4.13427I$	0
$u = -1.140350 + 0.241058I$ $a = 0.287971 + 0.490780I$ $b = -0.752610 - 0.354976I$	$-0.561295 + 0.360803I$	0
$u = -1.140350 - 0.241058I$ $a = 0.287971 - 0.490780I$ $b = -0.752610 + 0.354976I$	$-0.561295 - 0.360803I$	0
$u = 0.094602 + 0.804581I$ $a = -0.126983 + 0.252363I$ $b = 0.872343 + 0.988761I$	$-4.18034 + 9.61860I$	0
$u = 0.094602 - 0.804581I$ $a = -0.126983 - 0.252363I$ $b = 0.872343 - 0.988761I$	$-4.18034 - 9.61860I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.793794+0.085736I$ $a=\ \ 1.86729-0.01780I$ $b=-1.14389+1.32461I$	$0.16910-5.24105I$	0
$u=-0.793794-0.085736I$ $a=\ \ 1.86729+0.01780I$ $b=-1.14389-1.32461I$	$0.16910+5.24105I$	0
$u=\ \ 0.695579+0.387592I$ $a=\ \ 1.59202-1.13315I$ $b=-0.963161-0.805203I$	$-3.16653+6.53955I$	0
$u=\ \ 0.695579-0.387592I$ $a=\ \ 1.59202+1.13315I$ $b=-0.963161+0.805203I$	$-3.16653-6.53955I$	0
$u=-0.737621+0.059931I$ $a=-2.65688+1.12940I$ $b=\ \ 0.868841+0.104292I$	$2.70279-1.66171I$	0
$u=-0.737621-0.059931I$ $a=-2.65688-1.12940I$ $b=\ \ 0.868841-0.104292I$	$2.70279+1.66171I$	0
$u=\ \ 1.29643$ $a=-2.87389$ $b=\ \ 1.91941$	1.51634	0
$u=-0.594053+0.361218I$ $a=\ \ 0.08272-1.62751I$ $b=\ \ 0.57340+1.63096I$	$-2.48411-5.40065I$	$0.+7.91391I$
$u=-0.594053-0.361218I$ $a=\ \ 0.08272+1.62751I$ $b=\ \ 0.57340-1.63096I$	$-2.48411+5.40065I$	$0.-7.91391I$
$u=-1.33022$ $a=\ \ 1.56693$ $b=-1.00223$	2.87442	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.043672 + 0.662877I$ $a = 0.494388 + 0.045800I$ $b = 0.511933 - 0.907807I$	$-0.60901 - 2.02374I$	$4.31550 + 2.89349I$
$u = 0.043672 - 0.662877I$ $a = 0.494388 - 0.045800I$ $b = 0.511933 + 0.907807I$	$-0.60901 + 2.02374I$	$4.31550 - 2.89349I$
$u = 0.551928 + 0.251478I$ $a = -0.186747 - 0.541257I$ $b = -0.881756 + 0.722362I$	$-3.43641 + 0.55635I$	$0.02779 - 2.86592I$
$u = 0.551928 - 0.251478I$ $a = -0.186747 + 0.541257I$ $b = -0.881756 - 0.722362I$	$-3.43641 - 0.55635I$	$0.02779 + 2.86592I$
$u = -0.295504 + 0.529164I$ $a = -1.52202 - 0.43687I$ $b = 1.22688 - 1.09252I$	$-3.35245 + 2.24266I$	$-2.14064 - 1.00817I$
$u = -0.295504 - 0.529164I$ $a = -1.52202 + 0.43687I$ $b = 1.22688 + 1.09252I$	$-3.35245 - 2.24266I$	$-2.14064 + 1.00817I$
$u = -0.497027 + 0.346630I$ $a = 0.012234 - 1.062080I$ $b = 0.622420 - 0.341049I$	$0.85142 - 1.38736I$	$0.21088 + 3.87321I$
$u = -0.497027 - 0.346630I$ $a = 0.012234 + 1.062080I$ $b = 0.622420 + 0.341049I$	$0.85142 + 1.38736I$	$0.21088 - 3.87321I$
$u = 0.188695 + 0.570976I$ $a = -0.707038 + 0.414108I$ $b = -0.825190 + 0.720729I$	$-4.67936 - 3.24452I$	$-3.85119 + 2.80796I$
$u = 0.188695 - 0.570976I$ $a = -0.707038 - 0.414108I$ $b = -0.825190 - 0.720729I$	$-4.67936 + 3.24452I$	$-3.85119 - 2.80796I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.601266$ $a = 3.64462$ $b = -1.64639$	-3.91831	2.29380
$u = 0.057784 + 0.492981I$ $a = -0.40481 - 1.64013I$ $b = -0.666921 - 0.779900I$	$-5.07392 + 1.88167I$	$-6.82321 - 4.06316I$
$u = 0.057784 - 0.492981I$ $a = -0.40481 + 1.64013I$ $b = -0.666921 + 0.779900I$	$-5.07392 - 1.88167I$	$-6.82321 + 4.06316I$
$u = 0.091019 + 0.471956I$ $a = 1.089190 - 0.659128I$ $b = -0.116040 - 0.648601I$	$-0.98522 - 1.39774I$	$-2.89275 + 1.25458I$
$u = 0.091019 - 0.471956I$ $a = 1.089190 + 0.659128I$ $b = -0.116040 + 0.648601I$	$-0.98522 + 1.39774I$	$-2.89275 - 1.25458I$
$u = -1.54294 + 0.01252I$ $a = 0.742691 - 1.008020I$ $b = -0.757567 + 1.181720I$	$3.43603 + 1.18460I$	0
$u = -1.54294 - 0.01252I$ $a = 0.742691 + 1.008020I$ $b = -0.757567 - 1.181720I$	$3.43603 - 1.18460I$	0
$u = 1.60158 + 0.06458I$ $a = -1.052070 + 0.237578I$ $b = 0.812605 + 0.692601I$	$8.25434 + 2.62646I$	0
$u = 1.60158 - 0.06458I$ $a = -1.052070 - 0.237578I$ $b = 0.812605 - 0.692601I$	$8.25434 - 2.62646I$	0
$u = 1.60934 + 0.07157I$ $a = -0.29325 + 2.18032I$ $b = 0.33233 - 2.28003I$	$5.17458 + 6.78996I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.60934 - 0.07157I$ $a = -0.29325 - 2.18032I$ $b = 0.33233 + 2.28003I$	$5.17458 - 6.78996I$	0
$u = -1.61881$ $a = 2.97964$ $b = -2.07397$	3.94904	0
$u = -1.62599 + 0.08701I$ $a = 2.00071 + 0.13636I$ $b = -1.136690 + 0.824125I$	$4.85829 - 8.19264I$	0
$u = -1.62599 - 0.08701I$ $a = 2.00071 - 0.13636I$ $b = -1.136690 - 0.824125I$	$4.85829 + 8.19264I$	0
$u = 1.64739 + 0.01618I$ $a = -2.07833 - 0.43318I$ $b = 1.037310 - 0.320280I$	$11.12640 + 1.94775I$	0
$u = 1.64739 - 0.01618I$ $a = -2.07833 + 0.43318I$ $b = 1.037310 + 0.320280I$	$11.12640 - 1.94775I$	0
$u = -1.65486 + 0.07324I$ $a = -0.427785 + 0.471354I$ $b = 0.238957 - 1.184620I$	$9.56125 - 5.52496I$	0
$u = -1.65486 - 0.07324I$ $a = -0.427785 - 0.471354I$ $b = 0.238957 + 1.184620I$	$9.56125 + 5.52496I$	0
$u = 1.65791 + 0.02566I$ $a = 2.04402 + 0.77118I$ $b = -1.48917 - 1.43556I$	$8.81525 + 5.68308I$	0
$u = 1.65791 - 0.02566I$ $a = 2.04402 - 0.77118I$ $b = -1.48917 + 1.43556I$	$8.81525 - 5.68308I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.66776 + 0.02292I$ $a = 1.210920 + 0.397812I$ $b = -0.554963 + 0.218840I$	$10.80050 + 1.14005I$	0
$u = 1.66776 - 0.02292I$ $a = 1.210920 - 0.397812I$ $b = -0.554963 - 0.218840I$	$10.80050 - 1.14005I$	0
$u = -1.66827 + 0.01675I$ $a = -1.84161 + 0.17726I$ $b = 1.36616 - 0.72640I$	$13.11230 - 2.09984I$	0
$u = -1.66827 - 0.01675I$ $a = -1.84161 - 0.17726I$ $b = 1.36616 + 0.72640I$	$13.11230 + 2.09984I$	0
$u = -1.66940 + 0.03737I$ $a = 0.692148 - 1.011590I$ $b = -0.276753 - 0.247517I$	$9.78135 - 6.34874I$	0
$u = -1.66940 - 0.03737I$ $a = 0.692148 + 1.011590I$ $b = -0.276753 + 0.247517I$	$9.78135 + 6.34874I$	0
$u = -1.66635 + 0.14890I$ $a = -2.17840 + 0.50376I$ $b = 1.57381 - 1.13285I$	$10.45570 - 8.59652I$	0
$u = -1.66635 - 0.14890I$ $a = -2.17840 - 0.50376I$ $b = 1.57381 + 1.13285I$	$10.45570 + 8.59652I$	0
$u = 1.66512 + 0.17047I$ $a = -0.729902 + 0.338360I$ $b = 0.691944 + 0.302616I$	$10.03660 + 4.49493I$	0
$u = 1.66512 - 0.17047I$ $a = -0.729902 - 0.338360I$ $b = 0.691944 - 0.302616I$	$10.03660 - 4.49493I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.67885 + 0.07865I$ $a = 1.60585 + 0.06324I$ $b = -0.872569 - 1.059720I$	$6.68731 + 6.14608I$	0
$u = 1.67885 - 0.07865I$ $a = 1.60585 - 0.06324I$ $b = -0.872569 + 1.059720I$	$6.68731 - 6.14608I$	0
$u = -1.69202 + 0.15408I$ $a = 1.60685 + 0.16379I$ $b = -1.166170 + 0.647670I$	$13.1227 - 11.0928I$	0
$u = -1.69202 - 0.15408I$ $a = 1.60685 - 0.16379I$ $b = -1.166170 - 0.647670I$	$13.1227 + 11.0928I$	0
$u = 1.69608 + 0.15323I$ $a = -2.10270 - 0.25181I$ $b = 1.39715 + 1.04056I$	$8.1438 + 16.7871I$	0
$u = 1.69608 - 0.15323I$ $a = -2.10270 + 0.25181I$ $b = 1.39715 - 1.04056I$	$8.1438 - 16.7871I$	0
$u = -1.71128$ $a = -2.50112$ $b = 1.27351$	11.3997	0
$u = 1.70574 + 0.14595I$ $a = 1.59733 - 0.07514I$ $b = -1.160380 - 0.528430I$	$13.29620 + 4.11407I$	0
$u = 1.70574 - 0.14595I$ $a = 1.59733 + 0.07514I$ $b = -1.160380 + 0.528430I$	$13.29620 - 4.11407I$	0
$u = 1.71898$ $a = 1.36314$ $b = -1.21199$	9.74779	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.196123+0.005228I$ $a=\ \ 0.82450-3.34814I$ $b=\ \ 0.762236-0.307912I$	$1.21956-1.26043I$	$6.74350-0.63516I$
$u=-0.196123-0.005228I$ $a=\ \ 0.82450+3.34814I$ $b=\ \ 0.762236+0.307912I$	$1.21956+1.26043I$	$6.74350+0.63516I$
$u=-1.86286+0.10282I$ $a=-0.595381-0.156590I$ $b=\ \ 0.351069-0.006997I$	$7.23091-0.06693I$	0
$u=-1.86286-0.10282I$ $a=-0.595381+0.156590I$ $b=\ \ 0.351069+0.006997I$	$7.23091+0.06693I$	0
$u=-0.0883854+0.0407157I$ $a=\ \ 3.34955-11.61160I$ $b=-0.487062+0.970812I$	$-1.92017-4.82828I$	$-0.55587+7.49185I$
$u=-0.0883854-0.0407157I$ $a=\ \ 3.34955+11.61160I$ $b=-0.487062-0.970812I$	$-1.92017+4.82828I$	$-0.55587-7.49185I$

II.

$\boldsymbol{I_2^u = \langle u^{15}-u^{14}+\cdots+b+2,\ -u^{15}+2u^{14}+\cdots+a-9,\ u^{16}-12u^{14}+\cdots+5u+1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_3 = \begin{pmatrix}u^{15}-2u^{14}+\cdots-2u+9\\-u^{15}+u^{14}+\cdots-2u-2\end{pmatrix}$$

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

$$a_6 = \begin{pmatrix}2u^{13}-21u^{11}+\cdots+14u-9\\-u^{13}-u^{12}+\cdots-6u+1\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}2u^{15}-u^{14}+\cdots-7u+8\\-2u^{15}+21u^{13}+\cdots+3u-1\end{pmatrix}$$

$$a_2 = \begin{pmatrix}2u^{15}-u^{14}+\cdots-10u+11\\-u^{15}+u^{14}+\cdots-5u-3\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-3u^{15}+u^{14}+\cdots+13u-13\\u^{13}+u^{12}+\cdots+3u+3\end{pmatrix}$$

$$a_5 = \begin{pmatrix}u^{15}-u^{14}+\cdots-7u+7\\-2u^{15}+2u^{14}+\cdots-2u-2\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -11u^{15}+11u^{14}+122u^{13}-122u^{12}-505u^{11}+506u^{10}+952u^9-974u^8-789u^7+894u^6+252u^5-417u^4-67u^3+135u^2-6u-13$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 8u^{15} + \cdots - 12u + 2$
c_2	$u^{16} + 8u^{15} + \cdots + 2u - 1$
c_3	$u^{16} + 2u^{15} + \cdots - 4u - 1$
c_4	$u^{16} + 2u^{15} + \cdots - u - 1$
c_5	$u^{16} + u^{15} + \cdots - 10u - 2$
c_6	$u^{16} + 4u^{15} + \cdots + u + 1$
c_7, c_8	$u^{16} - 12u^{14} + \cdots + 5u + 1$
c_9	$u^{16} - u^{15} + \cdots + 2u - 1$
c_{10}	$u^{16} - u^{15} + \cdots + 10u - 2$
c_{11}, c_{12}	$u^{16} - 12u^{14} + \cdots - 5u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16}+8y^{15}+\cdots-84y+4$
c_2	$y^{16}+8y^{15}+\cdots-22y+1$
c_3	$y^{16}+4y^{15}+\cdots-14y+1$
c_4	$y^{16}-6y^{15}+\cdots-11y+1$
c_5, c_{10}	$y^{16}-17y^{15}+\cdots-88y+4$
c_6	$y^{16}-4y^{15}+\cdots-11y+1$
c_7, c_8, c_{11} c_{12}	$y^{16}-24y^{15}+\cdots-51y+1$
c_9	$y^{16}-11y^{15}+\cdots-6y+1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.19636$ $a=-1.77658$ $b=\ \ 1.10535$	3.32897	13.9120
$u=-1.22692$ $a=-0.0953975$ $b=-0.556654$	-1.15723	-3.31060
$u=\ \ 0.730798+0.226517I$ $a=\ \ 0.905085-0.455462I$ $b=-0.64601-1.27305I$	$-0.84370+5.86905I$	$2.90360-9.44604I$
$u=\ \ 0.730798-0.226517I$ $a=\ \ 0.905085+0.455462I$ $b=-0.64601+1.27305I$	$-0.84370-5.86905I$	$2.90360+9.44604I$
$u=\ \ 0.526726+0.434145I$ $a=-0.60415-1.41349I$ $b=-0.321537+0.919054I$	$-1.59369-3.77560I$	$3.21977+1.38171I$
$u=\ \ 0.526726-0.434145I$ $a=-0.60415+1.41349I$ $b=-0.321537-0.919054I$	$-1.59369+3.77560I$	$3.21977-1.38171I$
$u=-0.546876+0.396366I$ $a=\ \ 0.459891-0.407083I$ $b=\ \ 0.513445-0.275172I$	$1.24652-2.20120I$	$3.77391+9.48109I$
$u=-0.546876-0.396366I$ $a=\ \ 0.459891+0.407083I$ $b=\ \ 0.513445+0.275172I$	$1.24652+2.20120I$	$3.77391-9.48109I$
$u=\ \ 1.44929$ $a=\ \ 3.12675$ $b=-2.35102$	0.798829	-5.03330
$u=\ \ 1.64226+0.10055I$ $a=-0.465382+0.144697I$ $b=\ \ 0.463753+0.629045I$	$9.13670+4.01794I$	$4.05125-2.49021I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.64226 - 0.10055I$ $a = -0.465382 - 0.144697I$ $b = \quad 0.463753 - 0.629045I$	$9.13670 - 4.01794I$	$4.05125 + 2.49021I$
$u = -1.65755 + 0.06178I$ $a = \quad 1.243350 - 0.432612I$ $b = -0.80550 + 1.39626I$	$7.62680 - 6.95712I$	$4.96915 + 7.75044I$
$u = -1.65755 - 0.06178I$ $a = \quad 1.243350 + 0.432612I$ $b = -0.80550 - 1.39626I$	$7.62680 + 6.95712I$	$4.96915 - 7.75044I$
$u = \quad 1.68754$ $a = -2.22031$ $b = \quad 1.17434$	12.5960	13.1870
$u = -0.154144$ $a = \quad 8.34734$ $b = -1.36621$	-4.74106	-8.86620
$u = -1.95010$ $a = \quad 0.540609$ $b = -0.414098$	7.37732	47.2750

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=-2.00000$ $b=\ \ 1.00000$	3.28987	12.0000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^{16}-8u^{15}+\cdots-12u+2)(u^{96}+5u^{95}+\cdots-4478u+638)$
c_2	$(u+1)(u^{16}+8u^{15}+\cdots+2u-1)(u^{96}-8u^{95}+\cdots+5u-1)$
c_3	$(u-1)(u^{16}+2u^{15}+\cdots-4u-1)(u^{96}+5u^{94}+\cdots-723u-97)$
c_4	$(u-1)(u^{16}+2u^{15}+\cdots-u-1)(u^{96}+2u^{95}+\cdots-5914u-463)$
c_5	$u(u^{16}+u^{15}+\cdots-10u-2)(u^{96}-2u^{95}+\cdots+4u+2)$
c_6	$(u-1)(u^{16}+4u^{15}+\cdots+u+1)(u^{96}-9u^{94}+\cdots-872u-79)$
c_7, c_8	$(u+1)(u^{16}-12u^{14}+\cdots+5u+1)(u^{96}-61u^{94}+\cdots+28u-1)$
c_9	$(u+1)(u^{16}-u^{15}+\cdots+2u-1)(u^{96}-3u^{95}+\cdots-1819u+211)$
c_{10}	$u(u^{16}-u^{15}+\cdots+10u-2)(u^{96}-2u^{95}+\cdots+4u+2)$
c_{11}, c_{12}	$(u-1)(u^{16}-12u^{14}+\cdots-5u+1)(u^{96}-61u^{94}+\cdots+28u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y(y^{16}+8y^{15}+\cdots-84y+4)$ $\cdot(y^{96}+23y^{95}+\cdots-5697484y+407044)$
c_2	$(y-1)(y^{16}+8y^{15}+\cdots-22y+1)(y^{96}+6y^{95}+\cdots-947y+1)$
c_3	$(y-1)(y^{16}+4y^{15}+\cdots-14y+1)$ $\cdot(y^{96}+10y^{95}+\cdots+487817y+9409)$
c_4	$(y-1)(y^{16}-6y^{15}+\cdots-11y+1)$ $\cdot(y^{96}-32y^{95}+\cdots-43540896y+214369)$
c_5, c_{10}	$y(y^{16}-17y^{15}+\cdots-88y+4)(y^{96}-74y^{95}+\cdots+592y+4)$
c_6	$(y-1)(y^{16}-4y^{15}+\cdots-11y+1)$ $\cdot(y^{96}-18y^{95}+\cdots-426056y+6241)$
c_7, c_8, c_{11} c_{12}	$(y-1)(y^{16}-24y^{15}+\cdots-51y+1)(y^{96}-122y^{95}+\cdots-208y+1)$
c_9	$(y-1)(y^{16}-11y^{15}+\cdots-6y+1)$ $\cdot(y^{96}-29y^{95}+\cdots-3023067y+44521)$