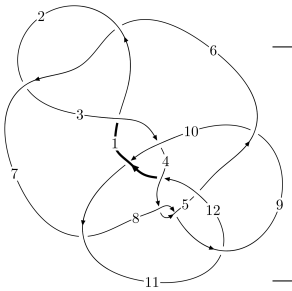
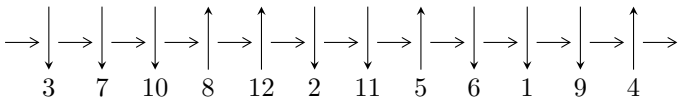
$12a_{0626}$ $(K12a_{0626})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$I_1^u = \langle 7.86533 \times 10^{2128} u^{183} + 1.64102 \times 10^{2128} u^{182} + \cdots + 3.32893 \times 10^{2127} b - 3.58156 \times 10^{2129},$
$-4.72797 \times 10^{2128} u^{183} - 2.22168 \times 10^{2128} u^{182} + \cdots + 3.32893 \times 10^{2127} a + 8.93000 \times 10^{2128},$
$u^{184} - 7u^{182} + \cdots - 48u + 1 \rangle$

$I_2^u = \langle 2.34982 \times 10^{43} u^{36} + 3.52408 \times 10^{43} u^{35} + \cdots + 1.78735 \times 10^{44} b + 4.37471 \times 10^{44},$
$5.61215 \times 10^{42} u^{36} - 9.92149 \times 10^{43} u^{35} + \cdots + 1.78735 \times 10^{44} a - 4.60729 \times 10^{44},\ u^{37} - u^{36} + \cdots + 4u - 1 \rangle$

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

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

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 225 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. $\boldsymbol{I_1^u = \langle 7.87 \times 10^{2128} u^{183} + 1.64 \times 10^{2128} u^{182} + \cdots + 3.33 \times 10^{2127} b - 3.58 \times 10^{2129},\ -4.73 \times 10^{2128} u^{183} - 2.22 \times 10^{2128} u^{182} + \cdots + 3.33 \times 10^{2127} a + 8.93 \times 10^{2128},\ u^{184} - 7u^{182} + \cdots - 48u + 1 \rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix} 14.2027u^{183} + 6.67387u^{182} + \cdots - 351.805u - 26.8254 \\ -23.6272u^{183} - 4.92958u^{182} + \cdots - 4642.15u + 107.589 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 143.075u^{183} + 20.7496u^{182} + \cdots + 37462.1u - 850.706 \\ 45.1284u^{183} + 8.48457u^{182} + \cdots + 10158.6u - 236.205 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 188.203u^{183} + 29.2342u^{182} + \cdots + 47620.7u - 1086.91 \\ 45.1284u^{183} + 8.48457u^{182} + \cdots + 10158.6u - 236.205 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 90.7028u^{183} + 29.7949u^{182} + \cdots - 4152.37u + 205.620 \\ 44.6146u^{183} + 7.83308u^{182} + \cdots + 11173.8u - 266.852 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -23.7361u^{183} - 12.8653u^{182} + \cdots + 12346.1u - 382.439 \\ -37.5927u^{183} - 6.74894u^{182} + \cdots - 9175.95u + 218.649 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 199.095u^{183} + 36.6781u^{182} + \cdots + 52161.6u - 1312.22 \\ 21.0295u^{183} + 3.87033u^{182} + \cdots + 4688.83u - 107.085 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 117.596u^{183} + 34.8904u^{182} + \cdots - 1564.59u + 215.030 \\ 62.2326u^{183} + 11.7051u^{182} + \cdots + 14455.2u - 343.796 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 147.569u^{183} + 21.4774u^{182} + \cdots + 38677.1u - 879.940 \\ 43.6597u^{183} + 8.20677u^{182} + \cdots + 9826.91u - 228.448 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 42.6808u^{183} + 13.3291u^{182} + \cdots + 3411.97u - 97.3779 \\ -1.28583u^{183} - 0.690805u^{182} + \cdots + 459.419u - 12.9308 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -155.803u^{183} - 28.2047u^{182} + \cdots - 37929.8u + 907.606$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{184} + 79u^{183} + \cdots + 66u + 1$
c_2, c_6	$u^{184} - 3u^{183} + \cdots - 4u - 1$
c_3	$u^{184} - 7u^{182} + \cdots - 48u + 1$
c_4, c_8	$u^{184} - 59u^{182} + \cdots + 22892u + 12427$
c_5	$u^{184} - 3u^{183} + \cdots - 116u + 8$
c_7	$u^{184} - 3u^{183} + \cdots - 12361749u + 6342353$
c_9	$u^{184} + 5u^{183} + \cdots + 295470856u - 528012557$
c_{10}	$u^{184} + 13u^{183} + \cdots + 40u - 1$
c_{11}	$u^{184} + 15u^{183} + \cdots - 15u + 25$
c_{12}	$u^{184} + 15u^{183} + \cdots + 30582126u + 2950777$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{184} + 61y^{183} + \cdots + 1678y + 1$
c_2, c_6	$y^{184} - 79y^{183} + \cdots - 66y + 1$
c_3	$y^{184} - 14y^{183} + \cdots - 68y + 1$
c_4, c_8	$y^{184} - 118y^{183} + \cdots - 10917315406y + 154430329$
c_5	$y^{184} + y^{183} + \cdots - 3536y + 64$
c_7	$y^{184} - 45y^{183} + \cdots - 873004298058573y + 40225441576609$
c_9	$y^{184} - 75y^{183} + \cdots - 1.97 \times 10^{19}y + 2.79 \times 10^{17}$
c_{10}	$y^{184} + y^{183} + \cdots + 34y + 1$
c_{11}	$y^{184} + 7y^{183} + \cdots - 68925y + 625$
c_{12}	$y^{184} + 69y^{183} + \cdots + 251263698396808y + 8707084903729$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.988796+0.151009I$ $a=-0.123078-0.275216I$ $b=\ \ 1.086630+0.123254I$	$-1.64795+0.01014I$	0
$u=-0.988796-0.151009I$ $a=-0.123078+0.275216I$ $b=\ \ 1.086630-0.123254I$	$-1.64795-0.01014I$	0
$u=\ \ 0.148896+0.988387I$ $a=\ \ 0.20037+2.37336I$ $b=-0.805346-0.421075I$	$-1.96495-1.26789I$	0
$u=\ \ 0.148896-0.988387I$ $a=\ \ 0.20037-2.37336I$ $b=-0.805346+0.421075I$	$-1.96495+1.26789I$	0
$u=-0.993627+0.177595I$ $a=\ \ 0.490822+0.089141I$ $b=\ \ 0.657938+0.218229I$	$-1.48461+0.05604I$	0
$u=-0.993627-0.177595I$ $a=\ \ 0.490822-0.089141I$ $b=\ \ 0.657938-0.218229I$	$-1.48461-0.05604I$	0
$u=-0.767288+0.673975I$ $a=-0.817072-0.214175I$ $b=\ \ 0.268200-0.069839I$	$-0.92285+3.03118I$	0
$u=-0.767288-0.673975I$ $a=-0.817072+0.214175I$ $b=\ \ 0.268200+0.069839I$	$-0.92285-3.03118I$	0
$u=\ \ 0.644715+0.723596I$ $a=-0.20569+1.56336I$ $b=-1.165230-0.656934I$	$-1.50318-8.74117I$	0
$u=\ \ 0.644715-0.723596I$ $a=-0.20569-1.56336I$ $b=-1.165230+0.656934I$	$-1.50318+8.74117I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.979304+0.332875I$ $a=\ \ 0.737503+0.966815I$ $b=\ \ 0.988373+0.350195I$	$-1.79371+5.24195I$	0
$u=-0.979304-0.332875I$ $a=\ \ 0.737503-0.966815I$ $b=\ \ 0.988373-0.350195I$	$-1.79371-5.24195I$	0
$u=\ \ 0.928414+0.200321I$ $a=-1.59659-0.19661I$ $b=-0.947327-0.369105I$	$-3.80906-3.52196I$	0
$u=\ \ 0.928414-0.200321I$ $a=-1.59659+0.19661I$ $b=-0.947327+0.369105I$	$-3.80906+3.52196I$	0
$u=-0.809600+0.680889I$ $a=\ \ 0.384132+0.730998I$ $b=-0.418408-0.936783I$	$0.32628+3.28163I$	0
$u=-0.809600-0.680889I$ $a=\ \ 0.384132-0.730998I$ $b=-0.418408+0.936783I$	$0.32628-3.28163I$	0
$u=\ \ 0.605967+0.870951I$ $a=-0.018067-1.244780I$ $b=\ \ 0.116387+0.868823I$	$2.64975-4.01921I$	0
$u=\ \ 0.605967-0.870951I$ $a=-0.018067+1.244780I$ $b=\ \ 0.116387-0.868823I$	$2.64975+4.01921I$	0
$u=\ \ 0.366462+0.843695I$ $a=\ \ 0.653044-1.222880I$ $b=-0.596664+0.701241I$	$2.84886+0.00272I$	0
$u=\ \ 0.366462-0.843695I$ $a=\ \ 0.653044+1.222880I$ $b=-0.596664-0.701241I$	$2.84886-0.00272I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.699561+0.827120I$ $a=\ 0.91193+2.11073I$ $b=\ 1.005720-0.639870I$	$3.87100+11.85910I$	0
$u=-0.699561-0.827120I$ $a=\ 0.91193-2.11073I$ $b=\ 1.005720+0.639870I$	$3.87100-11.85910I$	0
$u=\ 1.052930+0.255822I$ $a=-0.654819-0.313006I$ $b=-1.198340-0.031092I$	$-5.54921-3.55445I$	0
$u=\ 1.052930-0.255822I$ $a=-0.654819+0.313006I$ $b=-1.198340+0.031092I$	$-5.54921+3.55445I$	0
$u=\ 0.888043+0.217629I$ $a=\ 1.220600+0.097137I$ $b=\ 1.082100+0.417541I$	$-2.32112-6.87988I$	0
$u=\ 0.888043-0.217629I$ $a=\ 1.220600-0.097137I$ $b=\ 1.082100-0.417541I$	$-2.32112+6.87988I$	0
$u=\ 0.546999+0.940381I$ $a=\ 0.903420-0.953240I$ $b=-0.595553+0.756202I$	$2.90265-0.21493I$	0
$u=\ 0.546999-0.940381I$ $a=\ 0.903420+0.953240I$ $b=-0.595553-0.756202I$	$2.90265+0.21493I$	0
$u=\ 0.817498+0.731479I$ $a=-0.265860+1.341890I$ $b=\ 0.081161-0.318220I$	$-2.73921+2.06070I$	0
$u=\ 0.817498-0.731479I$ $a=-0.265860-1.341890I$ $b=\ 0.081161+0.318220I$	$-2.73921-2.06070I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.800089+0.417080I$ $a=-0.02237-1.55738I$ $b=-0.922984-0.399840I$	$-3.86517+0.54090I$	0
$u=-0.800089-0.417080I$ $a=-0.02237+1.55738I$ $b=-0.922984+0.399840I$	$-3.86517-0.54090I$	0
$u=0.884671+0.165116I$ $a=0.428900+0.168466I$ $b=1.306710-0.028320I$	$-6.09985-0.31423I$	0
$u=0.884671-0.165116I$ $a=0.428900-0.168466I$ $b=1.306710+0.028320I$	$-6.09985+0.31423I$	0
$u=0.791100+0.396311I$ $a=0.76895-1.31796I$ $b=-0.116475-0.128008I$	$0.59351+7.58137I$	0
$u=0.791100-0.396311I$ $a=0.76895+1.31796I$ $b=-0.116475+0.128008I$	$0.59351-7.58137I$	0
$u=-0.225789+0.832772I$ $a=-0.28666-1.58106I$ $b=-0.751134+0.629681I$	$3.31513+0.13206I$	0
$u=-0.225789-0.832772I$ $a=-0.28666+1.58106I$ $b=-0.751134-0.629681I$	$3.31513-0.13206I$	0
$u=0.610002+0.961286I$ $a=-1.125400+0.512298I$ $b=0.624395-0.740317I$	$5.02536-6.59589I$	0
$u=0.610002-0.961286I$ $a=-1.125400-0.512298I$ $b=0.624395+0.740317I$	$5.02536+6.59589I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.836010+0.206117I$ $a=\ \ 0.688519+0.174392I$ $b=\ \ 0.282847+0.028212I$	$-1.46001+0.11234I$	0
$u=-0.836010-0.206117I$ $a=\ \ 0.688519-0.174392I$ $b=\ \ 0.282847-0.028212I$	$-1.46001-0.11234I$	0
$u=-0.206240+1.135670I$ $a=-0.271797-0.934312I$ $b=\ \ 0.304957+0.915768I$	$5.90118+6.01032I$	0
$u=-0.206240-1.135670I$ $a=-0.271797+0.934312I$ $b=\ \ 0.304957-0.915768I$	$5.90118-6.01032I$	0
$u=\ \ 0.819430+0.164630I$ $a=\ \ 0.024107-1.186860I$ $b=-0.562324+0.794669I$	$2.35368-2.23949I$	0
$u=\ \ 0.819430-0.164630I$ $a=\ \ 0.024107+1.186860I$ $b=-0.562324-0.794669I$	$2.35368+2.23949I$	0
$u=-0.644932+0.971777I$ $a=\ \ 0.06540-1.66131I$ $b=-1.013040+0.616866I$	$1.59880+5.08361I$	0
$u=-0.644932-0.971777I$ $a=\ \ 0.06540+1.66131I$ $b=-1.013040-0.616866I$	$1.59880-5.08361I$	0
$u=-0.680805+0.951612I$ $a=-0.28340-1.99588I$ $b=-1.017460+0.646352I$	$1.63829+5.53928I$	0
$u=-0.680805-0.951612I$ $a=-0.28340+1.99588I$ $b=-1.017460-0.646352I$	$1.63829-5.53928I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.146400 + 0.238171I$ $a = 0.679781 + 0.079006I$ $b = 0.997314 - 0.489322I$	$-2.81614 + 3.74126I$	0
$u = 1.146400 - 0.238171I$ $a = 0.679781 - 0.079006I$ $b = 0.997314 + 0.489322I$	$-2.81614 - 3.74126I$	0
$u = -0.237276 + 1.160650I$ $a = 0.617156 - 0.614446I$ $b = -0.683102 + 0.461759I$	$2.89008 + 4.52282I$	0
$u = -0.237276 - 1.160650I$ $a = 0.617156 + 0.614446I$ $b = -0.683102 - 0.461759I$	$2.89008 - 4.52282I$	0
$u = 0.239699 + 1.181420I$ $a = -0.086171 + 1.174800I$ $b = 0.658187 - 0.787100I$	$3.51167 + 0.15515I$	0
$u = 0.239699 - 1.181420I$ $a = -0.086171 - 1.174800I$ $b = 0.658187 + 0.787100I$	$3.51167 - 0.15515I$	0
$u = 0.621187 + 0.486178I$ $a = -0.24085 + 2.92636I$ $b = -0.972251 - 0.391998I$	$-3.48361 - 2.08740I$	0
$u = 0.621187 - 0.486178I$ $a = -0.24085 - 2.92636I$ $b = -0.972251 + 0.391998I$	$-3.48361 + 2.08740I$	0
$u = -0.010233 + 1.218620I$ $a = 0.637640 - 0.769827I$ $b = -0.853997 + 0.571053I$	$3.03021 + 4.63784I$	0
$u = -0.010233 - 1.218620I$ $a = 0.637640 + 0.769827I$ $b = -0.853997 - 0.571053I$	$3.03021 - 4.63784I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.915152 + 0.806829I$ $a = 0.396078 + 0.567429I$ $b = 1.228310 - 0.243811I$	$-3.89959 - 3.03826I$	0
$u = 0.915152 - 0.806829I$ $a = 0.396078 - 0.567429I$ $b = 1.228310 + 0.243811I$	$-3.89959 + 3.03826I$	0
$u = -0.738444 + 0.986074I$ $a = 0.52162 + 1.53264I$ $b = 0.992293 - 0.651252I$	$7.00532 + 2.40995I$	0
$u = -0.738444 - 0.986074I$ $a = 0.52162 - 1.53264I$ $b = 0.992293 + 0.651252I$	$7.00532 - 2.40995I$	0
$u = 0.490626 + 1.137570I$ $a = -0.638821 + 0.671041I$ $b = 0.639745 - 0.749087I$	$8.06893 + 2.90952I$	0
$u = 0.490626 - 1.137570I$ $a = -0.638821 - 0.671041I$ $b = 0.639745 + 0.749087I$	$8.06893 - 2.90952I$	0
$u = -0.608705 + 0.456085I$ $a = 0.012049 + 1.135360I$ $b = 1.213310 - 0.620356I$	$-3.48102 + 2.76325I$	0
$u = -0.608705 - 0.456085I$ $a = 0.012049 - 1.135360I$ $b = 1.213310 + 0.620356I$	$-3.48102 - 2.76325I$	0
$u = -0.120210 + 0.742461I$ $a = -0.067714 - 0.947759I$ $b = -1.289460 + 0.424798I$	$0.95584 - 1.90857I$	0
$u = -0.120210 - 0.742461I$ $a = -0.067714 + 0.947759I$ $b = -1.289460 - 0.424798I$	$0.95584 + 1.90857I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.072180+0.651798I$ $a=\ \ 0.241556-0.100444I$ $b=\ \ 1.303820+0.028731I$	$-4.34400+12.61830I$	0
$u=-1.072180-0.651798I$ $a=\ \ 0.241556+0.100444I$ $b=\ \ 1.303820-0.028731I$	$-4.34400-12.61830I$	0
$u=-0.535290+0.515973I$ $a=\ \ 0.186309+0.165691I$ $b=\ \ 0.096573+0.756436I$	$0.70702+2.88973I$	0
$u=-0.535290-0.515973I$ $a=\ \ 0.186309-0.165691I$ $b=\ \ 0.096573-0.756436I$	$0.70702-2.88973I$	0
$u=-1.25758$ $a=-0.239948$ $b=\ \ 1.34959$	-2.30073	0
$u=-1.119740+0.604025I$ $a=-0.183593+0.024877I$ $b=-1.287730-0.022879I$	$-8.21160+6.57180I$	0
$u=-1.119740-0.604025I$ $a=-0.183593-0.024877I$ $b=-1.287730+0.022879I$	$-8.21160-6.57180I$	0
$u=\ \ 0.497512+1.177230I$ $a=\ \ 0.093685-1.291900I$ $b=\ \ 1.192750+0.628651I$	$3.24511-11.66680I$	0
$u=\ \ 0.497512-1.177230I$ $a=\ \ 0.093685+1.291900I$ $b=\ \ 1.192750-0.628651I$	$3.24511+11.66680I$	0
$u=\ \ 1.025210+0.773394I$ $a=-0.354355+1.364630I$ $b=-1.150710-0.654347I$	$-1.91027-9.07572I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.025210 - 0.773394I$ $a = -0.354355 - 1.364630I$ $b = -1.150710 + 0.654347I$	$-1.91027 + 9.07572I$	0
$u = 0.683652 + 0.123417I$ $a = 1.03402 - 2.90910I$ $b = 0.956229 + 0.371239I$	$-2.58461 + 0.57570I$	0
$u = 0.683652 - 0.123417I$ $a = 1.03402 + 2.90910I$ $b = 0.956229 - 0.371239I$	$-2.58461 - 0.57570I$	0
$u = -1.254780 + 0.403077I$ $a = -0.003847 - 1.115490I$ $b = -1.089030 + 0.666055I$	$0.73727 + 7.82190I$	0
$u = -1.254780 - 0.403077I$ $a = -0.003847 + 1.115490I$ $b = -1.089030 - 0.666055I$	$0.73727 - 7.82190I$	0
$u = -0.539808 + 0.399048I$ $a = -0.379461 - 0.019512I$ $b = 0.178352 - 0.753086I$	$-0.417406 + 1.227370I$	0
$u = -0.539808 - 0.399048I$ $a = -0.379461 + 0.019512I$ $b = 0.178352 + 0.753086I$	$-0.417406 - 1.227370I$	0
$u = 0.342939 + 0.556689I$ $a = 0.687706 + 0.922412I$ $b = -0.648194 - 1.004410I$	$3.17591 - 10.18350I$	0
$u = 0.342939 - 0.556689I$ $a = 0.687706 - 0.922412I$ $b = -0.648194 + 1.004410I$	$3.17591 + 10.18350I$	0
$u = -1.108430 + 0.773328I$ $a = -0.273605 - 0.738251I$ $b = 0.521586 + 0.922379I$	$1.09909 + 5.49407I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.108430-0.773328I$ $a=-0.273605+0.738251I$ $b=\ \ 0.521586-0.922379I$	$1.09909-5.49407I$	0
$u=-0.281449+0.559280I$ $a=\ \ 0.585901+0.960879I$ $b=-0.353996-0.980175I$	$0.91017+2.86934I$	0
$u=-0.281449-0.559280I$ $a=\ \ 0.585901-0.960879I$ $b=-0.353996+0.980175I$	$0.91017-2.86934I$	0
$u=-0.260479+0.568461I$ $a=-0.311477+0.124225I$ $b=\ \ 0.425433-0.588214I$	$-0.37471+1.71454I$	0
$u=-0.260479-0.568461I$ $a=-0.311477-0.124225I$ $b=\ \ 0.425433+0.588214I$	$-0.37471-1.71454I$	0
$u=\ \ 0.880312+1.059780I$ $a=\ \ 0.336343-1.165360I$ $b=-0.433432+0.902761I$	$4.03476-3.04387I$	0
$u=\ \ 0.880312-1.059780I$ $a=\ \ 0.336343+1.165360I$ $b=-0.433432-0.902761I$	$4.03476+3.04387I$	0
$u=-0.813629+1.130090I$ $a=-0.606104-1.010740I$ $b=\ \ 0.542380+0.472377I$	$-0.71156+3.14102I$	0
$u=-0.813629-1.130090I$ $a=-0.606104+1.010740I$ $b=\ \ 0.542380-0.472377I$	$-0.71156-3.14102I$	0
$u=\ \ 1.387230+0.121546I$ $a=-0.865615+0.428800I$ $b=-0.975700-0.510418I$	$-1.72289-6.12866I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.387230 - 0.121546I$ $a = -0.865615 - 0.428800I$ $b = -0.975700 + 0.510418I$	$-1.72289 + 6.12866I$	0
$u = 0.360688 + 1.365190I$ $a = 0.61075 + 1.63929I$ $b = -0.945929 - 0.475034I$	$-2.53110 - 2.43457I$	0
$u = 0.360688 - 1.365190I$ $a = 0.61075 - 1.63929I$ $b = -0.945929 + 0.475034I$	$-2.53110 + 2.43457I$	0
$u = 1.23655 + 0.68999I$ $a = -0.445890 - 0.555857I$ $b = -1.128960 + 0.249527I$	$-4.68589 - 1.23069I$	0
$u = 1.23655 - 0.68999I$ $a = -0.445890 + 0.555857I$ $b = -1.128960 - 0.249527I$	$-4.68589 + 1.23069I$	0
$u = -1.31683 + 0.53128I$ $a = -0.0324007 - 0.0221686I$ $b = -0.699072 - 0.424456I$	$-0.74924 + 2.14358I$	0
$u = -1.31683 - 0.53128I$ $a = -0.0324007 + 0.0221686I$ $b = -0.699072 + 0.424456I$	$-0.74924 - 2.14358I$	0
$u = -0.438904 + 0.368882I$ $a = 0.72685 - 4.56937I$ $b = -1.004780 + 0.502679I$	$-0.83418 + 11.24550I$	0
$u = -0.438904 - 0.368882I$ $a = 0.72685 + 4.56937I$ $b = -1.004780 - 0.502679I$	$-0.83418 - 11.24550I$	0
$u = -0.57192 + 1.30743I$ $a = -0.236393 + 1.186260I$ $b = 0.994679 - 0.674120I$	$2.48195 + 5.34945I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.57192-1.30743I$ $a=-0.236393-1.186260I$ $b=\ \ 0.994679+0.674120I$	$2.48195-5.34945I$	0
$u=-1.24835+0.74219I$ $a=\ \ 0.108765+0.454461I$ $b=\ \ 1.158560-0.091464I$	$-3.16155-0.44909I$	0
$u=-1.24835-0.74219I$ $a=\ \ 0.108765-0.454461I$ $b=\ \ 1.158560+0.091464I$	$-3.16155+0.44909I$	0
$u=\ \ 0.98711+1.08910I$ $a=-0.472139+0.981529I$ $b=\ \ 0.454621-0.922140I$	$-1.77747-9.27599I$	0
$u=\ \ 0.98711-1.08910I$ $a=-0.472139-0.981529I$ $b=\ \ 0.454621+0.922140I$	$-1.77747+9.27599I$	0
$u=\ \ 0.301571+0.428403I$ $a=-1.20118-2.04624I$ $b=-0.668624+0.270674I$	$2.55386-1.66933I$	0
$u=\ \ 0.301571-0.428403I$ $a=-1.20118+2.04624I$ $b=-0.668624-0.270674I$	$2.55386+1.66933I$	0
$u=-0.86454+1.19792I$ $a=\ \ 0.325867+0.770542I$ $b=-0.324630-0.810144I$	$0.99388+6.23929I$	0
$u=-0.86454-1.19792I$ $a=\ \ 0.325867-0.770542I$ $b=-0.324630+0.810144I$	$0.99388-6.23929I$	0
$u=-1.00289+1.09990I$ $a=-0.378214-0.812301I$ $b=\ \ 0.426666+0.707247I$	$-0.36746+3.58388I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00289-1.09990I$ $a=-0.378214+0.812301I$ $b=\ \ 0.426666-0.707247I$	$-0.36746-3.58388I$	0
$u=\ \ 0.332834+0.363179I$ $a=-0.72225-1.32824I$ $b=\ \ 0.676125+1.063350I$	$-0.77286-4.04335I$	0
$u=\ \ 0.332834-0.363179I$ $a=-0.72225+1.32824I$ $b=\ \ 0.676125-1.063350I$	$-0.77286+4.04335I$	0
$u=\ \ 1.02846+1.13217I$ $a=\ \ 0.426511-0.926706I$ $b=-0.452781+0.933312I$	$2.1433-15.4252I$	0
$u=\ \ 1.02846-1.13217I$ $a=\ \ 0.426511+0.926706I$ $b=-0.452781-0.933312I$	$2.1433+15.4252I$	0
$u=-0.017901+0.466477I$ $a=\ \ 1.41579-0.06132I$ $b=-0.597394-0.828572I$	$5.17646+0.99938I$	0
$u=-0.017901-0.466477I$ $a=\ \ 1.41579+0.06132I$ $b=-0.597394+0.828572I$	$5.17646-0.99938I$	0
$u=-0.212083+0.412396I$ $a=-3.74210+3.63347I$ $b=\ \ 0.969796-0.514799I$	$-3.03398+5.80931I$	0
$u=-0.212083-0.412396I$ $a=-3.74210-3.63347I$ $b=\ \ 0.969796+0.514799I$	$-3.03398-5.80931I$	0
$u=\ \ 0.279681+0.369864I$ $a=-0.54479-2.35859I$ $b=\ \ 1.053820+0.765802I$	$-1.08482-3.43416I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.279681 - 0.369864I$ $a = -0.54479 + 2.35859I$ $b = 1.053820 - 0.765802I$	$-1.08482 + 3.43416I$	0
$u = 1.33069 + 0.80219I$ $a = 0.337800 - 1.225500I$ $b = 1.119350 + 0.683391I$	$-0.75834 - 11.39260I$	0
$u = 1.33069 - 0.80219I$ $a = 0.337800 + 1.225500I$ $b = 1.119350 - 0.683391I$	$-0.75834 + 11.39260I$	0
$u = 1.11851 + 1.08788I$ $a = 0.71998 - 1.30628I$ $b = 0.837907 + 0.509140I$	$3.20084 - 4.94518I$	0
$u = 1.11851 - 1.08788I$ $a = 0.71998 + 1.30628I$ $b = 0.837907 - 0.509140I$	$3.20084 + 4.94518I$	0
$u = -0.407539$ $a = 2.56128$ $b = -1.04712$	-2.84890	0
$u = 1.27648 + 0.95389I$ $a = 0.131694 + 0.375736I$ $b = 0.961602 - 0.439045I$	$-2.68542 + 2.92436I$	0
$u = 1.27648 - 0.95389I$ $a = 0.131694 - 0.375736I$ $b = 0.961602 + 0.439045I$	$-2.68542 - 2.92436I$	0
$u = 0.385220 + 0.037548I$ $a = 2.28147 - 3.32217I$ $b = 1.044240 + 0.434968I$	$-3.07025 - 2.76884I$	$0. + 7.36902I$
$u = 0.385220 - 0.037548I$ $a = 2.28147 + 3.32217I$ $b = 1.044240 - 0.434968I$	$-3.07025 + 2.76884I$	$0. - 7.36902I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.76046+1.43510I$ $a=-0.039126-1.125220I$ $b=-1.061600+0.372964I$	$-1.01107+7.60721I$	0
$u=-0.76046-1.43510I$ $a=-0.039126+1.125220I$ $b=-1.061600-0.372964I$	$-1.01107-7.60721I$	0
$u=0.298337+0.173310I$ $a=-2.43937+0.69046I$ $b=-1.032690-0.679616I$	$3.85876-6.62124I$	$0.+4.68223I$
$u=0.298337-0.173310I$ $a=-2.43937-0.69046I$ $b=-1.032690+0.679616I$	$3.85876+6.62124I$	$0.-4.68223I$
$u=1.09301+1.27536I$ $a=-0.277080+1.304140I$ $b=-1.142580-0.592360I$	$-1.40781-11.46770I$	0
$u=1.09301-1.27536I$ $a=-0.277080-1.304140I$ $b=-1.142580+0.592360I$	$-1.40781+11.46770I$	0
$u=-1.17504+1.21703I$ $a=0.10930+1.45320I$ $b=1.139030-0.665679I$	$-3.8680+15.0935I$	0
$u=-1.17504-1.21703I$ $a=0.10930-1.45320I$ $b=1.139030+0.665679I$	$-3.8680-15.0935I$	0
$u=0.207541+0.222058I$ $a=3.08169-6.32231I$ $b=-0.647862-0.293049I$	$0.51642+7.43137I$	$-4.60261-9.03992I$
$u=0.207541-0.222058I$ $a=3.08169+6.32231I$ $b=-0.647862+0.293049I$	$0.51642-7.43137I$	$-4.60261+9.03992I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.91152+1.43800I$ $a=-0.588910-0.531029I$ $b=\ \ 0.876615+0.508694I$	$3.07280+0.81190I$	0
$u=-0.91152-1.43800I$ $a=-0.588910+0.531029I$ $b=\ \ 0.876615-0.508694I$	$3.07280-0.81190I$	0
$u=-1.22632+1.22678I$ $a=-0.161769-1.401580I$ $b=-1.144710+0.669093I$	$0.0255+21.2864I$	0
$u=-1.22632-1.22678I$ $a=-0.161769+1.401580I$ $b=-1.144710-0.669093I$	$0.0255-21.2864I$	0
$u=-1.16237+1.29323I$ $a=\ \ 0.083458-1.361320I$ $b=-1.137560+0.657597I$	$1.90829+8.77699I$	0
$u=-1.16237-1.29323I$ $a=\ \ 0.083458+1.361320I$ $b=-1.137560-0.657597I$	$1.90829-8.77699I$	0
$u=-1.39038+1.09574I$ $a=\ \ 0.187401+0.912758I$ $b=-0.700763-0.765824I$	$4.73341+4.82948I$	0
$u=-1.39038-1.09574I$ $a=\ \ 0.187401-0.912758I$ $b=-0.700763+0.765824I$	$4.73341-4.82948I$	0
$u=\ \ 1.28301+1.22519I$ $a=\ \ 0.241323-1.334540I$ $b=\ \ 1.090580+0.588202I$	$-2.31465-8.58348I$	0
$u=\ \ 1.28301-1.22519I$ $a=\ \ 0.241323+1.334540I$ $b=\ \ 1.090580-0.588202I$	$-2.31465+8.58348I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.188412 + 0.002157I$ $a = 4.48473 + 1.72593I$ $b = 0.858402 - 0.658650I$	$-0.63067 + 2.23967I$	$-3.92196 - 3.80049I$
$u = 0.188412 - 0.002157I$ $a = 4.48473 - 1.72593I$ $b = 0.858402 + 0.658650I$	$-0.63067 - 2.23967I$	$-3.92196 + 3.80049I$
$u = 0.0910729 + 0.0819671I$ $a = -2.09856 + 12.26570I$ $b = -1.031000 - 0.301255I$	$-3.02135 - 0.26149I$	$-5.41684 - 3.11966I$
$u = 0.0910729 - 0.0819671I$ $a = -2.09856 - 12.26570I$ $b = -1.031000 + 0.301255I$	$-3.02135 + 0.26149I$	$-5.41684 + 3.11966I$
$u = -0.0390914 + 0.1107260I$ $a = -0.06109 + 2.75504I$ $b = -1.04914 - 1.10424I$	$2.03179 + 3.08523I$	$56.1104 + 12.7397I$
$u = -0.0390914 - 0.1107260I$ $a = -0.06109 - 2.75504I$ $b = -1.04914 + 1.10424I$	$2.03179 - 3.08523I$	$56.1104 - 12.7397I$
$u = 0.0890997 + 0.0504655I$ $a = -18.7645 + 8.0208I$ $b = 0.669825 + 0.438834I$	$-2.05455 + 1.74445I$	$-3.44794 - 6.01763I$
$u = 0.0890997 - 0.0504655I$ $a = -18.7645 - 8.0208I$ $b = 0.669825 - 0.438834I$	$-2.05455 - 1.74445I$	$-3.44794 + 6.01763I$
$u = 1.89396 + 0.35196I$ $a = -0.335746 - 0.756060I$ $b = -0.875621 + 0.300839I$	$-3.77338 - 2.00400I$	0
$u = 1.89396 - 0.35196I$ $a = -0.335746 + 0.756060I$ $b = -0.875621 - 0.300839I$	$-3.77338 + 2.00400I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.27781 + 1.52385I$ $a = 0.018023 - 1.400540I$ $b = 1.000310 + 0.545144I$	$-2.03624 - 7.48362I$	0
$u = 1.27781 - 1.52385I$ $a = 0.018023 + 1.400540I$ $b = 1.000310 - 0.545144I$	$-2.03624 + 7.48362I$	0
$u = 1.81012 + 1.06294I$ $a = -0.115288 + 1.164590I$ $b = -0.973940 - 0.668176I$	$3.88314 - 10.26390I$	0
$u = 1.81012 - 1.06294I$ $a = -0.115288 - 1.164590I$ $b = -0.973940 + 0.668176I$	$3.88314 + 10.26390I$	0
$u = -0.97104 + 1.92043I$ $a = -0.141233 + 1.097720I$ $b = 1.004750 - 0.402363I$	$-4.92548 + 1.00190I$	0
$u = -0.97104 - 1.92043I$ $a = -0.141233 - 1.097720I$ $b = 1.004750 + 0.402363I$	$-4.92548 - 1.00190I$	0
$u = -0.63111 + 2.05812I$ $a = 0.278344 - 1.107990I$ $b = -0.950544 + 0.378844I$	$-0.94070 - 5.38457I$	0
$u = -0.63111 - 2.05812I$ $a = 0.278344 + 1.107990I$ $b = -0.950544 - 0.378844I$	$-0.94070 + 5.38457I$	0
$u = 2.01052 + 0.86194I$ $a = 0.303839 - 0.976859I$ $b = 0.694806 + 0.418512I$	$0.89674 + 6.90862I$	0
$u = 2.01052 - 0.86194I$ $a = 0.303839 + 0.976859I$ $b = 0.694806 - 0.418512I$	$0.89674 - 6.90862I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-2.12675+0.99734I$ $a=\ \ 0.038637+0.753170I$ $b=-0.991945-0.449472I$	$-4.68976-5.05642I$	0
$u=-2.12675-0.99734I$ $a=\ \ 0.038637-0.753170I$ $b=-0.991945+0.449472I$	$-4.68976+5.05642I$	0
$u=-1.98297+1.75795I$ $a=-0.100013-0.767418I$ $b=\ \ 0.975393+0.510875I$	$-0.08797-10.89400I$	0
$u=-1.98297-1.75795I$ $a=-0.100013+0.767418I$ $b=\ \ 0.975393-0.510875I$	$-0.08797+10.89400I$	0

II.

$\boldsymbol{I_2^u = \langle 2.35\times 10^{43}u^{36}+3.52\times 10^{43}u^{35}+\cdots+1.79\times 10^{44}b+4.37\times 10^{44},\ 5.61\times 10^{42}u^{36}-9.92\times 10^{43}u^{35}+\cdots+1.79\times 10^{44}a-4.61\times 10^{44},\ u^{37}-u^{36}+\cdots+4u-1\rangle}$

(i) Arc colorings

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

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

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

$$a_7 = \begin{pmatrix}-0.0313993u^{36}+0.555095u^{35}+\cdots-4.01365u+2.57772\\-0.131469u^{36}-0.197168u^{35}+\cdots+1.72237u-2.44760\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.807488u^{36}-0.533551u^{35}+\cdots-2.56367u+2.50772\\-0.773254u^{36}+0.242483u^{35}+\cdots+5.72149u-2.80259\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.0342347u^{36}-0.291067u^{35}+\cdots+3.15782u-0.294871\\-0.773254u^{36}+0.242483u^{35}+\cdots+5.72149u-2.80259\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-0.150908u^{36}+0.242237u^{35}+\cdots-1.18893u+0.357611\\-0.0989115u^{36}+0.268243u^{35}+\cdots-0.233715u+0.782847\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.0406396u^{36}+0.469978u^{35}+\cdots-3.93465u+2.41860\\-0.267021u^{36}+0.282794u^{35}+\cdots-1.16230u-1.63539\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.602896u^{36}+0.694391u^{35}+\cdots+6.99435u+0.265550\\0.0422453u^{36}+0.211405u^{35}+\cdots-9.76935u-1.41077\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-0.748321u^{36}+0.547840u^{35}+\cdots+5.59255u-1.73398\\0.730635u^{36}-0.354921u^{35}+\cdots-8.21608u+2.13639\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0.879624u^{36}-0.776669u^{35}+\cdots-1.50210u+2.25089\\-0.877179u^{36}+0.500926u^{35}+\cdots+5.12773u-2.44280\end{pmatrix}$$

$$a_5 = \begin{pmatrix}1.17272u^{36}-1.26745u^{35}+\cdots+1.02907u+2.37261\\-0.801270u^{36}+0.682939u^{35}+\cdots+0.143668u-2.51742\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -17.3303u^{36}+16.2740u^{35}+\cdots+35.6526u-77.1092$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} - 16u^{36} + \cdots + 7u - 1$
c_2	$u^{37} + 2u^{36} + \cdots + u - 1$
c_3	$u^{37} - u^{36} + \cdots + 4u - 1$
c_4	$u^{37} - u^{36} + \cdots + 2u - 1$
c_5	$u^{37} + 5u^{35} + \cdots + 77u - 23$
c_6	$u^{37} - 2u^{36} + \cdots + u + 1$
c_7	$u^{37} + 7u^{36} + \cdots + 8u - 1$
c_8	$u^{37} + u^{36} + \cdots + 2u + 1$
c_9	$u^{37} - 13u^{35} + \cdots - 7u^2 + 1$
c_{10}	$u^{37} - 13u^{36} + \cdots - 3u - 1$
c_{11}	$u^{37} + 14u^{36} + \cdots + u - 1$
c_{12}	$u^{37} - u^{36} + \cdots + u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} + 16y^{36} + \cdots - 97y - 1$
c_2, c_6	$y^{37} - 16y^{36} + \cdots + 7y - 1$
c_3	$y^{37} - 13y^{36} + \cdots + 26y - 1$
c_4, c_8	$y^{37} - 29y^{36} + \cdots + 8y - 1$
c_5	$y^{37} + 10y^{36} + \cdots + 2387y - 529$
c_7	$y^{37} - 9y^{36} + \cdots + 18y - 1$
c_9	$y^{37} - 26y^{36} + \cdots + 14y - 1$
c_{10}	$y^{37} + y^{36} + \cdots - 5y - 1$
c_{11}	$y^{37} + 30y^{35} + \cdots + 19y - 1$
c_{12}	$y^{37} + 27y^{36} + \cdots - 25y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.919812+0.030479I$ $a=-0.42199+1.46792I$ $b=-0.871478-0.718571I$	$2.09731-9.41848I$	$-4.02186+9.55609I$
$u=-0.919812-0.030479I$ $a=-0.42199-1.46792I$ $b=-0.871478+0.718571I$	$2.09731+9.41848I$	$-4.02186-9.55609I$
$u=1.039120+0.338133I$ $a=-0.057474+0.427331I$ $b=-0.961058+0.464144I$	$-3.53432+4.79223I$	$-10.03575-6.32174I$
$u=1.039120-0.338133I$ $a=-0.057474-0.427331I$ $b=-0.961058-0.464144I$	$-3.53432-4.79223I$	$-10.03575+6.32174I$
$u=-1.098690+0.010456I$ $a=-1.303030-0.038595I$ $b=-0.787815-0.409378I$	$-2.86852+1.16245I$	$-8.40603+0.11031I$
$u=-1.098690-0.010456I$ $a=-1.303030+0.038595I$ $b=-0.787815+0.409378I$	$-2.86852-1.16245I$	$-8.40603-0.11031I$
$u=1.12805$ $a=-0.247603$ $b=1.36934$	-2.38884	-47.7450
$u=-0.956922+0.645432I$ $a=0.697090-0.159214I$ $b=-0.817713-0.214305I$	$-1.70387+2.35535I$	$-10.93989-4.36753I$
$u=-0.956922-0.645432I$ $a=0.697090+0.159214I$ $b=-0.817713+0.214305I$	$-1.70387-2.35535I$	$-10.93989+4.36753I$
$u=-0.576296+1.013920I$ $a=-0.186533+1.161610I$ $b=0.257704-0.271674I$	$2.99915+3.10489I$	$-0.39538-2.42698I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.576296-1.013920I$ $a=-0.186533-1.161610I$ $b=\ \ 0.257704+0.271674I$	$2.99915-3.10489I$	$-0.39538+2.42698I$
$u=-0.678470+0.405459I$ $a=-0.188382+0.152972I$ $b=-0.024536-0.696652I$	$-0.39909+1.79452I$	$-6.29364-5.60398I$
$u=-0.678470-0.405459I$ $a=-0.188382-0.152972I$ $b=-0.024536+0.696652I$	$-0.39909-1.79452I$	$-6.29364+5.60398I$
$u=\ \ 1.082380+0.574961I$ $a=-0.541485-0.629601I$ $b=-1.167200+0.197898I$	$-4.22610-2.39642I$	$-10.13020+1.62470I$
$u=\ \ 1.082380-0.574961I$ $a=-0.541485+0.629601I$ $b=-1.167200-0.197898I$	$-4.22610+2.39642I$	$-10.13020-1.62470I$
$u=\ \ 1.196350+0.295267I$ $a=-0.928064+0.745520I$ $b=-1.021920-0.447628I$	$-2.98879-5.27105I$	$-10.43162+6.70213I$
$u=\ \ 1.196350-0.295267I$ $a=-0.928064-0.745520I$ $b=-1.021920+0.447628I$	$-2.98879+5.27105I$	$-10.43162-6.70213I$
$u=\ \ 0.612564+0.320466I$ $a=\ \ 0.95614-2.33287I$ $b=\ \ 0.993621+0.358075I$	$-3.56205-1.13003I$	$-12.10460+1.44487I$
$u=\ \ 0.612564-0.320466I$ $a=\ \ 0.95614+2.33287I$ $b=\ \ 0.993621-0.358075I$	$-3.56205+1.13003I$	$-12.10460-1.44487I$
$u=-0.984219+0.887136I$ $a=-0.299380-0.689317I$ $b=\ \ 0.438079+0.857247I$	$1.04400+4.83398I$	$-4.00000+0.I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.984219-0.887136I$ $a=-0.299380+0.689317I$ $b=\ 0.438079-0.857247I$	$1.04400-4.83398I$	$-4.00000+0.I$
$u=-0.896856+1.051930I$ $a=\ 0.155241+1.078320I$ $b=-0.405477-0.777693I$	$3.47602+3.39216I$	$0.-7.43706I$
$u=-0.896856-1.051930I$ $a=\ 0.155241-1.078320I$ $b=-0.405477+0.777693I$	$3.47602-3.39216I$	$0.+7.43706I$
$u=\ 0.762923+1.167780I$ $a=-0.818113+0.837996I$ $b=\ 0.978061-0.454088I$	$-0.31930+9.85946I$	0
$u=\ 0.762923-1.167780I$ $a=-0.818113-0.837996I$ $b=\ 0.978061+0.454088I$	$-0.31930-9.85946I$	0
$u=\ 0.230141+0.538013I$ $a=-1.02818-2.27774I$ $b=\ 1.009320+0.379421I$	$-3.65548-1.15307I$	$-11.73149+0.77224I$
$u=\ 0.230141-0.538013I$ $a=-1.02818+2.27774I$ $b=\ 1.009320-0.379421I$	$-3.65548+1.15307I$	$-11.73149-0.77224I$
$u=\ 1.16249+0.95956I$ $a=\ 0.374386-1.278950I$ $b=\ 1.130730+0.628908I$	$-1.07319-10.35110I$	0
$u=\ 1.16249-0.95956I$ $a=\ 0.374386+1.278950I$ $b=\ 1.130730-0.628908I$	$-1.07319+10.35110I$	0
$u=-1.20265+0.92216I$ $a=\ 0.72141+1.55074I$ $b=\ 0.788329-0.404714I$	$0.40085-6.30372I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.20265-0.92216I$ $a=\ \ 0.72141-1.55074I$ $b=\ \ 0.788329+0.404714I$	$0.40085+6.30372I$	0
$u=-0.362447+0.305484I$ $a=-0.63288+2.06703I$ $b=\ \ 0.855270-0.876001I$	$-1.00838+3.84747I$	$-14.9212-11.0451I$
$u=-0.362447-0.305484I$ $a=-0.63288-2.06703I$ $b=\ \ 0.855270+0.876001I$	$-1.00838-3.84747I$	$-14.9212+11.0451I$
$u=\ \ 1.27645+1.14651I$ $a=\ \ 0.011731+1.242810I$ $b=-1.122180-0.635948I$	$1.39270-8.79520I$	0
$u=\ \ 1.27645-1.14651I$ $a=\ \ 0.011731-1.242810I$ $b=-1.122180+0.635948I$	$1.39270+8.79520I$	0
$u=\ \ 0.249933+0.117412I$ $a=\ \ 0.613321-1.138000I$ $b=-0.95641+1.10225I$	$1.96400-3.12237I$	$-34.9706+35.6599I$
$u=\ \ 0.249933-0.117412I$ $a=\ \ 0.613321+1.138000I$ $b=-0.95641-1.10225I$	$1.96400+3.12237I$	$-34.9706-35.6599I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -u^2+4u-16$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_6 c_7, c_{10}	$(y-1)^3$
c_3, c_4, c_8 c_9	$y^3 - y^2 + 2y - 1$
c_5	y^3
c_{11}	$y^3 - 5y^2 - 2y - 1$
c_{12}	$y^3 - 2y^2 - 3y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.877439 + 0.744862I$ $a = 0.662359 - 0.562280I$ $b = 1.00000$	-3.28987	$-12.70532 + 1.67231I$
$u = 0.877439 - 0.744862I$ $a = 0.662359 + 0.562280I$ $b = 1.00000$	-3.28987	$-12.70532 - 1.67231I$
$u = -0.754878$ $a = -1.32472$ $b = 1.00000$	-3.28987	-19.5890

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

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

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

V. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^3)(u+1)(u^{37}-16u^{36}+\cdots+7u-1)$ $\cdot(u^{184}+79u^{183}+\cdots+66u+1)$
c_2	$((u-1)^3)(u+1)(u^{37}+2u^{36}+\cdots+u-1)(u^{184}-3u^{183}+\cdots-4u-1)$
c_3	$(u+1)(u^3-u^2+1)(u^{37}-u^{36}+\cdots+4u-1)(u^{184}-7u^{182}+\cdots-48u+1)$
c_4	$(u+1)(u^3-u^2+1)(u^{37}-u^{36}+\cdots+2u-1)$ $\cdot(u^{184}-59u^{182}+\cdots+22892u+12427)$
c_5	$u^4(u^{37}+5u^{35}+\cdots+77u-23)(u^{184}-3u^{183}+\cdots-116u+8)$
c_6	$((u+1)^4)(u^{37}-2u^{36}+\cdots+u+1)(u^{184}-3u^{183}+\cdots-4u-1)$
c_7	$u(u-1)^3(u^{37}+7u^{36}+\cdots+8u-1)$ $\cdot(u^{184}-3u^{183}+\cdots-12361749u+6342353)$
c_8	$(u+1)(u^3+u^2-1)(u^{37}+u^{36}+\cdots+2u+1)$ $\cdot(u^{184}-59u^{182}+\cdots+22892u+12427)$
c_9	$(u+1)(u^3+u^2-1)(u^{37}-13u^{35}+\cdots-7u^2+1)$ $\cdot(u^{184}+5u^{183}+\cdots+295470856u-528012557)$
c_{10}	$u(u-1)^3(u^{37}-13u^{36}+\cdots-3u-1)(u^{184}+13u^{183}+\cdots+40u-1)$
c_{11}	$(u+1)(u^3+3u^2+2u+1)(u^{37}+14u^{36}+\cdots+u-1)$ $\cdot(u^{184}+15u^{183}+\cdots-15u+25)$
c_{12}	$(u+1)(u^3-2u^2+u-1)(u^{37}-u^{36}+\cdots+u-1)$ $\cdot(u^{184}+15u^{183}+\cdots+30582126u+2950777)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^4)(y^{37}+16y^{36}+\cdots-97y-1)(y^{184}+61y^{183}+\cdots+1678y+1)$
c_2, c_6	$((y-1)^4)(y^{37}-16y^{36}+\cdots+7y-1)(y^{184}-79y^{183}+\cdots-66y+1)$
c_3	$(y-1)(y^3-y^2+2y-1)(y^{37}-13y^{36}+\cdots+26y-1)$ $\cdot(y^{184}-14y^{183}+\cdots-68y+1)$
c_4, c_8	$(y-1)(y^3-y^2+2y-1)(y^{37}-29y^{36}+\cdots+8y-1)$ $\cdot(y^{184}-118y^{183}+\cdots-10917315406y+154430329)$
c_5	$y^4(y^{37}+10y^{36}+\cdots+2387y-529)(y^{184}+y^{183}+\cdots-3536y+64)$
c_7	$y(y-1)^3(y^{37}-9y^{36}+\cdots+18y-1)$ $\cdot(y^{184}-45y^{183}+\cdots-873004298058573y+40225441576609)$
c_9	$(y-1)(y^3-y^2+2y-1)(y^{37}-26y^{36}+\cdots+14y-1)$ $\cdot(y^{184}-75y^{183}+\cdots-1.97\times10^{19}y+2.79\times10^{17})$
c_{10}	$y(y-1)^3(y^{37}+y^{36}+\cdots-5y-1)(y^{184}+y^{183}+\cdots+34y+1)$
c_{11}	$(y-1)(y^3-5y^2-2y-1)(y^{37}+30y^{35}+\cdots+19y-1)$ $\cdot(y^{184}+7y^{183}+\cdots-68925y+625)$
c_{12}	$(y-1)(y^3-2y^2-3y-1)(y^{37}+27y^{36}+\cdots-25y-1)$ $\cdot(y^{184}+69y^{183}+\cdots+251263698396808y+8707084903729)$