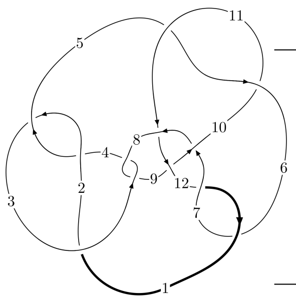
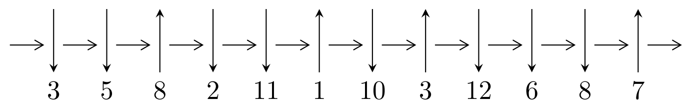
$12n_{0263}$ ($K12n_{0263}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & -5.10710 \times 10^{324} u^{87} - 9.56312 \times 10^{325} u^{86} + \cdots + 1.34371 \times 10^{329} b + 2.04185 \times 10^{329}, \\
& 1.04950 \times 10^{330} u^{87} + 1.94168 \times 10^{330} u^{86} + \cdots + 2.37970 \times 10^{332} a - 5.85379 \times 10^{332}, \\
& u^{88} + 2u^{87} + \cdots + 4968u - 1771 \rangle \\
I_2^u = \langle & b + 1,\ 6u^8 + 7u^7 + 12u^6 + 8u^5 + 17u^4 + 10u^3 + 9u^2 + 7a + 5u + 8, \\
& u^9 + u^8 + 2u^7 + u^6 + 3u^5 + u^4 + 2u^3 + u - 1 \rangle \\
I_3^u = \langle & 2u^{15} - 2u^{14} + \cdots + b - 2,\ 3u^{15} - u^{14} + \cdots + a + 5u,\ u^{16} + 8u^{14} + \cdots + 3u + 1 \rangle
\end{aligned}$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 113 representations.

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[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. $\boldsymbol{I_1^u = \langle -5.11 \times 10^{324} u^{87} - 9.56 \times 10^{325} u^{86} + \cdots + 1.34 \times 10^{329} b + 2.04 \times 10^{329},\ 1.05 \times 10^{330} u^{87} + 1.94 \times 10^{330} u^{86} + \cdots + 2.38 \times 10^{332} a - 5.85 \times 10^{332},\ u^{88} + 2u^{87} + \cdots + 4968u - 1771 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.00441021u^{87} - 0.00815934u^{86} + \cdots + 21.8561u + 2.45988 \\ 0.0000380076u^{87} + 0.000711697u^{86} + \cdots + 9.10028u - 1.51957 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00437220u^{87} - 0.00744764u^{86} + \cdots + 30.9564u + 0.940316 \\ 0.0000380076u^{87} + 0.000711697u^{86} + \cdots + 9.10028u - 1.51957 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.00153178u^{87} - 0.00266896u^{86} + \cdots + 23.2890u - 2.25667 \\ -0.000996652u^{87} - 0.00124794u^{86} + \cdots + 14.3592u - 2.12843 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.00142383u^{87} - 0.00605369u^{86} + \cdots - 33.0919u + 13.1203 \\ -0.000364423u^{87} - 0.00102860u^{86} + \cdots - 28.1927u + 9.11040 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.00292538u^{87} - 0.00347282u^{86} + \cdots + 53.4302u - 13.5553 \\ -0.000932894u^{87} + 0.0000161336u^{86} + \cdots + 34.8142u - 9.59675 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} -0.00119455u^{87} - 0.00482926u^{86} + \cdots - 31.9654u + 12.3640 \\ -0.000562133u^{87} - 0.00184393u^{86} + \cdots - 30.4650u + 9.71045 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.00596932u^{87} + 0.0100899u^{86} + \cdots - 21.3404u - 4.51265 \\ 0.00269198u^{87} + 0.00756739u^{86} + \cdots + 12.7020u - 10.9619 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.00392308u^{87} + 0.00976005u^{86} + \cdots - 4.05932u - 10.1331 \\ 0.00259711u^{87} + 0.00552722u^{86} + \cdots + 16.4800u - 8.72611 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.0135860u^{87} - 0.0234158u^{86} + \cdots + 148.906u - 31.3158$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{88} + 36u^{87} + \cdots + 9016u + 2401$
c_2, c_4	$u^{88} - 16u^{87} + \cdots + 504u - 49$
c_3, c_8	$u^{88} + u^{87} + \cdots + 14336u + 25088$
c_5, c_{10}	$u^{88} + 2u^{87} + \cdots + 4968u - 1771$
c_6, c_{12}	$u^{88} + 3u^{87} + \cdots - 1497u - 181$
c_7	$u^{88} - 4u^{87} + \cdots + 2u - 1$
c_9	$u^{88} - 14u^{87} + \cdots - 5848u + 1043$
c_{11}	$u^{88} - u^{87} + \cdots + 8558243u - 2435537$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{88} + 48y^{87} + \cdots - 1539089020y + 5764801$
c_2, c_4	$y^{88} - 36y^{87} + \cdots - 9016y + 2401$
c_3, c_8	$y^{88} - 63y^{87} + \cdots - 10096214016y + 629407744$
c_5, c_{10}	$y^{88} + 70y^{87} + \cdots + 39623986y + 3136441$
c_6, c_{12}	$y^{88} + 49y^{87} + \cdots - 883509y + 32761$
c_7	$y^{88} - 16y^{87} + \cdots + 6y + 1$
c_9	$y^{88} + 2y^{87} + \cdots + 12594048y + 1087849$
c_{11}	$y^{88} + 33y^{87} + \cdots + 85934090519941y + 5931840478369$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.805310 + 0.589984I$ $a = 0.939329 + 0.447844I$ $b = 1.000810 - 0.612397I$	$-0.95191 + 5.34222I$	0
$u = -0.805310 - 0.589984I$ $a = 0.939329 - 0.447844I$ $b = 1.000810 + 0.612397I$	$-0.95191 - 5.34222I$	0
$u = 0.992163 + 0.083390I$ $a = 0.306400 + 0.290281I$ $b = -0.860253 - 0.469883I$	$-3.57000 - 4.86222I$	0
$u = 0.992163 - 0.083390I$ $a = 0.306400 - 0.290281I$ $b = -0.860253 + 0.469883I$	$-3.57000 + 4.86222I$	0
$u = 0.948677 + 0.240901I$ $a = 0.257262 + 0.041899I$ $b = 0.816492 - 0.831232I$	$4.48132 + 0.68778I$	0
$u = 0.948677 - 0.240901I$ $a = 0.257262 - 0.041899I$ $b = 0.816492 + 0.831232I$	$4.48132 - 0.68778I$	0
$u = 0.139706 + 0.952235I$ $a = -0.925127 + 0.095450I$ $b = 1.61154 - 0.00181I$	$-8.88186 - 0.52240I$	0
$u = 0.139706 - 0.952235I$ $a = -0.925127 - 0.095450I$ $b = 1.61154 + 0.00181I$	$-8.88186 + 0.52240I$	0
$u = 0.517483 + 0.776305I$ $a = -1.78011 + 2.41840I$ $b = -0.936656 + 0.081694I$	$-2.86090 - 2.57918I$	0
$u = 0.517483 - 0.776305I$ $a = -1.78011 - 2.41840I$ $b = -0.936656 - 0.081694I$	$-2.86090 + 2.57918I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.919116 + 0.059965I$ $a = 0.926180 + 0.256722I$ $b = 0.955514 - 0.798995I$	$4.06052 + 5.39830I$	0
$u = 0.919116 - 0.059965I$ $a = 0.926180 - 0.256722I$ $b = 0.955514 + 0.798995I$	$4.06052 - 5.39830I$	0
$u = -0.740792 + 0.830928I$ $a = 0.971335 + 0.053984I$ $b = 0.063149 - 0.256272I$	$-0.52740 + 2.78156I$	0
$u = -0.740792 - 0.830928I$ $a = 0.971335 - 0.053984I$ $b = 0.063149 + 0.256272I$	$-0.52740 - 2.78156I$	0
$u = -0.248018 + 0.848575I$ $a = 4.78654 - 1.31097I$ $b = -0.711645 + 0.146889I$	$-2.35191 + 3.21223I$	$-7.96555 - 6.35540I$
$u = -0.248018 - 0.848575I$ $a = 4.78654 + 1.31097I$ $b = -0.711645 - 0.146889I$	$-2.35191 - 3.21223I$	$-7.96555 + 6.35540I$
$u = -0.079212 + 1.132010I$ $a = -0.24213 + 2.07975I$ $b = 0.808393 - 0.790949I$	$2.28913 - 1.10084I$	0
$u = -0.079212 - 1.132010I$ $a = -0.24213 - 2.07975I$ $b = 0.808393 + 0.790949I$	$2.28913 + 1.10084I$	0
$u = 0.319029 + 1.102470I$ $a = 0.16501 - 1.71908I$ $b = 1.18756 + 0.90857I$	$6.66068 - 5.31014I$	0
$u = 0.319029 - 1.102470I$ $a = 0.16501 + 1.71908I$ $b = 1.18756 - 0.90857I$	$6.66068 + 5.31014I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.174859+0.815548I$ $a=\ \ 0.677317+0.300319I$ $b=\ \ 0.575930+0.151275I$	$1.08551+1.92358I$	$4.64840-3.23156I$
$u=-0.174859-0.815548I$ $a=\ \ 0.677317-0.300319I$ $b=\ \ 0.575930-0.151275I$	$1.08551-1.92358I$	$4.64840+3.23156I$
$u=-0.767240+0.896651I$ $a=\ \ 0.121871+0.271621I$ $b=\ \ 0.760360+0.637175I$	$-0.156171+0.447897I$	0
$u=-0.767240-0.896651I$ $a=\ \ 0.121871-0.271621I$ $b=\ \ 0.760360-0.637175I$	$-0.156171-0.447897I$	0
$u=\ \ 0.237078+0.779145I$ $a=-1.16266+0.85834I$ $b=-1.135060-0.295927I$	$-2.63864-1.15581I$	$-8.11133+0.I$
$u=\ \ 0.237078-0.779145I$ $a=-1.16266-0.85834I$ $b=-1.135060+0.295927I$	$-2.63864+1.15581I$	$-8.11133+0.I$
$u=-0.451795+1.101000I$ $a=\ \ 0.528741-0.757913I$ $b=-0.311022+0.556483I$	$0.22772+2.36626I$	0
$u=-0.451795-1.101000I$ $a=\ \ 0.528741+0.757913I$ $b=-0.311022-0.556483I$	$0.22772-2.36626I$	0
$u=\ \ 0.938892+0.789370I$ $a=\ \ 0.381760-0.534102I$ $b=\ \ 0.744153+0.149516I$	$-5.45148+0.98119I$	0
$u=\ \ 0.938892-0.789370I$ $a=\ \ 0.381760+0.534102I$ $b=\ \ 0.744153-0.149516I$	$-5.45148-0.98119I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.785869 + 0.950757I$ $a = 0.384303 - 0.295118I$ $b = 0.839629 + 0.078942I$	$-4.90136 - 7.25149I$	0
$u = 0.785869 - 0.950757I$ $a = 0.384303 + 0.295118I$ $b = 0.839629 - 0.078942I$	$-4.90136 + 7.25149I$	0
$u = 0.135066 + 1.254400I$ $a = -0.86601 - 1.61832I$ $b = 0.951322 + 0.752407I$	$1.84545 - 6.92325I$	0
$u = 0.135066 - 1.254400I$ $a = -0.86601 + 1.61832I$ $b = 0.951322 - 0.752407I$	$1.84545 + 6.92325I$	0
$u = 0.166697 + 1.254150I$ $a = 0.45531 - 1.38825I$ $b = -0.879422 + 0.969350I$	$1.34449 - 3.11057I$	0
$u = 0.166697 - 1.254150I$ $a = 0.45531 + 1.38825I$ $b = -0.879422 - 0.969350I$	$1.34449 + 3.11057I$	0
$u = 0.128440 + 1.272930I$ $a = -0.271149 + 0.753744I$ $b = -1.331880 - 0.096691I$	$1.74481 - 1.77274I$	0
$u = 0.128440 - 1.272930I$ $a = -0.271149 - 0.753744I$ $b = -1.331880 + 0.096691I$	$1.74481 + 1.77274I$	0
$u = -0.696650 + 0.064826I$ $a = -0.85984 - 3.03345I$ $b = -1.216760 + 0.127728I$	$-4.59376 - 2.75184I$	$-8.12364 + 4.75878I$
$u = -0.696650 - 0.064826I$ $a = -0.85984 + 3.03345I$ $b = -1.216760 - 0.127728I$	$-4.59376 + 2.75184I$	$-8.12364 - 4.75878I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.112427 + 1.300630I$ $a = -0.610156 + 1.055710I$ $b = 0.671732 - 1.206590I$	$8.28391 + 2.17535I$	0
$u = 0.112427 - 1.300630I$ $a = -0.610156 - 1.055710I$ $b = 0.671732 + 1.206590I$	$8.28391 - 2.17535I$	0
$u = -0.313929 + 1.278860I$ $a = 0.149566 - 0.089877I$ $b = -1.57140 - 0.02860I$	$-0.73301 + 6.46230I$	0
$u = -0.313929 - 1.278860I$ $a = 0.149566 + 0.089877I$ $b = -1.57140 + 0.02860I$	$-0.73301 - 6.46230I$	0
$u = -0.266726 + 1.305550I$ $a = 0.20459 - 1.68443I$ $b = -0.771564 + 0.690828I$	$3.68905 + 4.17717I$	0
$u = -0.266726 - 1.305550I$ $a = 0.20459 + 1.68443I$ $b = -0.771564 - 0.690828I$	$3.68905 - 4.17717I$	0
$u = -0.021756 + 1.350550I$ $a = 0.54100 + 1.31164I$ $b = -1.064570 - 0.638718I$	$2.82569 - 0.98099I$	0
$u = -0.021756 - 1.350550I$ $a = 0.54100 - 1.31164I$ $b = -1.064570 + 0.638718I$	$2.82569 + 0.98099I$	0
$u = 0.018865 + 0.638570I$ $a = 0.311943 + 0.067730I$ $b = 0.240022 + 0.542471I$	$0.93570 + 1.73737I$	$2.01048 - 1.71572I$
$u = 0.018865 - 0.638570I$ $a = 0.311943 - 0.067730I$ $b = 0.240022 - 0.542471I$	$0.93570 - 1.73737I$	$2.01048 + 1.71572I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.588985$ $a=\ \ 1.28655$ $b=\ \ 0.415532$	-1.64409	-5.83610
$u=-0.094002+0.577464I$ $a=-1.39684+1.25204I$ $b=-1.093430-0.334889I$	$-2.55730-1.15360I$	$-7.35870-0.72400I$
$u=-0.094002-0.577464I$ $a=-1.39684-1.25204I$ $b=-1.093430+0.334889I$	$-2.55730+1.15360I$	$-7.35870+0.72400I$
$u=\ \ 0.54155+1.31866I$ $a=\ \ 0.48355-1.60161I$ $b=\ \ 1.146830+0.768411I$	$7.90999-10.78390I$	0
$u=\ \ 0.54155-1.31866I$ $a=\ \ 0.48355+1.60161I$ $b=\ \ 1.146830-0.768411I$	$7.90999+10.78390I$	0
$u=\ \ 0.41333+1.36783I$ $a=\ \ 0.26044+1.47995I$ $b=-0.956288-0.865062I$	$1.05954-9.78750I$	0
$u=\ \ 0.41333-1.36783I$ $a=\ \ 0.26044-1.47995I$ $b=-0.956288+0.865062I$	$1.05954+9.78750I$	0
$u=-1.40756+0.26250I$ $a=\ \ 0.374109-0.401712I$ $b=\ \ 0.629173+0.870781I$	$1.45716+4.42701I$	0
$u=-1.40756-0.26250I$ $a=\ \ 0.374109+0.401712I$ $b=\ \ 0.629173-0.870781I$	$1.45716-4.42701I$	0
$u=\ \ 0.42686+1.41707I$ $a=-0.688198+0.711293I$ $b=\ \ 0.591567-1.025660I$	$9.65161-4.27098I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.42686 - 1.41707I$ $a = -0.688198 - 0.711293I$ $b = 0.591567 + 1.025660I$	$9.65161 + 4.27098I$	0
$u = -0.26866 + 1.45831I$ $a = -0.184670 + 1.371300I$ $b = 1.27277 - 0.73698I$	$5.43825 + 8.83857I$	0
$u = -0.26866 - 1.45831I$ $a = -0.184670 - 1.371300I$ $b = 1.27277 + 0.73698I$	$5.43825 - 8.83857I$	0
$u = -0.478957 + 0.175114I$ $a = 0.040374 - 1.124940I$ $b = -0.611656 + 0.327422I$	$-0.78467 + 1.23926I$	$-5.32242 - 5.47295I$
$u = -0.478957 - 0.175114I$ $a = 0.040374 + 1.124940I$ $b = -0.611656 - 0.327422I$	$-0.78467 - 1.23926I$	$-5.32242 + 5.47295I$
$u = -0.07800 + 1.49272I$ $a = -0.256225 - 1.188790I$ $b = 0.392465 + 1.111420I$	$8.16387 + 2.18472I$	0
$u = -0.07800 - 1.49272I$ $a = -0.256225 + 1.188790I$ $b = 0.392465 - 1.111420I$	$8.16387 - 2.18472I$	0
$u = -1.51183 + 0.01086I$ $a = 0.401307 - 0.477569I$ $b = 1.085220 + 0.734711I$	$0.06365 - 10.42840I$	0
$u = -1.51183 - 0.01086I$ $a = 0.401307 + 0.477569I$ $b = 1.085220 - 0.734711I$	$0.06365 + 10.42840I$	0
$u = 0.13980 + 1.52059I$ $a = 1.52559 + 1.25765I$ $b = -0.728958 - 0.092773I$	$1.66607 - 0.20314I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.13980 - 1.52059I$ $a = 1.52559 - 1.25765I$ $b = -0.728958 + 0.092773I$	$1.66607 + 0.20314I$	0
$u = -0.030492 + 0.449001I$ $a = 1.60154 + 0.54119I$ $b = 1.080300 - 0.524113I$	$-1.21942 + 6.06914I$	$-0.76059 + 2.63784I$
$u = -0.030492 - 0.449001I$ $a = 1.60154 - 0.54119I$ $b = 1.080300 + 0.524113I$	$-1.21942 - 6.06914I$	$-0.76059 - 2.63784I$
$u = -0.50465 + 1.51967I$ $a = -0.517765 - 0.950862I$ $b = 0.493945 + 1.166180I$	$7.20481 + 10.90700I$	0
$u = -0.50465 - 1.51967I$ $a = -0.517765 + 0.950862I$ $b = 0.493945 - 1.166180I$	$7.20481 - 10.90700I$	0
$u = 0.378884$ $a = -3.47834$ $b = -1.11771$	-2.22317	-0.252670
$u = -0.64911 + 1.49897I$ $a = 0.19669 + 1.47748I$ $b = 1.24122 - 0.77052I$	$4.8344 + 17.8080I$	0
$u = -0.64911 - 1.49897I$ $a = 0.19669 - 1.47748I$ $b = 1.24122 + 0.77052I$	$4.8344 - 17.8080I$	0
$u = 0.71431 + 1.53469I$ $a = -0.359043 + 0.727090I$ $b = 0.856254 - 0.988984I$	$7.13913 - 0.48203I$	0
$u = 0.71431 - 1.53469I$ $a = -0.359043 - 0.727090I$ $b = 0.856254 + 0.988984I$	$7.13913 + 0.48203I$	0

Solutions to I_1^u		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.92191 + 1.43934I$		
$a =$	$0.308109 - 1.238810I$	$6.56818 - 7.36505I$	0
$b =$	$1.030790 + 0.892722I$		
$u =$	$0.92191 - 1.43934I$		
$a =$	$0.308109 + 1.238810I$	$6.56818 + 7.36505I$	0
$b =$	$1.030790 - 0.892722I$		
$u =$	$0.237720 + 0.158364I$		
$a =$	$0.93631 + 3.97152I$	$-2.23495 + 1.29247I$	$-6.68617 + 1.38636I$
$b =$	$-0.294689 - 0.539934I$		
$u =$	$0.237720 - 0.158364I$		
$a =$	$0.93631 - 3.97152I$	$-2.23495 - 1.29247I$	$-6.68617 - 1.38636I$
$b =$	$-0.294689 + 0.539934I$		
$u =$	$-0.62041 + 1.63980I$		
$a =$	$0.299269 + 1.165990I$	$6.07321 + 3.61773I$	0
$b =$	$0.920922 - 0.781821I$		
$u =$	$-0.62041 - 1.63980I$		
$a =$	$0.299269 - 1.165990I$	$6.07321 - 3.61773I$	0
$b =$	$0.920922 + 0.781821I$		
$u =$	$-0.43998 + 1.83287I$		
$a =$	$-0.332892 - 0.678022I$	$6.26435 - 2.30308I$	0
$b =$	$0.858291 + 0.792146I$		
$u =$	$-0.43998 - 1.83287I$		
$a =$	$-0.332892 + 0.678022I$	$6.26435 + 2.30308I$	0
$b =$	$0.858291 - 0.792146I$		

II.

$$\boldsymbol{I_2^u = \langle b+1,\ 6u^8+7u^7+\cdots+7a+8,\ u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1\rangle}$$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -\frac{6}{7}u^8 - u^7 + \cdots - \frac{5}{7}u - \frac{8}{7} \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -\frac{6}{7}u^8 - u^7 + \cdots - \frac{5}{7}u - \frac{15}{7} \\ -1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^2+1 \\ u^2 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -\frac{6}{7}u^8 - u^7 + \cdots - \frac{5}{7}u - \frac{8}{7} \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^6+u^4+2u^2+1 \\ u^8+2u^6+2u^4+2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^4-u^2-1 \\ -u^4 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^6+u^4+2u^2+1 \\ u^8+2u^6+2u^4+2u^2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes
$= -\frac{5}{49}u^8 - \frac{16}{7}u^7 - \frac{241}{49}u^6 - \frac{184}{49}u^5 - \frac{307}{49}u^4 - \frac{342}{49}u^3 - \frac{361}{49}u^2 + \frac{95}{49}u - \frac{618}{49}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2	$(u-1)^9$
c_3, c_8	u^9
c_4	$(u+1)^9$
c_5	$u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1$
c_6	$u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1$
c_7	$u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1$
c_9	$u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1$
c_{10}	$u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1$
c_{11}	$u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1$
c_{12}	$u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^9$
c_3, c_8	y^9
c_5, c_{10}	$y^9+3y^8+8y^7+13y^6+17y^5+17y^4+12y^3+6y^2+y-1$
c_6, c_{12}	$y^9+7y^8+20y^7+25y^6+5y^5-15y^4+22y^2+13y-1$
c_7	$y^9-y^8+12y^7-7y^6+37y^5+y^4-10y^2+5y-1$
c_9, c_{11}	$y^9-5y^8+12y^7-15y^6+9y^5+y^4-4y^3+2y^2+y-1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \quad 0.140343 + 0.966856I$ $a = -0.636856 + 0.580378I$ $b = -1.00000$	$0.13850 - 2.09337I$	$-5.47770 + 4.24226I$
$u = \quad 0.140343 - 0.966856I$ $a = -0.636856 - 0.580378I$ $b = -1.00000$	$0.13850 + 2.09337I$	$-5.47770 - 4.24226I$
$u = \quad 0.628449 + 0.875112I$ $a = -1.064930 + 0.497852I$ $b = -1.00000$	$-2.26187 - 2.45442I$	$-3.78210 + 4.39771I$
$u = \quad 0.628449 - 0.875112I$ $a = -1.064930 - 0.497852I$ $b = -1.00000$	$-2.26187 + 2.45442I$	$-3.78210 - 4.39771I$
$u = -0.796005 + 0.733148I$ $a = \quad 0.031938 - 0.639952I$ $b = -1.00000$	$-6.01628 - 1.33617I$	$-12.84367 + 3.27176I$
$u = -0.796005 - 0.733148I$ $a = \quad 0.031938 + 0.639952I$ $b = -1.00000$	$-6.01628 + 1.33617I$	$-12.84367 - 3.27176I$
$u = -0.728966 + 0.986295I$ $a = -0.256313 - 0.286999I$ $b = -1.00000$	$-5.24306 + 7.08493I$	$-15.6193 - 1.7431I$
$u = -0.728966 - 0.986295I$ $a = -0.256313 + 0.286999I$ $b = -1.00000$	$-5.24306 - 7.08493I$	$-15.6193 + 1.7431I$
$u = \quad 0.512358$ $a = -2.29054$ $b = -1.00000$	-2.84338	-15.1670

III.
$\boldsymbol{I_3^u = \langle 2u^{15} - 2u^{14} + \cdots + b - 2,\ 3u^{15} - u^{14} + \cdots + a + 5u,\ u^{16} + 8u^{14} + \cdots + 3u + 1 \rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -3u^{15} + u^{14} + \cdots - 8u^2 - 5u \\ -2u^{15} + 2u^{14} + \cdots - 3u + 2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -5u^{15} + 3u^{14} + \cdots - 8u + 2 \\ -2u^{15} + 2u^{14} + \cdots - 3u + 2 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^{15} - u^{14} + \cdots + 5u + 2 \\ u^{15} + u^{14} + \cdots + 12u + 4 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -2u^{15} + u^{14} + \cdots - 11u^2 - 13u \\ -4u^{15} + u^{14} + \cdots - 19u^2 - 15u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 7u^{15} - 5u^{14} + \cdots + 29u^2 + 22u \\ 3u^{15} - 2u^{14} + \cdots + 14u^2 + 11u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -3u^{15} + u^{14} + \cdots - 15u^2 - 14u \\ -4u^{15} + u^{14} + \cdots - 20u^2 - 15u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} u^{15} - 3u^{14} + \cdots - 6u - 11 \\ u^{15} - 3u^{14} + \cdots - 7u - 11 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -2u^{15} + 3u^{14} + \cdots - u + 8 \\ -2u^{15} + 3u^{14} + \cdots + 28u^2 + 8 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -35u^{15} + 12u^{14} - 275u^{13} - 18u^{12} - 898u^{11} - 348u^{10} - 1661u^9 - 964u^8 - 1955u^7 - 1160u^6 - 1383u^5 - 706u^4 - 579u^3 - 256u^2 - 146u - 39$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{16} - 10u^{15} + \cdots - 7u + 1$
c_2	$u^{16} + 6u^{15} + \cdots - u + 1$
c_3	$u^{16} - 3u^{14} + \cdots - u + 1$
c_4	$u^{16} - 6u^{15} + \cdots + u + 1$
c_5	$u^{16} + 8u^{14} + \cdots + 3u + 1$
c_6	$u^{16} - 3u^{15} + \cdots + 8u^2 + 1$
c_7	$u^{16} - 6u^{15} + \cdots - 3u + 1$
c_8	$u^{16} - 3u^{14} + \cdots + u + 1$
c_9	$u^{16} - 5u^{13} + \cdots - 5u + 1$
c_{10}	$u^{16} + 8u^{14} + \cdots - 3u + 1$
c_{11}	$u^{16} + 3u^{15} + \cdots + 6u + 1$
c_{12}	$u^{16} + 3u^{15} + \cdots + 8u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} - 2y^{15} + \cdots + 61y + 1$
c_2, c_4	$y^{16} - 10y^{15} + \cdots - 7y + 1$
c_3, c_8	$y^{16} - 6y^{15} + \cdots + 9y + 1$
c_5, c_{10}	$y^{16} + 16y^{15} + \cdots + 11y + 1$
c_6, c_{12}	$y^{16} + 11y^{15} + \cdots + 16y + 1$
c_7	$y^{16} - 14y^{15} + \cdots - 5y + 1$
c_9	$y^{16} + 10y^{14} + \cdots + 9y + 1$
c_{11}	$y^{16} - 5y^{15} + \cdots - 14y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.192282+1.004160I$ $a=-0.846374-0.009443I$ $b=1.62263+0.06526I$	$-8.83850+0.76161I$	$-4.2680-18.7238I$
$u=-0.192282-1.004160I$ $a=-0.846374+0.009443I$ $b=1.62263-0.06526I$	$-8.83850-0.76161I$	$-4.2680+18.7238I$
$u=-0.405160+0.782797I$ $a=2.19859+0.67570I$ $b=-0.322228-0.282076I$	$-1.72004+2.39298I$	$-3.94028-2.30129I$
$u=-0.405160-0.782797I$ $a=2.19859-0.67570I$ $b=-0.322228+0.282076I$	$-1.72004-2.39298I$	$-3.94028+2.30129I$
$u=0.380479+0.681918I$ $a=-2.94802-4.63492I$ $b=-0.971409-0.076314I$	$-2.96721-2.98693I$	$-21.6572-12.8409I$
$u=0.380479-0.681918I$ $a=-2.94802+4.63492I$ $b=-0.971409+0.076314I$	$-2.96721+2.98693I$	$-21.6572+12.8409I$
$u=-0.445295+0.521652I$ $a=1.099140+0.513773I$ $b=0.590770+0.565876I$	$0.00207+2.08322I$	$-6.76763-3.46484I$
$u=-0.445295-0.521652I$ $a=1.099140-0.513773I$ $b=0.590770-0.565876I$	$0.00207-2.08322I$	$-6.76763+3.46484I$
$u=-0.279505+0.496867I$ $a=1.118600-0.344839I$ $b=1.028060-0.512541I$	$-1.36164+6.43556I$	$-8.1558-16.1878I$
$u=-0.279505-0.496867I$ $a=1.118600+0.344839I$ $b=1.028060+0.512541I$	$-1.36164-6.43556I$	$-8.1558+16.1878I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.08961+1.47734I$ $a=\ \ 1.06198-1.18104I$ $b=-0.817120+0.344873I$	$1.50817+0.70603I$	$-8.36846-5.87842I$
$u=-0.08961-1.47734I$ $a=\ \ 1.06198+1.18104I$ $b=-0.817120-0.344873I$	$1.50817-0.70603I$	$-8.36846+5.87842I$
$u=\ \ 0.60082+1.36455I$ $a=\ \ 0.137422-1.400270I$ $b=\ \ 1.097750+0.880157I$	$6.18219-6.62853I$	$-4.79477+3.23115I$
$u=\ \ 0.60082-1.36455I$ $a=\ \ 0.137422+1.400270I$ $b=\ \ 1.097750-0.880157I$	$6.18219+6.62853I$	$-4.79477-3.23115I$
$u=\ \ 0.43055+1.58967I$ $a=-0.321336+0.878995I$ $b=\ \ 0.771549-0.994058I$	$7.19496+0.24679I$	$-1.04785-3.22477I$
$u=\ \ 0.43055-1.58967I$ $a=-0.321336-0.878995I$ $b=\ \ 0.771549+0.994058I$	$7.19496-0.24679I$	$-1.04785+3.22477I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{16}-10u^{15}+\cdots-7u+1)$ $\cdot(u^{88}+36u^{87}+\cdots+9016u+2401)$
c_2	$((u-1)^9)(u^{16}+6u^{15}+\cdots-u+1)(u^{88}-16u^{87}+\cdots+504u-49)$
c_3	$u^9(u^{16}-3u^{14}+\cdots-u+1)(u^{88}+u^{87}+\cdots+14336u+25088)$
c_4	$((u+1)^9)(u^{16}-6u^{15}+\cdots+u+1)(u^{88}-16u^{87}+\cdots+504u-49)$
c_5	$(u^9+u^8+\cdots+u-1)(u^{16}+8u^{14}+\cdots+3u+1)$ $\cdot(u^{88}+2u^{87}+\cdots+4968u-1771)$
c_6	$(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{16}-3u^{15}+\cdots+8u^2+1)(u^{88}+3u^{87}+\cdots-1497u-181)$
c_7	$(u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1)$ $\cdot(u^{16}-6u^{15}+\cdots-3u+1)(u^{88}-4u^{87}+\cdots+2u-1)$
c_8	$u^9(u^{16}-3u^{14}+\cdots+u+1)(u^{88}+u^{87}+\cdots+14336u+25088)$
c_9	$(u^9+u^8+\cdots-u-1)(u^{16}-5u^{13}+\cdots-5u+1)$ $\cdot(u^{88}-14u^{87}+\cdots-5848u+1043)$
c_{10}	$(u^9-u^8+\cdots+u+1)(u^{16}+8u^{14}+\cdots-3u+1)$ $\cdot(u^{88}+2u^{87}+\cdots+4968u-1771)$
c_{11}	$(u^9-u^8+\cdots-u+1)(u^{16}+3u^{15}+\cdots+6u+1)$ $\cdot(u^{88}-u^{87}+\cdots+8558243u-2435537)$
c_{12}	$(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{16}+3u^{15}+\cdots+8u^2+1)(u^{88}+3u^{87}+\cdots-1497u-181)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{16} - 2y^{15} + \cdots + 61y + 1)$ $\cdot (y^{88} + 48y^{87} + \cdots - 1539089020y + 5764801)$
c_2, c_4	$((y-1)^9)(y^{16} - 10y^{15} + \cdots - 7y + 1)$ $\cdot (y^{88} - 36y^{87} + \cdots - 9016y + 2401)$
c_3, c_8	$y^9(y^{16} - 6y^{15} + \cdots + 9y + 1)$ $\cdot (y^{88} - 63y^{87} + \cdots - 10096214016y + 629407744)$
c_5, c_{10}	$(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)$ $\cdot (y^{16} + 16y^{15} + \cdots + 11y + 1)$ $\cdot (y^{88} + 70y^{87} + \cdots + 39623986y + 3136441)$
c_6, c_{12}	$(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)$ $\cdot (y^{16} + 11y^{15} + \cdots + 16y + 1)(y^{88} + 49y^{87} + \cdots - 883509y + 32761)$
c_7	$(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)$ $\cdot (y^{16} - 14y^{15} + \cdots - 5y + 1)(y^{88} - 16y^{87} + \cdots + 6y + 1)$
c_9	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)$ $\cdot (y^{16} + 10y^{14} + \cdots + 9y + 1)$ $\cdot (y^{88} + 2y^{87} + \cdots + 12594048y + 1087849)$
c_{11}	$(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)$ $\cdot (y^{16} - 5y^{15} + \cdots - 14y + 1)$ $\cdot (y^{88} + 33y^{87} + \cdots + 85934090519941y + 5931840478369)$