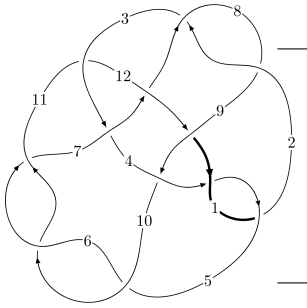
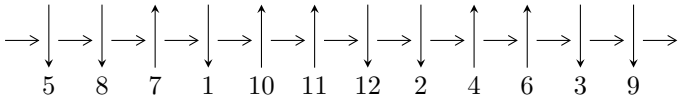
$12a_{1272}$ $(K12a_{1272})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -5.27398 \times 10^{429} u^{131} - 9.58434 \times 10^{429} u^{130} + \cdots + 9.61277 \times 10^{428} b - 5.45766 \times 10^{432},$$
$$1.80780 \times 10^{432} u^{131} + 3.29725 \times 10^{432} u^{130} + \cdots + 2.02829 \times 10^{431} a + 1.86013 \times 10^{435},$$
$$u^{132} + u^{131} + \cdots - 1451u - 844 \rangle$$
$$I_2^u = \langle 2318651091 u^{29} + 8025321455 u^{28} + \cdots + 9372903 b + 4797253946,$$
$$- 1257579720 u^{29} - 4274580356 u^{28} + \cdots + 9372903 a - 2710745983,\ u^{30} + 4u^{29} + \cdots + 7u + 1 \rangle$$
$$I_3^u = \langle b + a - 1,\ a^2 - 3a + 3,\ u - 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 164 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. $\boldsymbol{I_1^u = \langle -5.27 \times 10^{429} u^{131} - 9.58 \times 10^{429} u^{130} + \cdots + 9.61 \times 10^{428} b - 5.46 \times 10^{432},\ 1.81 \times 10^{432} u^{131} + 3.30 \times 10^{432} u^{130} + \cdots + 2.03 \times 10^{431} a + 1.86 \times 10^{435},\ u^{132} + u^{131} + \cdots - 1451u - 844 \rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} -8.91293u^{131} - 16.2563u^{130} + \cdots - 26935.2u - 9170.89 \\ 5.48643u^{131} + 9.97042u^{130} + \cdots + 16692.0u + 5677.51 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.34622u^{131} - 6.13050u^{130} + \cdots - 9951.53u - 3393.85 \\ 7.33783u^{131} + 13.3479u^{130} + \cdots + 22362.1u + 7606.69 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4.96312u^{131} - 9.02635u^{130} + \cdots - 15167.5u - 5149.06 \\ 12.2350u^{131} + 22.1179u^{130} + \cdots + 37446.3u + 12681.3 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3.42650u^{131} - 6.28584u^{130} + \cdots - 10243.3u - 3493.38 \\ 5.48643u^{131} + 9.97042u^{130} + \cdots + 16692.0u + 5677.51 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 11.5848u^{131} + 21.0113u^{130} + \cdots + 35412.9u + 12022.8 \\ -19.5383u^{131} - 35.3500u^{130} + \cdots - 60023.3u - 20340.8 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.967020u^{131} + 1.73517u^{130} + \cdots + 3148.59u + 1041.78 \\ -0.912310u^{131} - 1.60702u^{130} + \cdots - 2865.28u - 960.299 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -4.07589u^{131} - 7.57566u^{130} + \cdots - 11810.1u - 4058.04 \\ 6.06028u^{131} + 10.9765u^{130} + \cdots + 18294.1u + 6226.53 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 5.61423u^{131} + 10.2551u^{130} + \cdots + 16930.8u + 5749.34 \\ -11.4857u^{131} - 20.7801u^{130} + \cdots - 35554.7u - 12041.1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 769.616u^{131} + 1391.64u^{130} + \cdots + 2.37325 \times 10^6 u + 803188.$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{132} - u^{131} + \cdots + 1451u - 844$
c_2, c_8	$u^{132} + 44u^{130} + \cdots - 21827u - 1189$
c_3	$u^{132} - 4u^{131} + \cdots + 9472u - 2239$
c_5, c_6, c_{10}	$u^{132} + 2u^{131} + \cdots + 130u + 19$
c_7	$u^{132} + u^{130} + \cdots - 28u + 8$
c_9	$u^{132} - 4u^{130} + \cdots - 37881u + 2437$
c_{11}	$u^{132} + 6u^{131} + \cdots + 89459u + 56393$
c_{12}	$u^{132} - 5u^{131} + \cdots + 4452u + 103$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{132} - 63y^{131} + \cdots - 11311753y + 712336$
c_2, c_8	$y^{132} + 88y^{131} + \cdots - 71456419y + 1413721$
c_3	$y^{132} - 36y^{131} + \cdots - 304367236y + 5013121$
c_5, c_6, c_{10}	$y^{132} - 144y^{131} + \cdots - 14848y + 361$
c_7	$y^{132} + 2y^{131} + \cdots - 4464y + 64$
c_9	$y^{132} - 8y^{131} + \cdots - 75967363y + 5938969$
c_{11}	$y^{132} + 62y^{131} + \cdots + 237776842153y + 3180170449$
c_{12}	$y^{132} - 27y^{131} + \cdots - 6883504y + 10609$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.888433 + 0.459649I$ $a = -0.192013 + 1.130340I$ $b = 0.135369 + 1.366530I$	$10.08520 - 8.84662I$	0
$u = 0.888433 - 0.459649I$ $a = -0.192013 - 1.130340I$ $b = 0.135369 - 1.366530I$	$10.08520 + 8.84662I$	0
$u = -0.860001 + 0.505931I$ $a = -0.524831 - 0.211304I$ $b = 0.00912 - 1.53664I$	$10.41720 + 2.03214I$	0
$u = -0.860001 - 0.505931I$ $a = -0.524831 + 0.211304I$ $b = 0.00912 + 1.53664I$	$10.41720 - 2.03214I$	0
$u = -0.128893 + 0.987034I$ $a = -0.107867 + 0.455133I$ $b = -1.064690 - 0.044525I$	$6.25496 - 6.63131I$	0
$u = -0.128893 - 0.987034I$ $a = -0.107867 - 0.455133I$ $b = -1.064690 + 0.044525I$	$6.25496 + 6.63131I$	0
$u = -0.817665 + 0.595071I$ $a = -1.375280 - 0.085348I$ $b = -0.01154 - 1.61726I$	$10.91990 + 2.34128I$	0
$u = -0.817665 - 0.595071I$ $a = -1.375280 + 0.085348I$ $b = -0.01154 + 1.61726I$	$10.91990 - 2.34128I$	0
$u = -0.887029 + 0.426126I$ $a = -0.238037 - 0.107971I$ $b = 0.44793 + 1.51254I$	$9.85464 - 4.57208I$	0
$u = -0.887029 - 0.426126I$ $a = -0.238037 + 0.107971I$ $b = 0.44793 - 1.51254I$	$9.85464 + 4.57208I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.299028+0.934814I$ $a=-0.339354+0.092362I$ $b=\ \ 0.388248+1.036060I$	$6.49844-4.55251I$	0
$u=-0.299028-0.934814I$ $a=-0.339354-0.092362I$ $b=\ \ 0.388248-1.036060I$	$6.49844+4.55251I$	0
$u=\ \ 0.259667+1.010660I$ $a=-0.136638-0.521034I$ $b=\ \ 0.403078-1.345030I$	$3.78458+8.55429I$	0
$u=\ \ 0.259667-1.010660I$ $a=-0.136638+0.521034I$ $b=\ \ 0.403078+1.345030I$	$3.78458-8.55429I$	0
$u=\ \ 0.881749+0.328399I$ $a=\ \ 2.48900+0.26366I$ $b=-0.17445-1.63310I$	$9.18224-1.20024I$	0
$u=\ \ 0.881749-0.328399I$ $a=\ \ 2.48900-0.26366I$ $b=-0.17445+1.63310I$	$9.18224+1.20024I$	0
$u=-0.971761+0.434578I$ $a=\ \ 1.40070+0.56574I$ $b=-0.282247+0.929840I$	$1.49064+1.85110I$	0
$u=-0.971761-0.434578I$ $a=\ \ 1.40070-0.56574I$ $b=-0.282247-0.929840I$	$1.49064-1.85110I$	0
$u=-0.917872+0.166230I$ $a=\ \ 1.326400+0.401788I$ $b=-0.149482+0.636067I$	$1.40547+1.62272I$	0
$u=-0.917872-0.166230I$ $a=\ \ 1.326400-0.401788I$ $b=-0.149482-0.636067I$	$1.40547-1.62272I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.902863 + 0.202398I$ $a = 1.93367 - 1.39062I$ $b = -0.181766 + 0.639474I$	$-0.956671 - 0.870714I$	0
$u = 0.902863 - 0.202398I$ $a = 1.93367 + 1.39062I$ $b = -0.181766 - 0.639474I$	$-0.956671 + 0.870714I$	0
$u = 0.924821$ $a = -3.20484$ $b = 2.41225$	-0.379463	0
$u = 0.919150 + 0.062875I$ $a = -1.22487 - 1.47381I$ $b = 0.43120 + 1.81191I$	$-0.312377 - 0.392334I$	0
$u = 0.919150 - 0.062875I$ $a = -1.22487 + 1.47381I$ $b = 0.43120 - 1.81191I$	$-0.312377 + 0.392334I$	0
$u = 0.854419 + 0.330939I$ $a = 1.40388 - 0.54442I$ $b = 0.05937 - 1.64090I$	$9.26391 - 1.67107I$	0
$u = 0.854419 - 0.330939I$ $a = 1.40388 + 0.54442I$ $b = 0.05937 + 1.64090I$	$9.26391 + 1.67107I$	0
$u = -0.747724 + 0.524870I$ $a = -2.12221 - 0.04445I$ $b = -0.080811 - 1.350620I$	$10.74310 + 2.15226I$	0
$u = -0.747724 - 0.524870I$ $a = -2.12221 + 0.04445I$ $b = -0.080811 + 1.350620I$	$10.74310 - 2.15226I$	0
$u = -0.989013 + 0.458677I$ $a = 2.20619 + 0.31109I$ $b = -0.232381 + 1.160650I$	$1.20534 + 2.58602I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.989013-0.458677I$ $a=\ \ 2.20619-0.31109I$ $b=-0.232381-1.160650I$	$1.20534-2.58602I$	0
$u=\ \ 1.017390+0.399155I$ $a=\ \ 2.00809+0.70527I$ $b=-0.011529-1.090260I$	$2.53408+1.30747I$	0
$u=\ \ 1.017390-0.399155I$ $a=\ \ 2.00809-0.70527I$ $b=-0.011529+1.090260I$	$2.53408-1.30747I$	0
$u=\ \ 1.025520+0.398648I$ $a=-1.23586+0.83864I$ $b=\ \ 0.657096-0.430489I$	$-3.47015-2.63906I$	0
$u=\ \ 1.025520-0.398648I$ $a=-1.23586-0.83864I$ $b=\ \ 0.657096+0.430489I$	$-3.47015+2.63906I$	0
$u=\ \ 0.777156+0.445739I$ $a=-2.98626-0.24164I$ $b=-0.139684+1.116770I$	$10.45930+5.07607I$	0
$u=\ \ 0.777156-0.445739I$ $a=-2.98626+0.24164I$ $b=-0.139684-1.116770I$	$10.45930-5.07607I$	0
$u=\ \ 1.086330+0.215183I$ $a=\ \ 1.114480-0.586549I$ $b=-1.144630+0.562319I$	$-1.66184-0.75099I$	0
$u=\ \ 1.086330-0.215183I$ $a=\ \ 1.114480+0.586549I$ $b=-1.144630-0.562319I$	$-1.66184+0.75099I$	0
$u=-0.798505+0.397196I$ $a=\ \ 2.86222-0.71894I$ $b=-0.63968+1.32038I$	$10.17010+8.06121I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.798505-0.397196I$ $a=\ \ 2.86222+0.71894I$ $b=-0.63968-1.32038I$	$10.17010-8.06121I$	0
$u=-1.065870+0.319329I$ $a=-0.671097+0.337438I$ $b=\ \ 0.065196+0.246846I$	$-1.06962+3.70198I$	0
$u=-1.065870-0.319329I$ $a=-0.671097-0.337438I$ $b=\ \ 0.065196-0.246846I$	$-1.06962-3.70198I$	0
$u=-1.045210+0.408453I$ $a=-1.81053+0.50219I$ $b=\ \ 0.63280-1.27162I$	$2.58381+7.13715I$	0
$u=-1.045210-0.408453I$ $a=-1.81053-0.50219I$ $b=\ \ 0.63280+1.27162I$	$2.58381-7.13715I$	0
$u=-0.159394+0.861713I$ $a=-0.568599-0.640734I$ $b=-0.457630+0.026165I$	$7.95380-2.88865I$	0
$u=-0.159394-0.861713I$ $a=-0.568599+0.640734I$ $b=-0.457630-0.026165I$	$7.95380+2.88865I$	0
$u=\ \ 0.218566+1.107950I$ $a=\ \ 0.175980+0.419203I$ $b=\ \ 0.113053+1.137110I$	$4.87895-0.96047I$	0
$u=\ \ 0.218566-1.107950I$ $a=\ \ 0.175980-0.419203I$ $b=\ \ 0.113053-1.137110I$	$4.87895+0.96047I$	0
$u=\ \ 1.089370+0.342018I$ $a=-0.336039+0.778881I$ $b=\ \ 0.288735-0.667558I$	$-2.55378-0.72472I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.089370 - 0.342018I$ $a = -0.336039 - 0.778881I$ $b = 0.288735 + 0.667558I$	$-2.55378 + 0.72472I$	0
$u = 0.954127 + 0.635674I$ $a = 0.038859 - 0.760829I$ $b = -0.138686 + 0.697586I$	$2.05134 - 2.56323I$	0
$u = 0.954127 - 0.635674I$ $a = 0.038859 + 0.760829I$ $b = -0.138686 - 0.697586I$	$2.05134 + 2.56323I$	0
$u = -1.114630 + 0.308899I$ $a = -1.60111 - 0.32041I$ $b = 0.781702 - 0.119471I$	$-4.68421 + 3.54811I$	0
$u = -1.114630 - 0.308899I$ $a = -1.60111 + 0.32041I$ $b = 0.781702 + 0.119471I$	$-4.68421 - 3.54811I$	0
$u = -0.962547 + 0.685515I$ $a = -1.13022 - 0.93033I$ $b = 0.155733 - 0.969552I$	$-2.01475 + 2.72647I$	0
$u = -0.962547 - 0.685515I$ $a = -1.13022 + 0.93033I$ $b = 0.155733 + 0.969552I$	$-2.01475 - 2.72647I$	0
$u = 1.072570 + 0.500941I$ $a = 1.029600 - 0.741523I$ $b = -0.903930 + 0.587094I$	$2.25264 - 4.65575I$	0
$u = 1.072570 - 0.500941I$ $a = 1.029600 + 0.741523I$ $b = -0.903930 - 0.587094I$	$2.25264 + 4.65575I$	0
$u = 0.813276$ $a = 5.52679$ $b = -3.46759$	7.70114	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.356229+1.148630I$ $a=\ 0.168781+0.343370I$ $b=\ 0.433166+1.136880I$	$4.67103-1.62587I$	0
$u=-0.356229-1.148630I$ $a=\ 0.168781-0.343370I$ $b=\ 0.433166-1.136880I$	$4.67103+1.62587I$	0
$u=\ 0.022902+0.792156I$ $a=-0.047072-0.341718I$ $b=\ 0.798408+0.086019I$	$-0.69629-4.11755I$	0
$u=\ 0.022902-0.792156I$ $a=-0.047072+0.341718I$ $b=\ 0.798408-0.086019I$	$-0.69629+4.11755I$	0
$u=\ 0.437509+1.134300I$ $a=\ 0.033613+0.440353I$ $b=-0.51268+1.38631I$	$10.7695+12.2620I$	0
$u=\ 0.437509-1.134300I$ $a=\ 0.033613-0.440353I$ $b=-0.51268-1.38631I$	$10.7695-12.2620I$	0
$u=\ 0.783115$ $a=\ 0.911346$ $b=-0.608263$	-1.26571	0
$u=-0.598940+0.479604I$ $a=\ 0.448566+1.299910I$ $b=\ 0.052445+1.214290I$	$2.37714+1.31479I$	0
$u=-0.598940-0.479604I$ $a=\ 0.448566-1.299910I$ $b=\ 0.052445-1.214290I$	$2.37714-1.31479I$	0
$u=-1.120900+0.520454I$ $a=-1.92871+0.05999I$ $b=\ 0.404571-1.109500I$	$-1.30487+6.80594I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.120900-0.520454I$ $a=-1.92871-0.05999I$ $b=\ \ 0.404571+1.109500I$	$-1.30487-6.80594I$	0
$u=\ \ 1.164660+0.451459I$ $a=-1.95379-0.33001I$ $b=\ \ 0.35644+1.40839I$	$0.23382-7.72074I$	0
$u=\ \ 1.164660-0.451459I$ $a=-1.95379+0.33001I$ $b=\ \ 0.35644-1.40839I$	$0.23382+7.72074I$	0
$u=-0.736825$ $a=\ \ 3.08179$ $b=-0.0914915$	3.02836	0
$u=\ \ 1.203490+0.441169I$ $a=-0.969440+0.454908I$ $b=\ \ 1.325330-0.289045I$	$4.00324-1.47776I$	0
$u=\ \ 1.203490-0.441169I$ $a=-0.969440-0.454908I$ $b=\ \ 1.325330+0.289045I$	$4.00324+1.47776I$	0
$u=-0.261769+0.668003I$ $a=\ \ 0.590878-0.537091I$ $b=-0.209541-1.078610I$	$1.14713-2.21877I$	0
$u=-0.261769-0.668003I$ $a=\ \ 0.590878+0.537091I$ $b=-0.209541+1.078610I$	$1.14713+2.21877I$	0
$u=-1.205320+0.443525I$ $a=\ \ 1.37582+0.46499I$ $b=-1.145380+0.183326I$	$-4.29889+8.50488I$	0
$u=-1.205320-0.443525I$ $a=\ \ 1.37582-0.46499I$ $b=-1.145380-0.183326I$	$-4.29889-8.50488I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.171030+0.567634I$ $a=\ \ 0.574993-0.152351I$ $b=-0.110535-0.133405I$	$5.04933+8.10612I$	0
$u=-1.171030-0.567634I$ $a=\ \ 0.574993+0.152351I$ $b=-0.110535+0.133405I$	$5.04933-8.10612I$	0
$u=-0.982808+0.857356I$ $a=\ \ 0.894536+0.951800I$ $b=-0.061059+1.106970I$	$3.38915+3.27485I$	0
$u=-0.982808-0.857356I$ $a=\ \ 0.894536-0.951800I$ $b=-0.061059-1.106970I$	$3.38915-3.27485I$	0
$u=\ \ 1.228330+0.450570I$ $a=\ \ 1.077480-0.460181I$ $b=-0.888292-0.412295I$	$-4.23965-0.44921I$	0
$u=\ \ 1.228330-0.450570I$ $a=\ \ 1.077480+0.460181I$ $b=-0.888292+0.412295I$	$-4.23965+0.44921I$	0
$u=-1.230990+0.456388I$ $a=\ \ 0.181491-0.569155I$ $b=\ \ 0.262429+1.124450I$	$0.303412+0.871916I$	0
$u=-1.230990-0.456388I$ $a=\ \ 0.181491+0.569155I$ $b=\ \ 0.262429-1.124450I$	$0.303412-0.871916I$	0
$u=-0.088702+0.669160I$ $a=\ \ 0.589046+0.615861I$ $b=-0.232592+1.350320I$	$3.53727+3.67602I$	0
$u=-0.088702-0.669160I$ $a=\ \ 0.589046-0.615861I$ $b=-0.232592-1.350320I$	$3.53727-3.67602I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.320950 + 0.133082I$ $a = 0.478618 - 0.725833I$ $b = -0.277492 + 0.675710I$	$0.737823 + 0.896249I$	0
$u = 1.320950 - 0.133082I$ $a = 0.478618 + 0.725833I$ $b = -0.277492 - 0.675710I$	$0.737823 - 0.896249I$	0
$u = -1.185620 + 0.603238I$ $a = 1.68091 - 0.06456I$ $b = -0.567314 + 1.056540I$	$3.80200 + 10.11980I$	0
$u = -1.185620 - 0.603238I$ $a = 1.68091 + 0.06456I$ $b = -0.567314 - 1.056540I$	$3.80200 - 10.11980I$	0
$u = -1.328520 + 0.130575I$ $a = 0.398662 + 0.634277I$ $b = -0.472934 - 1.050020I$	$-2.16348 - 4.52737I$	0
$u = -1.328520 - 0.130575I$ $a = 0.398662 - 0.634277I$ $b = -0.472934 + 1.050020I$	$-2.16348 + 4.52737I$	0
$u = 1.081850 + 0.785669I$ $a = -0.640885 + 0.556637I$ $b = 0.254533 + 0.510690I$	$-2.02817 - 3.19514I$	0
$u = 1.081850 - 0.785669I$ $a = -0.640885 - 0.556637I$ $b = 0.254533 - 0.510690I$	$-2.02817 + 3.19514I$	0
$u = 1.231000 + 0.562678I$ $a = -1.340210 - 0.312386I$ $b = 0.111927 + 1.159600I$	$1.61202 - 4.74931I$	0
$u = 1.231000 - 0.562678I$ $a = -1.340210 + 0.312386I$ $b = 0.111927 - 1.159600I$	$1.61202 + 4.74931I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.237580+0.550508I$ $a=-1.254670-0.578778I$ $b=\ \ 1.40334-0.22807I$	$2.86994+12.04640I$	0
$u=-1.237580-0.550508I$ $a=-1.254670+0.578778I$ $b=\ \ 1.40334+0.22807I$	$2.86994-12.04640I$	0
$u=\ \ 0.598628+0.240960I$ $a=-0.41746-1.52277I$ $b=-0.128247-1.357570I$	$4.03807-4.46460I$	0
$u=\ \ 0.598628-0.240960I$ $a=-0.41746+1.52277I$ $b=-0.128247+1.357570I$	$4.03807+4.46460I$	0
$u=\ \ 0.364776+0.524785I$ $a=-1.53447+0.83795I$ $b=\ \ 0.754945+0.279104I$	$4.27359+0.41818I$	0
$u=\ \ 0.364776-0.524785I$ $a=-1.53447-0.83795I$ $b=\ \ 0.754945-0.279104I$	$4.27359-0.41818I$	0
$u=\ \ 1.225200+0.596736I$ $a=\ \ 1.70251+0.01514I$ $b=-0.50100-1.43795I$	$0.7781-14.2874I$	0
$u=\ \ 1.225200-0.596736I$ $a=\ \ 1.70251-0.01514I$ $b=-0.50100+1.43795I$	$0.7781+14.2874I$	0
$u=-0.209142+1.347150I$ $a=-0.218609-0.341615I$ $b=-0.294285-0.745193I$	$8.42783-2.79167I$	0
$u=-0.209142-1.347150I$ $a=-0.218609+0.341615I$ $b=-0.294285+0.745193I$	$8.42783+2.79167I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.219590+0.614211I$ $a=\ \ 1.46312+0.04774I$ $b=-0.61836+1.36761I$	$1.77093+7.69029I$	0
$u=-1.219590-0.614211I$ $a=\ \ 1.46312-0.04774I$ $b=-0.61836-1.36761I$	$1.77093-7.69029I$	0
$u=\ \ 0.607449+1.225470I$ $a=-0.008727-0.481828I$ $b=\ \ 0.061565-1.176820I$	$10.82320+2.58085I$	0
$u=\ \ 0.607449-1.225470I$ $a=-0.008727+0.481828I$ $b=\ \ 0.061565+1.176820I$	$10.82320-2.58085I$	0
$u=-0.559620+1.277610I$ $a=-0.167666-0.342309I$ $b=-0.603837-1.262080I$	$10.67920-1.72002I$	0
$u=-0.559620-1.277610I$ $a=-0.167666+0.342309I$ $b=-0.603837+1.262080I$	$10.67920+1.72002I$	0
$u=-0.492501+0.320631I$ $a=\ \ 0.129165+0.362271I$ $b=-0.32006-1.40564I$	$4.32601-3.70375I$	0
$u=-0.492501-0.320631I$ $a=\ \ 0.129165-0.362271I$ $b=-0.32006+1.40564I$	$4.32601+3.70375I$	0
$u=\ \ 1.23135+0.70339I$ $a=-1.61586+0.17680I$ $b=\ \ 0.57319+1.49506I$	$8.2076-18.7958I$	0
$u=\ \ 1.23135-0.70339I$ $a=-1.61586-0.17680I$ $b=\ \ 0.57319-1.49506I$	$8.2076+18.7958I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.42213+0.13324I$ $a=-0.831170+0.429200I$ $b=\ \ 0.685492-1.091570I$	$2.81720+8.47909I$	0
$u=-1.42213-0.13324I$ $a=-0.831170-0.429200I$ $b=\ \ 0.685492+1.091570I$	$2.81720-8.47909I$	0
$u=\ \ 1.41683+0.26438I$ $a=-1.109950+0.168625I$ $b=\ \ 1.212520+0.615511I$	$0.99534+1.82942I$	0
$u=\ \ 1.41683-0.26438I$ $a=-1.109950-0.168625I$ $b=\ \ 1.212520-0.615511I$	$0.99534-1.82942I$	0
$u=\ \ 1.22825+0.75949I$ $a=\ \ 1.235980-0.105262I$ $b=-0.174476-1.243520I$	$8.61807-9.62658I$	0
$u=\ \ 1.22825-0.75949I$ $a=\ \ 1.235980+0.105262I$ $b=-0.174476+1.243520I$	$8.61807+9.62658I$	0
$u=-1.26281+0.76234I$ $a=-1.335770-0.250024I$ $b=\ \ 0.62952-1.50563I$	$8.22324+8.90731I$	0
$u=-1.26281-0.76234I$ $a=-1.335770+0.250024I$ $b=\ \ 0.62952+1.50563I$	$8.22324-8.90731I$	0
$u=\ \ 0.147938+0.455430I$ $a=\ \ 0.803767-0.078291I$ $b=-0.587379-0.193361I$	$-1.35324-0.77267I$	$-5.30506+0.81512I$
$u=\ \ 0.147938-0.455430I$ $a=\ \ 0.803767+0.078291I$ $b=-0.587379+0.193361I$	$-1.35324+0.77267I$	$-5.30506-0.81512I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.151254+0.297937I$		
$a=\ 1.78806+0.81849I$	$1.15096-0.92104I$	$4.55484+2.14940I$
$b=\ 0.307687-0.326506I$		
$u=-0.151254-0.297937I$		
$a=\ 1.78806-0.81849I$	$1.15096+0.92104I$	$4.55484-2.14940I$
$b=\ 0.307687+0.326506I$		

II.

$\boldsymbol{I_2^u = \langle 2.32\times 10^9 u^{29} + 8.03\times 10^9 u^{28} + \cdots + 9.37\times 10^6 b + 4.80\times 10^9,\ -1.26\times 10^9 u^{29} - 4.27\times 10^9 u^{28} + \cdots + 9.37\times 10^6 a - 2.71\times 10^9,\ u^{30} + 4u^{29} + \cdots + 7u + 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 134.172u^{29} + 456.057u^{28} + \cdots + 1557.17u + 289.211 \\ -247.378u^{29} - 856.226u^{28} + \cdots - 2556.65u - 511.822 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 45.0125u^{29} + 152.845u^{28} + \cdots + 560.461u + 96.1842 \\ -315.172u^{29} - 1089.94u^{28} + \cdots - 3268.54u - 651.423 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 141.162u^{29} + 473.575u^{28} + \cdots + 1137.50u + 179.919 \\ -267.159u^{29} - 964.190u^{28} + \cdots - 2740.63u - 585.096 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -113.206u^{29} - 400.169u^{28} + \cdots - 999.486u - 222.611 \\ -247.378u^{29} - 856.226u^{28} + \cdots - 2556.65u - 511.822 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 455.829u^{29} + 1623.13u^{28} + \cdots + 5161.07u + 1090.23 \\ -74.5440u^{29} - 255.803u^{28} + \cdots - 1160.53u - 242.557 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -366.303u^{29} - 1332.00u^{28} + \cdots - 4413.63u - 979.914 \\ -u^{29} - 3u^{28} + \cdots - 7u^2 - 7u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 427.626u^{29} + 1511.62u^{28} + \cdots + 4483.79u + 933.241 \\ 174.722u^{29} + 617.886u^{28} + \cdots + 1617.71u + 318.379 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 72.2048u^{29} + 292.216u^{28} + \cdots + 913.748u + 248.119 \\ 120.311u^{29} + 434.477u^{28} + \cdots + 1633.83u + 355.868 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{2124368078}{9372903}u^{29} - \frac{1389203474}{9372903}u^{28} + \cdots - \frac{42689783696}{3124301}u - \frac{22166136335}{9372903}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{30}+4u^{29}+\cdots+7u+1$
c_2	$u^{30}-2u^{29}+\cdots-4u-1$
c_3	$u^{30}-4u^{29}+\cdots-5u+1$
c_4	$u^{30}-4u^{29}+\cdots-7u+1$
c_5, c_6	$u^{30}-u^{29}+\cdots-16u^2-1$
c_7	$u^{30}-u^{29}+\cdots-12u-3$
c_8	$u^{30}+2u^{29}+\cdots+4u-1$
c_9	$u^{30}+2u^{29}+\cdots+20u+1$
c_{10}	$u^{30}+u^{29}+\cdots-16u^2-1$
c_{11}	$u^{30}+12u^{28}+\cdots+8u-1$
c_{12}	$u^{30}-6u^{29}+\cdots-2u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{30} - 10y^{29} + \cdots - 23y + 1$
c_2, c_8	$y^{30} + 14y^{29} + \cdots - 10y + 1$
c_3	$y^{30} - 18y^{29} + \cdots + y + 1$
c_5, c_6, c_{10}	$y^{30} - 39y^{29} + \cdots + 32y + 1$
c_7	$y^{30} - 7y^{29} + \cdots - 1020y + 9$
c_9	$y^{30} - 14y^{29} + \cdots - 214y + 1$
c_{11}	$y^{30} + 24y^{29} + \cdots - 14y + 1$
c_{12}	$y^{30} - 14y^{29} + \cdots - 40y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.914247+0.478404I$ $a=\ \ 1.93608+1.23966I$ $b=-0.161051+0.967060I$	$-0.08292+1.96806I$	$-3.02444-3.31718I$
$u=-0.914247-0.478404I$ $a=\ \ 1.93608-1.23966I$ $b=-0.161051-0.967060I$	$-0.08292-1.96806I$	$-3.02444+3.31718I$
$u=\ \ 0.966933+0.421943I$ $a=-1.066120+0.925837I$ $b=\ \ 0.344795-0.186269I$	$-3.48026-1.82580I$	$-8.91337-0.41811I$
$u=\ \ 0.966933-0.421943I$ $a=-1.066120-0.925837I$ $b=\ \ 0.344795+0.186269I$	$-3.48026+1.82580I$	$-8.91337+0.41811I$
$u=-0.843224+0.323111I$ $a=\ \ 2.18551+0.44187I$ $b=-0.02670+1.63927I$	$9.58575+1.48104I$	$15.8659-1.4053I$
$u=-0.843224-0.323111I$ $a=\ \ 2.18551-0.44187I$ $b=-0.02670-1.63927I$	$9.58575-1.48104I$	$15.8659+1.4053I$
$u=\ \ 0.892802$ $a=\ \ 2.51005$ $b=-1.68772$	-0.327469	31.3600
$u=\ \ 1.092830+0.410784I$ $a=-0.040120+0.596864I$ $b=\ \ 0.344289-0.968431I$	$-0.49604-1.69025I$	$-3.00353+2.31093I$
$u=\ \ 1.092830-0.410784I$ $a=-0.040120-0.596864I$ $b=\ \ 0.344289+0.968431I$	$-0.49604+1.69025I$	$-3.00353-2.31093I$
$u=\ \ 0.982431+0.678623I$ $a=\ \ 0.481945-0.966192I$ $b=-0.301537+0.216828I$	$1.13399-2.76492I$	$-4.71775+2.69778I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.982431 - 0.678623I$ $a = 0.481945 + 0.966192I$ $b = -0.301537 - 0.216828I$	$1.13399 + 2.76492I$	$-4.71775 - 2.69778I$
$u = -0.001235 + 0.805919I$ $a = 0.013308 + 1.372580I$ $b = 0.266019 + 1.380800I$	$10.77260 + 0.39997I$	$4.81859 + 0.26297I$
$u = -0.001235 - 0.805919I$ $a = 0.013308 - 1.372580I$ $b = 0.266019 - 1.380800I$	$10.77260 - 0.39997I$	$4.81859 - 0.26297I$
$u = 0.803639$ $a = -5.39360$ $b = 3.31619$	7.71010	406.100
$u = -0.188499 + 1.199910I$ $a = -0.100781 - 0.411198I$ $b = -0.334755 - 1.093000I$	$4.36107 - 1.46727I$	$-9.10722 + 0.91856I$
$u = -0.188499 - 1.199910I$ $a = -0.100781 + 0.411198I$ $b = -0.334755 + 1.093000I$	$4.36107 + 1.46727I$	$-9.10722 - 0.91856I$
$u = 0.769194$ $a = 3.09657$ $b = -0.392673$	2.83265	-18.2700
$u = 1.24130$ $a = 0.934361$ $b = -0.451498$	0.517848	-1.73050
$u = -1.188050 + 0.465930I$ $a = -1.63669 + 0.35983I$ $b = 0.437433 - 1.269120I$	$0.55049 + 6.62323I$	$-2.00000 - 4.98434I$
$u = -1.188050 - 0.465930I$ $a = -1.63669 - 0.35983I$ $b = 0.437433 + 1.269120I$	$0.55049 - 6.62323I$	$-2.00000 + 4.98434I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.058040+0.817556I$ $a=-0.844520-0.579922I$ $b=\ \ 0.124690-0.940651I$	$-0.89236+3.28717I$	$0.-4.27413I$
$u=-1.058040-0.817556I$ $a=-0.844520+0.579922I$ $b=\ \ 0.124690+0.940651I$	$-0.89236-3.28717I$	$0.+4.27413I$
$u=-0.590403+0.063266I$ $a=\ \ 0.881544-0.820988I$ $b=-0.226195-1.378450I$	$3.71119-3.90958I$	$-5.50347+2.08979I$
$u=-0.590403-0.063266I$ $a=\ \ 0.881544+0.820988I$ $b=-0.226195+1.378450I$	$3.71119+3.90958I$	$-5.50347-2.08979I$
$u=-1.277630+0.597190I$ $a=\ \ 1.231240-0.157559I$ $b=-0.603405+0.987716I$	$5.09603+9.97190I$	$0.-8.63860I$
$u=-1.277630-0.597190I$ $a=\ \ 1.231240+0.157559I$ $b=-0.603405-0.987716I$	$5.09603-9.97190I$	$0.+8.63860I$
$u=-0.38968+1.35980I$ $a=\ \ 0.032493+0.174740I$ $b=\ \ 0.361338+0.858086I$	$8.57240-3.34121I$	$0.+9.69583I$
$u=-0.38968-1.35980I$ $a=\ \ 0.032493-0.174740I$ $b=\ \ 0.361338-0.858086I$	$8.57240+3.34121I$	$0.-9.69583I$
$u=-0.444659+0.029162I$ $a=-4.14758-0.30591I$ $b=\ \ 0.382925-1.299300I$	$10.08430+6.63124I$	$1.74300-4.80854I$
$u=-0.444659-0.029162I$ $a=-4.14758+0.30591I$ $b=\ \ 0.382925+1.299300I$	$10.08430-6.63124I$	$1.74300+4.80854I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 1.00000$ $a = \quad 1.50000 + 0.86603I$ $b = -0.500000 - 0.866025I$	0	-3.00000
$u = \quad 1.00000$ $a = \quad 1.50000 - 0.86603I$ $b = -0.500000 + 0.866025I$	0	-3.00000

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^2)(u^{30}+4u^{29}+\cdots+7u+1)(u^{132}-u^{131}+\cdots+1451u-844)$
c_2	$(u^2+u+1)(u^{30}-2u^{29}+\cdots-4u-1)$ $\cdot(u^{132}+44u^{130}+\cdots-21827u-1189)$
c_3	$(u^2+u+1)(u^{30}-4u^{29}+\cdots-5u+1)$ $\cdot(u^{132}-4u^{131}+\cdots+9472u-2239)$
c_4	$((u+1)^2)(u^{30}-4u^{29}+\cdots-7u+1)(u^{132}-u^{131}+\cdots+1451u-844)$
c_5, c_6	$((u+1)^2)(u^{30}-u^{29}+\cdots-16u^2-1)(u^{132}+2u^{131}+\cdots+130u+19)$
c_7	$u^2(u^{30}-u^{29}+\cdots-12u-3)(u^{132}+u^{130}+\cdots-28u+8)$
c_8	$(u^2-u+1)(u^{30}+2u^{29}+\cdots+4u-1)$ $\cdot(u^{132}+44u^{130}+\cdots-21827u-1189)$
c_9	$(u^2-u+1)(u^{30}+2u^{29}+\cdots+20u+1)$ $\cdot(u^{132}-4u^{130}+\cdots-37881u+2437)$
c_{10}	$((u-1)^2)(u^{30}+u^{29}+\cdots-16u^2-1)(u^{132}+2u^{131}+\cdots+130u+19)$
c_{11}	$(u^2-u+1)(u^{30}+12u^{28}+\cdots+8u-1)$ $\cdot(u^{132}+6u^{131}+\cdots+89459u+56393)$
c_{12}	$((u-1)^2)(u^{30}-6u^{29}+\cdots-2u-1)(u^{132}-5u^{131}+\cdots+4452u+103)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$((y-1)^2)(y^{30}-10y^{29}+\cdots-23y+1)$ $\cdot(y^{132}-63y^{131}+\cdots-11311753y+712336)$
c_2, c_8	$(y^2+y+1)(y^{30}+14y^{29}+\cdots-10y+1)$ $\cdot(y^{132}+88y^{131}+\cdots-71456419y+1413721)$
c_3	$(y^2+y+1)(y^{30}-18y^{29}+\cdots+y+1)$ $\cdot(y^{132}-36y^{131}+\cdots-304367236y+5013121)$
c_5, c_6, c_{10}	$((y-1)^2)(y^{30}-39y^{29}+\cdots+32y+1)$ $\cdot(y^{132}-144y^{131}+\cdots-14848y+361)$
c_7	$y^2(y^{30}-7y^{29}+\cdots-1020y+9)(y^{132}+2y^{131}+\cdots-4464y+64)$
c_9	$(y^2+y+1)(y^{30}-14y^{29}+\cdots-214y+1)$ $\cdot(y^{132}-8y^{131}+\cdots-75967363y+5938969)$
c_{11}	$(y^2+y+1)(y^{30}+24y^{29}+\cdots-14y+1)$ $\cdot(y^{132}+62y^{131}+\cdots+237776842153y+3180170449)$
c_{12}	$((y-1)^2)(y^{30}-14y^{29}+\cdots-40y+1)$ $\cdot(y^{132}-27y^{131}+\cdots-6883504y+10609)$