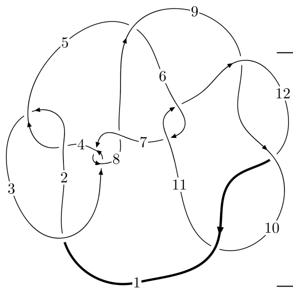
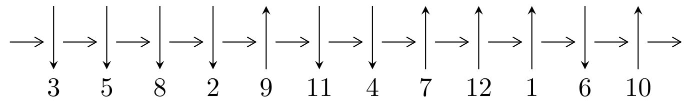
$12a_{0080}$ ($K12a_{0080}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u = \langle & 2.47932 \times 10^{172} u^{99} + 4.76140 \times 10^{172} u^{98} + \cdots + 7.64219 \times 10^{171} b - 7.86042 \times 10^{173}, \\
& 1.61477 \times 10^{173} u^{99} + 2.13974 \times 10^{173} u^{98} + \cdots + 1.52844 \times 10^{172} a - 2.14797 \times 10^{174}, \\
& u^{100} + 2u^{99} + \cdots - 64u - 32 \rangle \\
I_2^u = \langle & b,\ -u^8 + 2u^7 - 3u^6 + 3u^5 - 4u^4 + 4u^3 - 3u^2 + a + 2u - 1,\ u^9 - u^8 + 2u^7 - u^6 + 3u^5 - u^4 + 2u^3 + u + 1 \rangle
\end{aligned}$$

$$I_1^v = \langle a,\ 2v^4 - v^3 - 3v^2 + b + 6v - 2,\ v^5 - v^4 - v^3 + 4v^2 - 3v + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 114 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. $\boldsymbol{I_1^u = \langle 2.48 \times 10^{172} u^{99} + 4.76 \times 10^{172} u^{98} + \cdots + 7.64 \times 10^{171} b - 7.86 \times 10^{173},\ 1.61 \times 10^{173} u^{99} + 2.14 \times 10^{173} u^{98} + \cdots + 1.53 \times 10^{172} a - 2.15 \times 10^{174},\ u^{100} + 2u^{99} + \cdots - 64u - 32 \rangle}$

(i) Arc colorings

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

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

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

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

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

$$a_{11} = \begin{pmatrix} -10.5648u^{99} - 13.9996u^{98} + \cdots + 485.144u + 140.533 \\ -3.24425u^{99} - 6.23041u^{98} + \cdots + 227.295u + 102.856 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -1.62635u^{99} - 12.7491u^{98} + \cdots + 379.363u + 373.535 \\ 2.75906u^{99} - 1.00208u^{98} + \cdots + 17.4499u + 112.614 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 1.99211u^{99} - 0.362984u^{98} + \cdots + 11.6286u + 92.4955 \\ 4.80922u^{99} + 8.87550u^{98} + \cdots - 249.660u - 114.564 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -2.00742u^{99} - 6.91461u^{98} + \cdots + 214.739u + 175.776 \\ -2.72976u^{99} - 5.69852u^{98} + \cdots + 201.086u + 122.708 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -6.01213u^{99} - 5.95088u^{98} + \cdots + 236.170u + 39.7247 \\ -9.17264u^{99} - 20.1928u^{98} + \cdots + 647.217u + 409.849 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.722339u^{99} + 1.21609u^{98} + \cdots - 13.6525u - 53.0678 \\ -5.10774u^{99} - 10.5309u^{98} + \cdots + 348.261u + 207.853 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.75020u^{99} - 1.20374u^{98} + \cdots + 54.2989u - 54.5712 \\ -1.57899u^{99} - 0.971002u^{98} + \cdots + 14.8200u - 34.6674 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0436322u^{99} + 11.7279u^{98} + \cdots - 467.357u - 260.647$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{100} + 53u^{99} + \cdots + 7u + 1$
c_2, c_4	$u^{100} - 7u^{99} + \cdots - 7u + 1$
c_3, c_7	$u^{100} + 2u^{99} + \cdots - 64u - 32$
c_5	$u^{100} + 3u^{99} + \cdots - 618085u - 69121$
c_6, c_{11}	$u^{100} + 2u^{99} + \cdots + 512u + 512$
c_8	$u^{100} - 36u^{99} + \cdots - 13824u + 1024$
c_9, c_{10}, c_{12}	$u^{100} + 11u^{99} + \cdots - 17u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{100} - 5y^{99} + \cdots + 33y + 1$
c_2, c_4	$y^{100} - 53y^{99} + \cdots - 7y + 1$
c_3, c_7	$y^{100} + 36y^{99} + \cdots + 13824y + 1024$
c_5	$y^{100} - 37y^{99} + \cdots - 377607258613y + 4777712641$
c_6, c_{11}	$y^{100} + 60y^{99} + \cdots - 2883584y + 262144$
c_8	$y^{100} + 48y^{99} + \cdots - 60424192y + 1048576$
c_9, c_{10}, c_{12}	$y^{100} - 97y^{99} + \cdots - 201y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.884881 + 0.443710I$ $a = -1.02731 + 1.13017I$ $b = -0.56926 + 1.31324I$	$6.60856 + 5.95419I$	0
$u = 0.884881 - 0.443710I$ $a = -1.02731 - 1.13017I$ $b = -0.56926 - 1.31324I$	$6.60856 - 5.95419I$	0
$u = 0.539252 + 0.807936I$ $a = 0.74537 - 1.84294I$ $b = 1.070410 - 0.257597I$	$0.28317 - 1.56689I$	0
$u = 0.539252 - 0.807936I$ $a = 0.74537 + 1.84294I$ $b = 1.070410 + 0.257597I$	$0.28317 + 1.56689I$	0
$u = -0.877511 + 0.546781I$ $a = 0.1165030 - 0.0622745I$ $b = -0.093715 - 1.021170I$	$-0.65453 - 1.60971I$	0
$u = -0.877511 - 0.546781I$ $a = 0.1165030 + 0.0622745I$ $b = -0.093715 + 1.021170I$	$-0.65453 + 1.60971I$	0
$u = -0.590496 + 0.849773I$ $a = 0.995509 + 0.498875I$ $b = 0.547653 + 1.013140I$	$-2.32363 + 0.91046I$	0
$u = -0.590496 - 0.849773I$ $a = 0.995509 - 0.498875I$ $b = 0.547653 - 1.013140I$	$-2.32363 - 0.91046I$	0
$u = -0.586412 + 0.852774I$ $a = -2.45305 - 0.96693I$ $b = -0.433519 + 1.091210I$	$-2.31645 + 3.75588I$	0
$u = -0.586412 - 0.852774I$ $a = -2.45305 + 0.96693I$ $b = -0.433519 - 1.091210I$	$-2.31645 - 3.75588I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ \ 0.707489+0.757410I$ $a=-0.528671+1.213530I$ $b=-0.622925+0.365302I$	$-4.51548+0.41476I$	0
$u=\ \ 0.707489-0.757410I$ $a=-0.528671-1.213530I$ $b=-0.622925-0.365302I$	$-4.51548-0.41476I$	0
$u=-0.131827+1.029980I$ $a=-0.230349-0.166934I$ $b=-0.542386-0.048973I$	$2.23387+2.24163I$	0
$u=-0.131827-1.029980I$ $a=-0.230349+0.166934I$ $b=-0.542386+0.048973I$	$2.23387-2.24163I$	0
$u=-0.595860+0.754704I$ $a=-1.05018-1.06069I$ $b=-0.610358-1.204840I$	$3.06706-2.97422I$	0
$u=-0.595860-0.754704I$ $a=-1.05018+1.06069I$ $b=-0.610358+1.204840I$	$3.06706+2.97422I$	0
$u=\ \ 0.942753+0.079467I$ $a=-0.94741-1.14825I$ $b=-0.42749-1.36141I$	$7.67217-4.88901I$	0
$u=\ \ 0.942753-0.079467I$ $a=-0.94741+1.14825I$ $b=-0.42749+1.36141I$	$7.67217+4.88901I$	0
$u=-0.982256+0.392199I$ $a=-0.89974+1.13851I$ $b=-0.31425+1.38095I$	$6.55088+0.63605I$	0
$u=-0.982256-0.392199I$ $a=-0.89974-1.13851I$ $b=-0.31425-1.38095I$	$6.55088-0.63605I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.561927 + 0.902740I$ $a = -1.93396 + 0.08705I$ $b = -0.980104 - 0.465605I$	$0.61325 - 2.85921I$	0
$u = 0.561927 - 0.902740I$ $a = -1.93396 - 0.08705I$ $b = -0.980104 + 0.465605I$	$0.61325 + 2.85921I$	0
$u = -0.586585 + 0.721651I$ $a = 1.253280 - 0.140571I$ $b = 0.579476 - 0.460487I$	$-1.10103 + 1.53124I$	0
$u = -0.586585 - 0.721651I$ $a = 1.253280 + 0.140571I$ $b = 0.579476 + 0.460487I$	$-1.10103 - 1.53124I$	0
$u = -0.273384 + 0.883080I$ $a = -1.55173 - 0.98026I$ $b = 0.361902 + 1.342250I$	$5.56558 - 3.02900I$	0
$u = -0.273384 - 0.883080I$ $a = -1.55173 + 0.98026I$ $b = 0.361902 - 1.342250I$	$5.56558 + 3.02900I$	0
$u = 0.846635 + 0.674153I$ $a = 1.294800 + 0.078123I$ $b = 0.636434 + 0.312379I$	$-4.33856 + 2.20835I$	0
$u = 0.846635 - 0.674153I$ $a = 1.294800 - 0.078123I$ $b = 0.636434 - 0.312379I$	$-4.33856 - 2.20835I$	0
$u = 0.933715 + 0.579457I$ $a = -2.11655 + 0.00733I$ $b = -1.132900 - 0.269644I$	$0.78239 + 4.13235I$	0
$u = 0.933715 - 0.579457I$ $a = -2.11655 - 0.00733I$ $b = -1.132900 + 0.269644I$	$0.78239 - 4.13235I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.592846 + 0.934567I$ $a = 2.56449 + 0.68884I$ $b = 0.61347 - 1.31069I$	$3.64044 + 7.68908I$	0
$u = -0.592846 - 0.934567I$ $a = 2.56449 - 0.68884I$ $b = 0.61347 + 1.31069I$	$3.64044 - 7.68908I$	0
$u = -0.604341 + 0.951748I$ $a = -0.517680 - 0.796306I$ $b = -0.642092 - 0.244132I$	$-0.38436 + 3.21470I$	0
$u = -0.604341 - 0.951748I$ $a = -0.517680 + 0.796306I$ $b = -0.642092 + 0.244132I$	$-0.38436 - 3.21470I$	0
$u = -0.595384 + 0.957685I$ $a = -0.577978 + 0.159926I$ $b = -0.399909 - 0.928636I$	$-0.19999 + 5.40810I$	0
$u = -0.595384 - 0.957685I$ $a = -0.577978 - 0.159926I$ $b = -0.399909 + 0.928636I$	$-0.19999 - 5.40810I$	0
$u = -0.952835 + 0.617965I$ $a = 0.825124 + 0.563092I$ $b = 0.438487 + 1.130360I$	$-1.85066 - 6.43010I$	0
$u = -0.952835 - 0.617965I$ $a = 0.825124 - 0.563092I$ $b = 0.438487 - 1.130360I$	$-1.85066 + 6.43010I$	0
$u = 0.353565 + 0.779804I$ $a = -0.737665 - 0.744402I$ $b = -0.386602 + 0.710932I$	$2.07371 - 1.25412I$	$5.06066 + 0.I$
$u = 0.353565 - 0.779804I$ $a = -0.737665 + 0.744402I$ $b = -0.386602 - 0.710932I$	$2.07371 + 1.25412I$	$5.06066 + 0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.767779+0.856370I$ $a=-0.74522+1.20868I$ $b=-0.078209+0.988155I$	$2.51912+2.88295I$	0
$u=-0.767779-0.856370I$ $a=-0.74522-1.20868I$ $b=-0.078209-0.988155I$	$2.51912-2.88295I$	0
$u=\ 0.671240+0.936658I$ $a=\ 1.320780+0.169029I$ $b=\ 0.711534+0.469548I$	$-3.96383-5.71381I$	0
$u=\ 0.671240-0.936658I$ $a=\ 1.320780-0.169029I$ $b=\ 0.711534-0.469548I$	$-3.96383+5.71381I$	0
$u=-0.526480+0.660317I$ $a=\ 2.10099+1.07697I$ $b=\ 0.092237-0.872052I$	$-1.085510-0.755363I$	0
$u=-0.526480-0.660317I$ $a=\ 2.10099-1.07697I$ $b=\ 0.092237+0.872052I$	$-1.085510+0.755363I$	0
$u=\ 0.736743+0.396732I$ $a=\ 0.807808-0.420897I$ $b=\ 0.372239-1.034010I$	$0.58400+2.29834I$	$0.-2.67935I$
$u=\ 0.736743-0.396732I$ $a=\ 0.807808+0.420897I$ $b=\ 0.372239+1.034010I$	$0.58400-2.29834I$	$0.+2.67935I$
$u=\ 0.846193+0.820472I$ $a=-0.68816-1.35772I$ $b=\ 0.020735-0.965121I$	$-1.27779+1.44176I$	0
$u=\ 0.846193-0.820472I$ $a=-0.68816+1.35772I$ $b=\ 0.020735+0.965121I$	$-1.27779-1.44176I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.531104 + 1.052380I$ $a = 1.124550 - 0.785137I$ $b = 0.075357 + 1.118830I$	$3.55316 - 2.32371I$	0
$u = 0.531104 - 1.052380I$ $a = 1.124550 + 0.785137I$ $b = 0.075357 - 1.118830I$	$3.55316 + 2.32371I$	0
$u = 0.062447 + 1.182640I$ $a = -0.047396 - 1.179770I$ $b = -0.152637 + 1.182900I$	$5.94496 - 0.00646I$	0
$u = 0.062447 - 1.182640I$ $a = -0.047396 + 1.179770I$ $b = -0.152637 - 1.182900I$	$5.94496 + 0.00646I$	0
$u = -1.010080 + 0.638749I$ $a = -1.06871 - 1.13966I$ $b = -0.63437 - 1.32583I$	$4.17046 - 10.49690I$	0
$u = -1.010080 - 0.638749I$ $a = -1.06871 + 1.13966I$ $b = -0.63437 + 1.32583I$	$4.17046 + 10.49690I$	0
$u = 0.160477 + 1.192630I$ $a = -0.670374 + 1.141510I$ $b = -0.246868 - 1.196250I$	$5.73999 - 5.17903I$	0
$u = 0.160477 - 1.192630I$ $a = -0.670374 - 1.141510I$ $b = -0.246868 + 1.196250I$	$5.73999 + 5.17903I$	0
$u = -0.111935 + 1.198360I$ $a = 0.498285 + 0.254723I$ $b = 1.237630 + 0.049174I$	$7.96158 + 2.61323I$	0
$u = -0.111935 - 1.198360I$ $a = 0.498285 - 0.254723I$ $b = 1.237630 - 0.049174I$	$7.96158 - 2.61323I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.575264 + 1.075480I$ $a = 0.94704 + 1.16772I$ $b = 1.197790 + 0.259387I$	$5.08931 + 4.99074I$	0
$u = -0.575264 - 1.075480I$ $a = 0.94704 - 1.16772I$ $b = 1.197790 - 0.259387I$	$5.08931 - 4.99074I$	0
$u = 0.778394 + 0.949746I$ $a = -0.655843 - 1.135800I$ $b = -0.110283 - 0.902804I$	$-0.85499 - 7.49455I$	0
$u = 0.778394 - 0.949746I$ $a = -0.655843 + 1.135800I$ $b = -0.110283 + 0.902804I$	$-0.85499 + 7.49455I$	0
$u = 0.764709 + 0.097850I$ $a = 0.600945 + 0.209636I$ $b = 0.169538 + 0.986881I$	$1.11462 - 1.94278I$	$1.85416 + 5.36837I$
$u = 0.764709 - 0.097850I$ $a = 0.600945 - 0.209636I$ $b = 0.169538 - 0.986881I$	$1.11462 + 1.94278I$	$1.85416 - 5.36837I$
$u = -0.723243 + 0.246375I$ $a = -2.19747 - 0.04350I$ $b = -1.020380 + 0.117035I$	$2.93963 - 0.21256I$	$2.00889 - 1.10009I$
$u = -0.723243 - 0.246375I$ $a = -2.19747 + 0.04350I$ $b = -1.020380 - 0.117035I$	$2.93963 + 0.21256I$	$2.00889 + 1.10009I$
$u = 0.613381 + 1.073800I$ $a = -1.83144 + 0.65617I$ $b = -0.429259 - 1.174990I$	$2.46078 - 7.41018I$	0
$u = 0.613381 - 1.073800I$ $a = -1.83144 - 0.65617I$ $b = -0.429259 + 1.174990I$	$2.46078 + 7.41018I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.440467 + 1.158480I$ $a = -0.683720 - 0.005974I$ $b = 0.30408 - 1.45896I$	$11.17460 + 0.24489I$	0
$u = 0.440467 - 1.158480I$ $a = -0.683720 + 0.005974I$ $b = 0.30408 + 1.45896I$	$11.17460 - 0.24489I$	0
$u = -0.114937 + 0.750794I$ $a = -1.83320 - 0.55115I$ $b = -0.681621 + 0.459189I$	$2.54384 - 0.78639I$	$3.67508 + 0.13252I$
$u = -0.114937 - 0.750794I$ $a = -1.83320 + 0.55115I$ $b = -0.681621 - 0.459189I$	$2.54384 + 0.78639I$	$3.67508 - 0.13252I$
$u = -0.013659 + 1.255670I$ $a = 0.395183 + 0.654450I$ $b = 0.47616 - 1.45597I$	$12.99600 + 3.48911I$	0
$u = -0.013659 - 1.255670I$ $a = 0.395183 - 0.654450I$ $b = 0.47616 + 1.45597I$	$12.99600 - 3.48911I$	0
$u = 0.719929 + 1.031490I$ $a = -0.727686 + 0.780402I$ $b = -0.713876 + 0.248134I$	$-3.22846 - 8.05708I$	0
$u = 0.719929 - 1.031490I$ $a = -0.727686 - 0.780402I$ $b = -0.713876 - 0.248134I$	$-3.22846 + 8.05708I$	0
$u = 0.219681 + 1.258860I$ $a = 0.974040 - 0.677228I$ $b = 0.54021 + 1.43860I$	$12.5302 - 8.9696I$	0
$u = 0.219681 - 1.258860I$ $a = 0.974040 + 0.677228I$ $b = 0.54021 - 1.43860I$	$12.5302 + 8.9696I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.688325 + 1.089100I$ $a = 1.220450 + 0.472444I$ $b = 0.154564 - 1.150210I$	$0.99382 + 7.40466I$	0
$u = -0.688325 - 1.089100I$ $a = 1.220450 - 0.472444I$ $b = 0.154564 + 1.150210I$	$0.99382 - 7.40466I$	0
$u = 0.655303 + 1.113300I$ $a = 2.11748 - 0.31037I$ $b = 0.65071 + 1.35252I$	$8.6068 - 11.5978I$	0
$u = 0.655303 - 1.113300I$ $a = 2.11748 + 0.31037I$ $b = 0.65071 - 1.35252I$	$8.6068 + 11.5978I$	0
$u = -0.611906 + 1.158220I$ $a = -0.735864 + 0.386210I$ $b = 0.22842 + 1.47970I$	$9.03534 + 5.08439I$	0
$u = -0.611906 - 1.158220I$ $a = -0.735864 - 0.386210I$ $b = 0.22842 - 1.47970I$	$9.03534 - 5.08439I$	0
$u = 0.714038 + 1.103300I$ $a = 1.19287 - 1.18198I$ $b = 1.219300 - 0.319619I$	$2.42053 - 10.18240I$	0
$u = 0.714038 - 1.103300I$ $a = 1.19287 + 1.18198I$ $b = 1.219300 + 0.319619I$	$2.42053 + 10.18240I$	0
$u = -0.737297 + 1.100470I$ $a = -1.88544 - 0.36854I$ $b = -0.473405 + 1.192110I$	$-0.32558 + 12.62840I$	0
$u = -0.737297 - 1.100470I$ $a = -1.88544 + 0.36854I$ $b = -0.473405 - 1.192110I$	$-0.32558 - 12.62840I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.018968 + 0.672758I$ $a = 1.090690 - 0.276318I$ $b = 0.505309 - 0.771691I$	$-0.25376 + 2.03673I$	$0.89306 - 5.76366I$
$u = -0.018968 - 0.672758I$ $a = 1.090690 + 0.276318I$ $b = 0.505309 + 0.771691I$	$-0.25376 - 2.03673I$	$0.89306 + 5.76366I$
$u = -0.766986 + 1.121400I$ $a = 2.18814 + 0.06503I$ $b = 0.68311 - 1.34178I$	$5.7212 + 16.9694I$	0
$u = -0.766986 - 1.121400I$ $a = 2.18814 - 0.06503I$ $b = 0.68311 + 1.34178I$	$5.7212 - 16.9694I$	0
$u = -0.401862 + 0.490171I$ $a = 2.62983 + 0.88459I$ $b = -0.042922 - 0.711367I$	$-1.040340 - 0.778197I$	$-0.27027 - 2.61559I$
$u = -0.401862 - 0.490171I$ $a = 2.62983 - 0.88459I$ $b = -0.042922 + 0.711367I$	$-1.040340 + 0.778197I$	$-0.27027 + 2.61559I$
$u = -0.153184 + 0.607610I$ $a = -0.937923 + 1.036010I$ $b = -0.437442 + 1.121800I$	$4.67145 + 4.93475I$	$7.38116 - 9.44071I$
$u = -0.153184 - 0.607610I$ $a = -0.937923 - 1.036010I$ $b = -0.437442 - 1.121800I$	$4.67145 - 4.93475I$	$7.38116 + 9.44071I$
$u = -0.554585$ $a = 1.16240$ $b = 0.265734$	-1.12797	-9.40680
$u = 0.369216$ $a = 9.89071$ $b = 0.314374$	0.283296	-54.4150

II.

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 3u^8 + 4u^6 - 3u^5 + 10u^4 - u^3 + 7u^2 - 6u + 4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.140343 + 0.966856I$ $a = -1.004430 + 0.297869I$ $b = 0$	$3.42837 + 2.09337I$	$6.19892 - 4.26451I$
$u = -0.140343 - 0.966856I$ $a = -1.004430 - 0.297869I$ $b = 0$	$3.42837 - 2.09337I$	$6.19892 + 4.26451I$
$u = -0.628449 + 0.875112I$ $a = -0.275254 + 0.816341I$ $b = 0$	$1.02799 + 2.45442I$	$0.00914 - 2.54651I$
$u = -0.628449 - 0.875112I$ $a = -0.275254 - 0.816341I$ $b = 0$	$1.02799 - 2.45442I$	$0.00914 + 2.54651I$
$u = 0.796005 + 0.733148I$ $a = 0.070080 - 0.850995I$ $b = 0$	$-2.72642 + 1.33617I$	$-5.35644 - 0.59665I$
$u = 0.796005 - 0.733148I$ $a = 0.070080 + 0.850995I$ $b = 0$	$-2.72642 - 1.33617I$	$-5.35644 + 0.59665I$
$u = 0.728966 + 0.986295I$ $a = -0.195086 - 0.635552I$ $b = 0$	$-1.95319 - 7.08493I$	$-3.81555 + 4.89194I$
$u = 0.728966 - 0.986295I$ $a = -0.195086 + 0.635552I$ $b = 0$	$-1.95319 + 7.08493I$	$-3.81555 - 4.89194I$
$u = -0.512358$ $a = 3.80937$ $b = 0$	0.446489	9.92790

III. $\boldsymbol{I_1^v = \langle a,\ 2v^4 - v^3 - 3v^2 + b + 6v - 2,\ v^5 - v^4 - v^3 + 4v^2 - 3v + 1\rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= v^4 + 2v^3 + v^2 + v - 1$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4	$(y-1)^5$
c_3, c_7, c_8	y^5
c_5	$y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1$
c_6, c_{11}	$y^5 + 3y^4 + 4y^3 + y^2 - y - 1$
c_9, c_{10}, c_{12}	$y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = 0.896438 + 0.890762I$ $a = 0$ $b = 0.339110 + 0.822375I$	$-1.31583 - 1.53058I$	$-5.47076 + 5.40154I$
$v = 0.896438 - 0.890762I$ $a = 0$ $b = 0.339110 - 0.822375I$	$-1.31583 + 1.53058I$	$-5.47076 - 5.40154I$
$v = 0.453870 + 0.402731I$ $a = 0$ $b = -0.455697 - 1.200150I$	$4.22763 - 4.40083I$	$-0.88874 + 1.16747I$
$v = 0.453870 - 0.402731I$ $a = 0$ $b = -0.455697 + 1.200150I$	$4.22763 + 4.40083I$	$-0.88874 - 1.16747I$
$v = -1.70062$ $a = 0$ $b = -0.766826$	0.756147	-1.28100

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u-1)^5(u^9-5u^8+12u^7-15u^6+9u^5+u^4-4u^3+2u^2+u-1)$ $\cdot(u^{100}+53u^{99}+\cdots+7u+1)$
c_2	$(u-1)^5(u^9+u^8-2u^7-3u^6+u^5+3u^4+2u^3-u-1)$ $\cdot(u^{100}-7u^{99}+\cdots-7u+1)$
c_3	$u^5(u^9+u^8+2u^7+u^6+3u^5+u^4+2u^3+u-1)$ $\cdot(u^{100}+2u^{99}+\cdots-64u-32)$
c_4	$(u+1)^5(u^9-u^8-2u^7+3u^6+u^5-3u^4+2u^3-u+1)$ $\cdot(u^{100}-7u^{99}+\cdots-7u+1)$
c_5	$(u^5+3u^4+4u^3+u^2-u-1)$ $\cdot(u^9+3u^8+8u^7+13u^6+17u^5+17u^4+12u^3+6u^2+u-1)$ $\cdot(u^{100}+3u^{99}+\cdots-618085u-69121)$
c_6	$u^9(u^5+u^4+\cdots+u+1)(u^{100}+2u^{99}+\cdots+512u+512)$
c_7	$u^5(u^9-u^8+2u^7-u^6+3u^5-u^4+2u^3+u+1)$ $\cdot(u^{100}+2u^{99}+\cdots-64u-32)$
c_8	$u^5(u^9-3u^8+8u^7-13u^6+17u^5-17u^4+12u^3-6u^2+u+1)$ $\cdot(u^{100}-36u^{99}+\cdots-13824u+1024)$
c_9, c_{10}	$((u+1)^9)(u^5-u^4+\cdots+u+1)(u^{100}+11u^{99}+\cdots-17u-1)$
c_{11}	$u^9(u^5-u^4+\cdots+u-1)(u^{100}+2u^{99}+\cdots+512u+512)$
c_{12}	$((u-1)^9)(u^5+u^4+\cdots+u-1)(u^{100}+11u^{99}+\cdots-17u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y-1)^5(y^9 - y^8 + 12y^7 - 7y^6 + 37y^5 + y^4 - 10y^2 + 5y - 1)$ $\cdot (y^{100} - 5y^{99} + \cdots + 33y + 1)$
c_2, c_4	$(y-1)^5(y^9 - 5y^8 + 12y^7 - 15y^6 + 9y^5 + y^4 - 4y^3 + 2y^2 + y - 1)$ $\cdot (y^{100} - 53y^{99} + \cdots - 7y + 1)$
c_3, c_7	$y^5(y^9 + 3y^8 + 8y^7 + 13y^6 + 17y^5 + 17y^4 + 12y^3 + 6y^2 + y - 1)$ $\cdot (y^{100} + 36y^{99} + \cdots + 13824y + 1024)$
c_5	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)$ $\cdot (y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)$ $\cdot (y^{100} - 37y^{99} + \cdots - 377607258613y + 4777712641)$
c_6, c_{11}	$y^9(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)$ $\cdot (y^{100} + 60y^{99} + \cdots - 2883584y + 262144)$
c_8	$y^5(y^9 + 7y^8 + 20y^7 + 25y^6 + 5y^5 - 15y^4 + 22y^2 + 13y - 1)$ $\cdot (y^{100} + 48y^{99} + \cdots - 60424192y + 1048576)$
c_9, c_{10}, c_{12}	$((y-1)^9)(y^5 - 5y^4 + \cdots - y - 1)(y^{100} - 97y^{99} + \cdots - 201y + 1)$