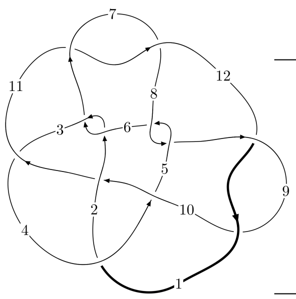
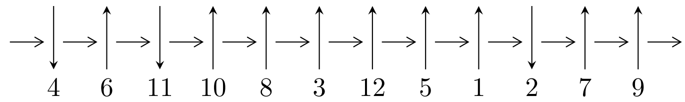
$12a_{0987}$ ($K12a_{0987}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.86463 \times 10^{467} u^{122} - 1.08545 \times 10^{468} u^{121} + \cdots + 8.79558 \times 10^{470} b + 5.71526 \times 10^{472},$$
$$7.73571 \times 10^{471} u^{122} - 5.76169 \times 10^{472} u^{121} + \cdots + 7.85533 \times 10^{474} a - 1.00953 \times 10^{477},$$
$$u^{123} - 9u^{122} + \cdots - 2948798u + 321516 \rangle$$
$$I_2^u = \langle 5.83720 \times 10^{21} u^{26} - 2.72828 \times 10^{22} u^{25} + \cdots + 2.89110 \times 10^{21} b - 1.48508 \times 10^{22},$$
$$-2.42389 \times 10^{21} u^{26} + 6.65883 \times 10^{21} u^{25} + \cdots + 2.89110 \times 10^{21} a - 7.96830 \times 10^{21},\ u^{27} - 5u^{26} + \cdots - 6u -$$
$$I_3^u = \langle -3a^3 - 2a^2 + 23b + 10a - 17,\ a^4 + a^3 + 2a^2 + 2a + 7,\ u + 1 \rangle$$
$$I_4^u = \langle b + 1,\ a + 1,\ u + 1 \rangle$$
$$I_5^u = \langle b^5 + 2b^4 a + b^3 a^2 - 3b^3 - 4b^2 a - a^2 b + 3b + a - 1,\ u + 1 \rangle$$

$$I_1^v = \langle a,\ b^4 + b^3 + 1,\ v - 1 \rangle$$
$$I_2^v = \langle a,\ b - 1,\ v - 1 \rangle$$

* 6 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 160 representations.
* 1 irreducible components of $\dim_{\mathbb{C}} = 1$

[1] The image of knot diagram is generated by the software "**Draw programme**" developed by Andrew Bartholomew(`http://www.layer8.co.uk/maths/draw/index.htm#Running-draw`), where we modified some parts for our purpose(`https://github.com/CATsTAILs/LinksPainter`).

[2] All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

I. $\boldsymbol{I_1^u = \langle 1.86 \times 10^{467} u^{122} - 1.09 \times 10^{468} u^{121} + \cdots + 8.80 \times 10^{470} b + 5.72 \times 10^{472},\ 7.74 \times 10^{471} u^{122} - 5.76 \times 10^{472} u^{121} + \cdots + 7.86 \times 10^{474} a - 1.01 \times 10^{477},\ u^{123} - 9u^{122} + \cdots - 2948798u + 321516 \rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.000984772u^{122} + 0.00733475u^{121} + \cdots - 1234.17u + 128.515 \\ -0.000211996u^{122} + 0.00123409u^{121} + \cdots + 422.058u - 64.9788 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -0.000241210u^{122} + 0.00133391u^{121} + \cdots + 646.806u - 97.3597 \\ 0.000175060u^{122} - 0.00154456u^{121} + \cdots + 739.001u - 94.1782 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.00299049u^{122} + 0.0230242u^{121} + \cdots - 5627.68u + 651.606 \\ 0.000450486u^{122} - 0.00419159u^{121} + \cdots + 2348.96u - 301.333 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0.000631004u^{122} - 0.00491033u^{121} + \cdots + 1254.82u - 147.152 \\ 0.000419888u^{122} - 0.00359154u^{121} + \cdots + 1623.36u - 207.809 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.00262832u^{122} + 0.0218172u^{121} + \cdots - 8417.78u + 1051.74 \\ -0.00182420u^{122} + 0.0147858u^{121} + \cdots - 5107.11u + 627.881 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 0.00219190u^{122} - 0.0176406u^{121} + \cdots + 5863.43u - 716.510 \\ 0.000438168u^{122} - 0.00344815u^{121} + \cdots + 979.105u - 116.314 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.00119677u^{122} + 0.00856883u^{121} + \cdots - 812.114u + 63.5364 \\ -0.000211996u^{122} + 0.00123409u^{121} + \cdots + 422.058u - 64.9788 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.00190443u^{122} + 0.0157881u^{121} + \cdots - 6034.26u + 752.676 \\ -0.00194277u^{122} + 0.0160788u^{121} + \cdots - 6183.07u + 771.699 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -0.00105806u^{122} + 0.00697489u^{121} + \cdots + 464.652u - 97.2317$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$16(16u^{123} - 216u^{122} + \cdots - 705357u + 15123)$
c_2, c_6	$u^{123} + 9u^{122} + \cdots - 2948798u - 321516$
c_3	$48(48u^{123} + 1409u^{121} + \cdots - 1.26434 \times 10^9 u + 8.64983 \times 10^7)$
c_4	$48(48u^{123} - 96u^{122} + \cdots - 1112u - 192)$
c_5, c_8	$16(16u^{123} + 88u^{122} + \cdots - 21054u - 1797)$
c_7, c_{11}	$16(16u^{123} - 8u^{122} + \cdots + 1543440u + 242409)$
c_9, c_{12}	$u^{123} + 12u^{122} + \cdots + 413544u + 22932$
c_{10}	$16(16u^{123} + 72u^{122} + \cdots - 3849u - 357)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$256(256y^{123} + 5088y^{122} + \cdots + 3.00705 \times 10^{11}y - 2.28705 \times 10^{8})$
c_2, c_6	$y^{123} - 73y^{122} + \cdots - 2074541056628y - 103372538256$
c_3	$2304(2304y^{123} + 135264y^{122} + \cdots - 6.88635 \times 10^{16}y - 7.48195 \times 10^{15})$
c_4	$2304(2304y^{123} - 96y^{122} + \cdots + 1.09813 \times 10^{7}y - 36864)$
c_5, c_8	$256(256y^{123} + 14560y^{122} + \cdots + 5.22257 \times 10^{7}y - 3229209)$
c_7, c_{11}	256 $\cdot (256y^{123} - 25888y^{122} + \cdots + 2905429891470y - 58762123281)$
c_9, c_{12}	$y^{123} - 88y^{122} + \cdots + 39388547160y - 525876624$
c_{10}	$256(256y^{123} - 544y^{122} + \cdots + 1.34154 \times 10^{7}y - 127449)$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.828835 + 0.559706I$ $a = 0.410272 + 1.240470I$ $b = 0.542712 + 0.036145I$	$-3.93622 + 2.28082I$	0
$u = 0.828835 - 0.559706I$ $a = 0.410272 - 1.240470I$ $b = 0.542712 - 0.036145I$	$-3.93622 - 2.28082I$	0
$u = -0.083475 + 0.998976I$ $a = 0.121967 - 0.191332I$ $b = 0.656002 + 0.694825I$	$1.59978 - 3.93172I$	0
$u = -0.083475 - 0.998976I$ $a = 0.121967 + 0.191332I$ $b = 0.656002 - 0.694825I$	$1.59978 + 3.93172I$	0
$u = 0.976198 + 0.186088I$ $a = -0.700323 + 0.444307I$ $b = 1.59666 - 0.10866I$	$2.89132 + 0.96593I$	0
$u = 0.976198 - 0.186088I$ $a = -0.700323 - 0.444307I$ $b = 1.59666 + 0.10866I$	$2.89132 - 0.96593I$	0
$u = 0.830942 + 0.593877I$ $a = -1.187380 + 0.173809I$ $b = -0.601051 + 0.305501I$	$0.59992 + 6.10560I$	0
$u = 0.830942 - 0.593877I$ $a = -1.187380 - 0.173809I$ $b = -0.601051 - 0.305501I$	$0.59992 - 6.10560I$	0
$u = 1.024870 + 0.196236I$ $a = 0.928097 - 0.195465I$ $b = 1.037450 - 0.230394I$	$2.39522 + 10.37410I$	0
$u = 1.024870 - 0.196236I$ $a = 0.928097 + 0.195465I$ $b = 1.037450 + 0.230394I$	$2.39522 - 10.37410I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.390784 + 0.970261I$ $a = -0.309480 - 0.661325I$ $b = 0.470803 - 0.882112I$	$-0.51041 - 4.68989I$	0
$u = -0.390784 - 0.970261I$ $a = -0.309480 + 0.661325I$ $b = 0.470803 + 0.882112I$	$-0.51041 + 4.68989I$	0
$u = 0.013998 + 1.051830I$ $a = -0.440184 + 0.218061I$ $b = -1.017510 - 0.805771I$	$6.77422 - 6.54883I$	0
$u = 0.013998 - 1.051830I$ $a = -0.440184 - 0.218061I$ $b = -1.017510 + 0.805771I$	$6.77422 + 6.54883I$	0
$u = 1.036360 + 0.208971I$ $a = -0.488519 - 0.219809I$ $b = -1.200680 + 0.226964I$	$-1.47789 + 5.31372I$	0
$u = 1.036360 - 0.208971I$ $a = -0.488519 + 0.219809I$ $b = -1.200680 - 0.226964I$	$-1.47789 - 5.31372I$	0
$u = -1.055400 + 0.128723I$ $a = 0.10188 - 1.85654I$ $b = -0.54814 + 1.48844I$	$3.80056 + 1.51795I$	0
$u = -1.055400 - 0.128723I$ $a = 0.10188 + 1.85654I$ $b = -0.54814 - 1.48844I$	$3.80056 - 1.51795I$	0
$u = -0.034599 + 0.923850I$ $a = 0.123180 + 0.215194I$ $b = -0.354838 - 0.932334I$	$4.30405 - 4.99081I$	0
$u = -0.034599 - 0.923850I$ $a = 0.123180 - 0.215194I$ $b = -0.354838 + 0.932334I$	$4.30405 + 4.99081I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.024660 + 0.330349I$ $a = -1.159970 - 0.046719I$ $b = 0.387313 - 0.417488I$	$4.05951 + 0.77163I$	0
$u = -1.024660 - 0.330349I$ $a = -1.159970 + 0.046719I$ $b = 0.387313 + 0.417488I$	$4.05951 - 0.77163I$	0
$u = 0.752714 + 0.794721I$ $a = 0.412107 + 0.130757I$ $b = 0.797168 - 0.071425I$	$-4.37049 + 2.83892I$	0
$u = 0.752714 - 0.794721I$ $a = 0.412107 - 0.130757I$ $b = 0.797168 + 0.071425I$	$-4.37049 - 2.83892I$	0
$u = -1.090890 + 0.119207I$ $a = -0.11920 - 1.46693I$ $b = 1.04096 + 1.32503I$	$2.28408 + 1.07076I$	0
$u = -1.090890 - 0.119207I$ $a = -0.11920 + 1.46693I$ $b = 1.04096 - 1.32503I$	$2.28408 - 1.07076I$	0
$u = -1.010600 + 0.479528I$ $a = 0.48517 - 1.74911I$ $b = 1.358710 + 0.383974I$	$2.04201 - 2.12820I$	0
$u = -1.010600 - 0.479528I$ $a = 0.48517 + 1.74911I$ $b = 1.358710 - 0.383974I$	$2.04201 + 2.12820I$	0
$u = 0.414351 + 0.774816I$ $a = -0.0630441 + 0.0216587I$ $b = -0.874765 - 0.091336I$	$-3.02638 - 1.52135I$	0
$u = 0.414351 - 0.774816I$ $a = -0.0630441 - 0.0216587I$ $b = -0.874765 + 0.091336I$	$-3.02638 + 1.52135I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.462837 + 0.742107I$ $a = -0.141675 + 0.465436I$ $b = -1.21146 + 0.76832I$	$-4.81381 + 2.77717I$	0
$u = -0.462837 - 0.742107I$ $a = -0.141675 - 0.465436I$ $b = -1.21146 - 0.76832I$	$-4.81381 - 2.77717I$	0
$u = -0.229596 + 0.838615I$ $a = -0.661012 - 0.274328I$ $b = -0.679351 + 0.809644I$	$7.60389 - 0.56705I$	0
$u = -0.229596 - 0.838615I$ $a = -0.661012 + 0.274328I$ $b = -0.679351 - 0.809644I$	$7.60389 + 0.56705I$	0
$u = 0.750670 + 0.409190I$ $a = -0.50829 - 1.77502I$ $b = -0.067633 - 0.149073I$	$0.40590 - 1.89067I$	0
$u = 0.750670 - 0.409190I$ $a = -0.50829 + 1.77502I$ $b = -0.067633 + 0.149073I$	$0.40590 + 1.89067I$	0
$u = 1.034840 + 0.517031I$ $a = 0.079654 - 1.254180I$ $b = -0.819752 + 0.341032I$	$-1.11289 + 6.31877I$	0
$u = 1.034840 - 0.517031I$ $a = 0.079654 + 1.254180I$ $b = -0.819752 - 0.341032I$	$-1.11289 - 6.31877I$	0
$u = -1.16414$ $a = 1.10361$ $b = -0.570627$	2.67454	0
$u = 0.866156 + 0.787470I$ $a = 0.465476 + 0.470261I$ $b = 0.879857 - 0.052529I$	$-4.40611 + 2.95802I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.866156 - 0.787470I$ $a = 0.465476 - 0.470261I$ $b = 0.879857 + 0.052529I$	$-4.40611 - 2.95802I$	0
$u = -1.112140 + 0.413385I$ $a = -0.01016 - 2.11297I$ $b = 1.23374 + 1.21001I$	$1.45609 - 12.69390I$	0
$u = -1.112140 - 0.413385I$ $a = -0.01016 + 2.11297I$ $b = 1.23374 - 1.21001I$	$1.45609 + 12.69390I$	0
$u = -1.116460 + 0.435612I$ $a = -0.02823 + 1.94732I$ $b = -1.36725 - 1.02354I$	$-2.67479 - 7.21218I$	0
$u = -1.116460 - 0.435612I$ $a = -0.02823 - 1.94732I$ $b = -1.36725 + 1.02354I$	$-2.67479 + 7.21218I$	0
$u = 1.178880 + 0.228771I$ $a = 0.31491 - 1.71324I$ $b = -0.91885 + 1.13445I$	$2.32646 + 4.10744I$	0
$u = 1.178880 - 0.228771I$ $a = 0.31491 + 1.71324I$ $b = -0.91885 - 1.13445I$	$2.32646 - 4.10744I$	0
$u = -0.088174 + 0.786377I$ $a = 0.0847556 + 0.0688453I$ $b = 0.822039 + 0.684232I$	$1.10331 - 4.64342I$	$6.00000 + 6.67055I$
$u = -0.088174 - 0.786377I$ $a = 0.0847556 - 0.0688453I$ $b = 0.822039 - 0.684232I$	$1.10331 + 4.64342I$	$6.00000 - 6.67055I$
$u = 1.015090 + 0.666490I$ $a = 0.998214 + 0.683939I$ $b = 0.068096 - 0.285870I$	$10.35030 + 2.66298I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.015090 - 0.666490I$ $a = 0.998214 - 0.683939I$ $b = 0.068096 + 0.285870I$	$10.35030 - 2.66298I$	0
$u = 1.220670 + 0.115449I$ $a = -0.45375 + 1.63628I$ $b = 1.21373 - 1.28394I$	$5.19186 - 0.08640I$	0
$u = 1.220670 - 0.115449I$ $a = -0.45375 - 1.63628I$ $b = 1.21373 + 1.28394I$	$5.19186 + 0.08640I$	0
$u = 0.055343 + 1.227770I$ $a = 0.091697 - 0.346801I$ $b = 0.372975 + 0.050693I$	$-0.27253 - 5.19214I$	0
$u = 0.055343 - 1.227770I$ $a = 0.091697 + 0.346801I$ $b = 0.372975 - 0.050693I$	$-0.27253 + 5.19214I$	0
$u = 0.550932 + 1.103300I$ $a = -0.391350 + 0.283478I$ $b = -0.1203470 + 0.0126864I$	$-0.400588 + 0.392163I$	0
$u = 0.550932 - 1.103300I$ $a = -0.391350 - 0.283478I$ $b = -0.1203470 - 0.0126864I$	$-0.400588 - 0.392163I$	0
$u = -0.382598 + 0.657347I$ $a = -0.028276 - 0.190135I$ $b = 1.124250 - 0.827108I$	$-0.81371 + 8.56442I$	$3.64621 - 4.29467I$
$u = -0.382598 - 0.657347I$ $a = -0.028276 + 0.190135I$ $b = 1.124250 + 0.827108I$	$-0.81371 - 8.56442I$	$3.64621 + 4.29467I$
$u = -0.150461 + 1.237080I$ $a = -0.328855 + 0.030863I$ $b = -1.03176 + 1.05367I$	$3.35801 + 13.25030I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.150461-1.237080I$ $a=-0.328855-0.030863I$ $b=-1.03176-1.05367I$	$3.35801-13.25030I$	0
$u=-1.228870+0.397700I$ $a=\ \ 0.08969-1.57447I$ $b=\ \ 0.570243+0.592233I$	$4.49394-3.40604I$	0
$u=-1.228870-0.397700I$ $a=\ \ 0.08969+1.57447I$ $b=\ \ 0.570243-0.592233I$	$4.49394+3.40604I$	0
$u=-1.191680+0.517268I$ $a=-0.59329+1.65830I$ $b=-0.748192-0.831877I$	$10.49870-4.42770I$	0
$u=-1.191680-0.517268I$ $a=-0.59329-1.65830I$ $b=-0.748192+0.831877I$	$10.49870+4.42770I$	0
$u=-0.700041$ $a=-3.46582$ $b=-0.845285$	2.31941	0.443950
$u=\ \ 1.284450+0.237750I$ $a=-0.39069+1.59706I$ $b=\ \ 0.96373-1.07159I$	$5.77783+8.39759I$	0
$u=\ \ 1.284450-0.237750I$ $a=-0.39069-1.59706I$ $b=\ \ 0.96373+1.07159I$	$5.77783-8.39759I$	0
$u=\ \ 0.472125+1.219030I$ $a=-0.570130-0.460024I$ $b=-1.34299-1.14829I$	$2.91692+5.27638I$	0
$u=\ \ 0.472125-1.219030I$ $a=-0.570130+0.460024I$ $b=-1.34299+1.14829I$	$2.91692-5.27638I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.614414 + 0.314551I$ $a = -1.71773 + 2.03546I$ $b = 0.301403 + 0.506143I$	$1.23105 - 8.16321I$	$8.47951 + 2.08496I$
$u = 0.614414 - 0.314551I$ $a = -1.71773 - 2.03546I$ $b = 0.301403 - 0.506143I$	$1.23105 + 8.16321I$	$8.47951 - 2.08496I$
$u = 1.322920 + 0.296994I$ $a = 0.702354 + 1.117660I$ $b = -0.74866 - 1.26079I$	$12.55080 + 4.40273I$	0
$u = 1.322920 - 0.296994I$ $a = 0.702354 - 1.117660I$ $b = -0.74866 + 1.26079I$	$12.55080 - 4.40273I$	0
$u = -0.131122 + 1.359530I$ $a = 0.164937 + 0.064096I$ $b = 0.464130 + 1.045050I$	$0.66521 - 3.37641I$	0
$u = -0.131122 - 1.359530I$ $a = 0.164937 - 0.064096I$ $b = 0.464130 - 1.045050I$	$0.66521 + 3.37641I$	0
$u = 1.301590 + 0.475831I$ $a = -0.34605 - 1.59012I$ $b = -0.574828 + 1.276480I$	$8.38378 + 9.99022I$	0
$u = 1.301590 - 0.475831I$ $a = -0.34605 + 1.59012I$ $b = -0.574828 - 1.276480I$	$8.38378 - 9.99022I$	0
$u = -1.277490 + 0.540266I$ $a = 0.732718 - 0.918215I$ $b = 0.161870 + 0.933657I$	$7.96462 - 0.21748I$	0
$u = -1.277490 - 0.540266I$ $a = 0.732718 + 0.918215I$ $b = 0.161870 - 0.933657I$	$7.96462 + 0.21748I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.230640+1.388580I$ $a=\ 0.276694-0.167507I$ $b=\ 0.95706-1.21825I$	$-1.28083+6.15014I$	0
$u=-0.230640-1.388580I$ $a=\ 0.276694+0.167507I$ $b=\ 0.95706+1.21825I$	$-1.28083-6.15014I$	0
$u=\ 0.493141+0.305872I$ $a=\ 1.13936-2.32407I$ $b=-0.443124-0.499990I$	$-2.98383-3.05850I$	$4.76456-0.20674I$
$u=\ 0.493141-0.305872I$ $a=\ 1.13936+2.32407I$ $b=-0.443124+0.499990I$	$-2.98383+3.05850I$	$4.76456+0.20674I$
$u=-1.39870+0.29010I$ $a=\ 0.419763+0.881174I$ $b=-0.303031-0.343268I$	$5.51493-0.47579I$	0
$u=-1.39870-0.29010I$ $a=\ 0.419763-0.881174I$ $b=-0.303031+0.343268I$	$5.51493+0.47579I$	0
$u=\ 1.34744+0.48676I$ $a=\ 0.11183+1.51637I$ $b=\ 0.94734-1.09326I$	$5.99766+9.20816I$	0
$u=\ 1.34744-0.48676I$ $a=\ 0.11183-1.51637I$ $b=\ 0.94734+1.09326I$	$5.99766-9.20816I$	0
$u=\ 1.33667+0.53031I$ $a=-0.14731-1.62753I$ $b=-1.24169+0.91014I$	$10.8817+12.1545I$	0
$u=\ 1.33667-0.53031I$ $a=-0.14731+1.62753I$ $b=-1.24169-0.91014I$	$10.8817-12.1545I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.29826 + 0.65300I$ $a = -0.254869 - 0.871205I$ $b = -0.404942 + 0.396327I$	$2.31862 + 6.14292I$	0
$u = 1.29826 - 0.65300I$ $a = -0.254869 + 0.871205I$ $b = -0.404942 - 0.396327I$	$2.31862 - 6.14292I$	0
$u = 0.026187 + 0.544127I$ $a = 0.034176 - 0.377129I$ $b = -0.759966 - 0.450122I$	$-1.17002 - 1.27546I$	$-0.38060 + 2.73816I$
$u = 0.026187 - 0.544127I$ $a = 0.034176 + 0.377129I$ $b = -0.759966 + 0.450122I$	$-1.17002 + 1.27546I$	$-0.38060 - 2.73816I$
$u = 1.38163 + 0.46898I$ $a = 0.06091 + 1.47779I$ $b = 1.02568 - 1.18214I$	$5.91695 + 9.19563I$	0
$u = 1.38163 - 0.46898I$ $a = 0.06091 - 1.47779I$ $b = 1.02568 + 1.18214I$	$5.91695 - 9.19563I$	0
$u = -1.42605 + 0.33410I$ $a = 0.710362 - 1.080280I$ $b = -0.75825 + 1.78952I$	$9.21281 - 10.15130I$	0
$u = -1.42605 - 0.33410I$ $a = 0.710362 + 1.080280I$ $b = -0.75825 - 1.78952I$	$9.21281 + 10.15130I$	0
$u = 1.35996 + 0.56161I$ $a = -0.020373 + 1.105490I$ $b = 0.700048 - 0.465428I$	$3.90882 + 11.31930I$	0
$u = 1.35996 - 0.56161I$ $a = -0.020373 - 1.105490I$ $b = 0.700048 + 0.465428I$	$3.90882 - 11.31930I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40029+0.50264I$ $a=\ \ 0.624070-0.528110I$ $b=-0.676798+0.954907I$	$11.18180+0.89647I$	0
$u=-1.40029-0.50264I$ $a=\ \ 0.624070+0.528110I$ $b=-0.676798-0.954907I$	$11.18180-0.89647I$	0
$u=-1.37108+0.62024I$ $a=-0.25243+1.51407I$ $b=-1.35339-1.10536I$	$7.2653-19.7668I$	0
$u=-1.37108-0.62024I$ $a=-0.25243-1.51407I$ $b=-1.35339+1.10536I$	$7.2653+19.7668I$	0
$u=-1.40683+0.55628I$ $a=-0.318649+0.708087I$ $b=-0.136711-0.752207I$	$5.45365-2.02375I$	0
$u=-1.40683-0.55628I$ $a=-0.318649-0.708087I$ $b=-0.136711+0.752207I$	$5.45365+2.02375I$	0
$u=-0.459524$ $a=\ \ 1.84056$ $b=\ \ 0.276685$	0.953550	13.0960
$u=\ \ 1.53752+0.13256I$ $a=-0.441501-1.076780I$ $b=\ \ 0.93797+1.71211I$	$5.98736-0.11783I$	0
$u=\ \ 1.53752-0.13256I$ $a=-0.441501+1.076780I$ $b=\ \ 0.93797-1.71211I$	$5.98736+0.11783I$	0
$u=-1.40555+0.65738I$ $a=\ \ 0.267599-1.360540I$ $b=\ \ 1.36887+1.12677I$	$2.63989-13.24310I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.40555-0.65738I$ $a=\ 0.267599+1.360540I$ $b=\ 1.36887-1.12677I$	$2.63989+13.24310I$	0
$u=\ 1.55041+0.34359I$ $a=\ 0.521379+0.796876I$ $b=-0.60108-1.40728I$	$9.27752-7.27133I$	0
$u=\ 1.55041-0.34359I$ $a=\ 0.521379-0.796876I$ $b=-0.60108+1.40728I$	$9.27752+7.27133I$	0
$u=-1.53066+0.45877I$ $a=-0.416330+0.899541I$ $b=\ 0.08069-1.57157I$	$5.77201-3.47374I$	0
$u=-1.53066-0.45877I$ $a=-0.416330-0.899541I$ $b=\ 0.08069+1.57157I$	$5.77201+3.47374I$	0
$u=-0.168192+0.353066I$ $a=\ 1.71628+1.21552I$ $b=\ 0.633913-0.306029I$	$1.197990-0.022972I$	$8.49004-0.40673I$
$u=-0.168192-0.353066I$ $a=\ 1.71628-1.21552I$ $b=\ 0.633913+0.306029I$	$1.197990+0.022972I$	$8.49004+0.40673I$
$u=\ 1.54636+0.69953I$ $a=-0.301488-1.184520I$ $b=-1.65214+1.54026I$	$6.28204+2.48766I$	0
$u=\ 1.54636-0.69953I$ $a=-0.301488+1.184520I$ $b=-1.65214-1.54026I$	$6.28204-2.48766I$	0
$u=\ 0.072507+0.218572I$ $a=\ 2.28107+3.92479I$ $b=\ 0.522727+0.798281I$	$1.01513+2.21239I$	$8.96888-1.25136I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.072507 - 0.218572I$ $a = 2.28107 - 3.92479I$ $b = 0.522727 - 0.798281I$	$1.01513 - 2.21239I$	$8.96888 + 1.25136I$
$u = -1.43474 + 1.05424I$ $a = -0.452244 + 1.005240I$ $b = -2.35935 - 0.93568I$	$7.52546 - 4.69662I$	0
$u = -1.43474 - 1.05424I$ $a = -0.452244 - 1.005240I$ $b = -2.35935 + 0.93568I$	$7.52546 + 4.69662I$	0

II.

$\boldsymbol{I_2^u = \langle 5.84\times 10^{21}u^{26} - 2.73\times 10^{22}u^{25} + \cdots + 2.89\times 10^{21}b - 1.49\times 10^{22},\ -2.42\times 10^{21}u^{26} + 6.66\times 10^{21}u^{25} + \cdots + 2.89\times 10^{21}a - 7.97\times 10^{21},\ u^{27} - 5u^{26} + \cdots - 6u + 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.838399u^{26} - 2.30322u^{25} + \cdots - 1.60882u + 2.75615 \\ -2.01903u^{26} + 9.43683u^{25} + \cdots - 18.9143u + 5.13672 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.975207u^{26} - 3.24747u^{25} + \cdots + 3.20862u + 4.59182 \\ -2.20451u^{26} + 10.2192u^{25} + \cdots - 19.8537u + 6.06783 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.298330u^{26} + 2.67002u^{25} + \cdots - 9.84718u + 4.38121 \\ -2.74292u^{26} + 12.6626u^{25} + \cdots - 24.0269u + 6.05137 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 5.28341u^{26} - 23.9244u^{25} + \cdots + 46.7030u - 9.29851 \\ -0.555857u^{26} + 2.59900u^{25} + \cdots - 3.64225u + 2.27621 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 12.6767u^{26} - 60.2433u^{25} + \cdots + 104.111u - 31.4079 \\ 3.86936u^{26} - 17.8206u^{25} + \cdots + 31.7545u - 8.25753 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -10.4420u^{26} + 48.2168u^{25} + \cdots - 94.0732u + 25.3594 \\ -3.20451u^{26} + 14.2192u^{25} + \cdots - 25.8537u + 6.06783 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1.18063u^{26} + 7.13361u^{25} + \cdots - 20.5231u + 7.89287 \\ -2.01903u^{26} + 9.43683u^{25} + \cdots - 18.9143u + 5.13672 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 12.0091u^{26} - 56.9436u^{25} + \cdots + 97.0409u - 29.2410 \\ 4.08051u^{26} - 18.9118u^{25} + \cdots + 34.4280u - 8.70409 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{54586491030429944288229}{2891097935499617764769}u^{26} + \frac{252590371939791998353306}{2891097935499617764769}u^{25} + \cdots - \frac{489631306821485248219363}{2891097935499617764769}u + \frac{150491225102484366518807}{2891097935499617764769}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{27} - 8u^{26} + \cdots + u + 1$
c_2	$u^{27} - 5u^{26} + \cdots - 6u + 1$
c_3	$u^{27} - 5u^{26} + \cdots + 4u + 1$
c_4	$u^{27} + 3u^{26} + \cdots - 4u + 1$
c_5	$u^{27} + 7u^{26} + \cdots - 4u + 1$
c_6	$u^{27} + 5u^{26} + \cdots - 6u - 1$
c_7	$u^{27} - 3u^{26} + \cdots + 10u^2 - 1$
c_8	$u^{27} - 7u^{26} + \cdots - 4u - 1$
c_9	$u^{27} - 8u^{26} + \cdots - 22u + 1$
c_{10}	$u^{27} + 2u^{26} + \cdots - u - 1$
c_{11}	$u^{27} + 3u^{26} + \cdots - 10u^2 + 1$
c_{12}	$u^{27} + 8u^{26} + \cdots - 22u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{27} - 10y^{26} + \cdots - 13y - 1$
c_2, c_6	$y^{27} - 9y^{26} + \cdots + 10y - 1$
c_3	$y^{27} - 11y^{26} + \cdots + 18y^2 - 1$
c_4	$y^{27} - 7y^{26} + \cdots + 2y - 1$
c_5, c_8	$y^{27} + 3y^{26} + \cdots + 8y - 1$
c_7, c_{11}	$y^{27} - 15y^{26} + \cdots + 20y - 1$
c_9, c_{12}	$y^{27} - 24y^{26} + \cdots + 430y - 1$
c_{10}	$y^{27} + 44y^{25} + \cdots - 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.960256$ $a=\ \ 0.596635$ $b=\ \ 0.427535$	3.28166	12.2340
$u=-0.278336+0.913907I$ $a=-0.200376-0.846741I$ $b=-0.096284-0.605686I$	$-0.54501-2.72751I$	$2.90113+2.79754I$
$u=-0.278336-0.913907I$ $a=-0.200376+0.846741I$ $b=-0.096284+0.605686I$	$-0.54501+2.72751I$	$2.90113-2.79754I$
$u=\ \ 0.695603+0.648427I$ $a=\ \ 0.117632+0.622535I$ $b=\ \ 1.063860+0.717771I$	$0.79452+3.91333I$	$8.14679-5.26781I$
$u=\ \ 0.695603-0.648427I$ $a=\ \ 0.117632-0.622535I$ $b=\ \ 1.063860-0.717771I$	$0.79452-3.91333I$	$8.14679+5.26781I$
$u=\ \ 0.405951+0.857531I$ $a=\ \ 0.098439+0.640247I$ $b=\ \ 0.924519-0.346398I$	$-0.96829+1.35478I$	$2.43967-3.85610I$
$u=\ \ 0.405951-0.857531I$ $a=\ \ 0.098439-0.640247I$ $b=\ \ 0.924519+0.346398I$	$-0.96829-1.35478I$	$2.43967+3.85610I$
$u=\ \ 1.098730+0.102102I$ $a=-0.77707+2.70179I$ $b=\ \ 1.40859-2.49731I$	$2.96797-0.72446I$	$15.7942-4.3726I$
$u=\ \ 1.098730-0.102102I$ $a=-0.77707-2.70179I$ $b=\ \ 1.40859+2.49731I$	$2.96797+0.72446I$	$15.7942+4.3726I$
$u=-1.036180+0.551940I$ $a=\ \ 1.003830-0.889238I$ $b=-0.077454+0.352280I$	$10.96250-2.28403I$	$16.8451-1.4331I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.036180 - 0.551940I$ $a = 1.003830 + 0.889238I$ $b = -0.077454 - 0.352280I$	$10.96250 + 2.28403I$	$16.8451 + 1.4331I$
$u = 0.868601 + 0.841612I$ $a = -0.500141 - 0.453132I$ $b = -0.810921 + 0.059869I$	$-4.18369 + 3.09248I$	$20.0854 - 10.5481I$
$u = 0.868601 - 0.841612I$ $a = -0.500141 + 0.453132I$ $b = -0.810921 - 0.059869I$	$-4.18369 - 3.09248I$	$20.0854 + 10.5481I$
$u = -0.772117$ $a = 5.45860$ $b = 1.00432$	2.77882	29.0040
$u = -0.140075 + 1.374080I$ $a = -0.0289815 + 0.0163804I$ $b = 0.154620 + 0.821354I$	$0.50090 - 5.20648I$	$12.2118 + 8.9652I$
$u = -0.140075 - 1.374080I$ $a = -0.0289815 - 0.0163804I$ $b = 0.154620 - 0.821354I$	$0.50090 + 5.20648I$	$12.2118 - 8.9652I$
$u = 1.39028 + 0.39921I$ $a = -0.054614 + 1.367760I$ $b = 0.603701 - 1.150370I$	$6.14002 + 10.90440I$	$10.7101 - 9.9802I$
$u = 1.39028 - 0.39921I$ $a = -0.054614 - 1.367760I$ $b = 0.603701 + 1.150370I$	$6.14002 - 10.90440I$	$10.7101 + 9.9802I$
$u = -0.539556$ $a = -2.46548$ $b = -0.715187$	0.364084	-4.03030
$u = 0.204560 + 0.461308I$ $a = -2.05712 + 1.01061I$ $b = -0.853553 + 0.597527I$	$-3.26798 + 4.11102I$	$3.08862 - 6.45303I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.204560 - 0.461308I$ $a = -2.05712 - 1.01061I$ $b = -0.853553 - 0.597527I$	$-3.26798 - 4.11102I$	$3.08862 + 6.45303I$
$u = -1.43797 + 0.47003I$ $a = -0.199679 + 0.958315I$ $b = -0.374729 - 0.918491I$	$5.42247 - 1.39630I$	$12.16981 - 0.96989I$
$u = -1.43797 - 0.47003I$ $a = -0.199679 - 0.958315I$ $b = -0.374729 + 0.918491I$	$5.42247 + 1.39630I$	$12.16981 + 0.96989I$
$u = 0.424568 + 0.114039I$ $a = 3.26974 + 0.73237I$ $b = 0.844344 - 0.580851I$	$1.05272 + 9.29224I$	$7.38135 - 8.07216I$
$u = 0.424568 - 0.114039I$ $a = 3.26974 - 0.73237I$ $b = 0.844344 + 0.580851I$	$1.05272 - 9.29224I$	$7.38135 + 8.07216I$
$u = 1.44024 + 0.98702I$ $a = -0.466529 - 1.033330I$ $b = -2.14503 + 1.07891I$	$7.52044 + 4.56871I$	$0. + 23.7225I$
$u = 1.44024 - 0.98702I$ $a = -0.466529 + 1.033330I$ $b = -2.14503 - 1.07891I$	$7.52044 - 4.56871I$	$0. - 23.7225I$

III. $\boldsymbol{I_3^u = \langle -3a^3 - 2a^2 + 23b + 10a - 17,\ a^4 + a^3 + 2a^2 + 2a + 7,\ u + 1\rangle}$

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} a \\ 0.130435a^3 + 0.0869565a^2 - 0.434783a + 0.739130 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0434783a^3 + 0.304348a^2 + 0.478261a + 0.0869565 \\ 0.173913a^3 - 0.217391a^2 + 0.0869565a - 0.347826 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0.130435a^3 + 0.0869565a^2 + 0.565217a + 0.739130 \\ 0.130435a^3 + 0.0869565a^2 - 0.434783a + 0.739130 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.173913a^3 - 0.217391a^2 + 0.0869565a - 0.347826 \\ 0.217391a^3 + 0.478261a^2 - 0.391304a + 1.56522 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.130435a^3 + 0.0869565a^2 + 0.565217a + 0.739130 \\ 0.130435a^3 + 0.0869565a^2 - 0.434783a + 0.739130 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.130435a^3 - 0.0869565a^2 + 0.434783a - 0.739130 \\ 0.478261a^3 - 0.347826a^2 + 0.739130a + 0.0434783 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.130435a^3 + 0.0869565a^2 + 0.565217a + 0.739130 \\ 0.130435a^3 + 0.0869565a^2 - 0.434783a + 0.739130 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.130435a^3 + 0.0869565a^2 + 0.565217a + 0.739130 \\ 0.130435a^3 + 0.0869565a^2 - 0.434783a + 0.739130 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4, c_5 c_8	$y^4 + 3y^3 + 2y^2 + 1$
c_2, c_6	$(y-1)^4$
c_3	$(y^2 + y + 1)^2$
c_7, c_{10}, c_{11}	$y^4 - 5y^3 + 6y^2 + 4y + 1$
c_9, c_{12}	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.00000$ $a=\quad 0.69244+1.41390I$ $b=-0.192440-0.547877I$	1.64493	6.00000
$u=-1.00000$ $a=\quad 0.69244-1.41390I$ $b=-0.192440+0.547877I$	1.64493	6.00000
$u=-1.00000$ $a=-1.19244+1.18417I$ $b=\quad 1.69244-0.31815I$	1.64493	6.00000
$u=-1.00000$ $a=-1.19244-1.18417I$ $b=\quad 1.69244+0.31815I$	1.64493	6.00000

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

(i) Arc colorings

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

$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

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

$a_{11} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$

$a_4 = \begin{pmatrix} 3 \\ 1 \end{pmatrix}$

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

$a_{12} = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$

$a_8 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

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

$a_{10} = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$

$a_9 = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_4 c_5, c_6, c_7 c_8, c_{10}, c_{11}	$y-1$
c_3	$y-4$
c_9, c_{12}	y

(vi) Complex Volumes and Cusp Shapes

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

V. $I_5^u = \langle b^5 + 2b^4a + b^3a^2 - 3b^3 - 4b^2a - a^2b + 3b + a - 1,\ u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 12$

(iv) u-Polynomials at the component : It cannot be defined for a positive dimension component.

(v) Riley Polynomials at the component : It cannot be defined for a positive dimension component.

(iv) Complex Volumes and Cusp Shapes

Solution to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = \cdots$ $a = \cdots$ $b = \cdots$	3.28987	12.0000

VI. $I_1^v = \langle a,\ b^4 + b^3 + 1,\ v - 1\rangle$

(i) Arc colorings

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

$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

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

$$a_{12} = \begin{pmatrix} b \\ b \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} -b^2 + 1 \\ b^3 + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -b^3 - b^2 \\ -b^3 - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} b \\ b \end{pmatrix}$$

$$a_9 = \begin{pmatrix} b^2 + b - 1 \\ -b^3 + b - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = 0.518913 + 0.666610I$	1.64493	6.00000
$v = 1.00000$ $a = 0$ $b = 0.518913 - 0.666610I$	1.64493	6.00000
$v = 1.00000$ $a = 0$ $b = -1.018910 + 0.602565I$	1.64493	6.00000
$v = 1.00000$ $a = 0$ $b = -1.018910 - 0.602565I$	1.64493	6.00000

VII. $I_2^v = \langle a,\ b-1,\ v-1 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^v		$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v =$	1.00000		
$a =$	0	1.64493	6.00000
$b =$	1.00000		

VIII. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$16(u+1)^2(u^4-u^3+2u^2-2u+1)(u^4+u^3+2u^2+1)$ $\cdot(u^{27}-8u^{26}+\cdots+u+1)(16u^{123}-216u^{122}+\cdots-705357u+15123)$
c_2	$u^5(u-1)^5(u^{27}-5u^{26}+\cdots-6u+1)$ $\cdot(u^{123}+9u^{122}+\cdots-2948798u-321516)$
c_3	$48(u-1)(u+2)(u^2-u+1)^2(u^4+u^3+1)(u^{27}-5u^{26}+\cdots+4u+1)$ $\cdot(48u^{123}+1409u^{121}+\cdots-1264337384u+86498272)$
c_4	$48u(u+1)(u^4-u^2-2u+3)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{27}+3u^{26}+\cdots-4u+1)(48u^{123}-96u^{122}+\cdots-1112u-192)$
c_5	$16(u-1)(u+1)(u^4-u^3+2u^2+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{27}+7u^{26}+\cdots-4u+1)(16u^{123}+88u^{122}+\cdots-21054u-1797)$
c_6	$u^5(u-1)^5(u^{27}+5u^{26}+\cdots-6u-1)$ $\cdot(u^{123}+9u^{122}+\cdots-2948798u-321516)$
c_7	$16(u-1)^2(u^4+u^3+1)(u^4+3u^3+2u^2+1)(u^{27}-3u^{26}+\cdots+10u^2-1)$ $\cdot(16u^{123}-8u^{122}+\cdots+1543440u+242409)$
c_8	$16(u-1)(u+1)(u^4-u^3+2u^2+1)(u^4-u^3+2u^2-2u+1)$ $\cdot(u^{27}-7u^{26}+\cdots-4u-1)(16u^{123}+88u^{122}+\cdots-21054u-1797)$
c_9	$u^5(u-1)^5(u^{27}-8u^{26}+\cdots-22u+1)$ $\cdot(u^{123}+12u^{122}+\cdots+413544u+22932)$
c_{10}	$16(u-1)(u+1)(u^4-3u^3+2u^2+1)(u^4+u^3+1)(u^{27}+2u^{26}+\cdots-u-1)$ $\cdot(16u^{123}+72u^{122}+\cdots-3849u-357)$
c_{11}	$16(u-1)^2(u^4+u^3+1)(u^4+3u^3+2u^2+1)(u^{27}+3u^{26}+\cdots-10u^2+1)$ $\cdot(16u^{123}-8u^{122}+\cdots+1543440u+242409)$
c_{12}	$u^5(u-1)^5(u^{27}+8u^{26}+\cdots-22u-1)$ $\cdot(u^{123}+12u^{122}+\cdots+413544u+22932)$

IX. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$256(y-1)^2(y^4+3y^3+2y^2+1)(y^4+3y^3+6y^2+4y+1)$ $\cdot(y^{27}-10y^{26}+\cdots-13y-1)$ $\cdot(256y^{123}+5088y^{122}+\cdots+300704648685y-228705129)$
c_2, c_6	$y^5(y-1)^5(y^{27}-9y^{26}+\cdots+10y-1)$ $\cdot(y^{123}-73y^{122}+\cdots-2074541056628y-103372538256)$
c_3	$2304(y-4)(y-1)(y^2+y+1)^2(y^4-y^3+2y^2+1)$ $\cdot(y^{27}-11y^{26}+\cdots+18y^2-1)$ $\cdot(2304y^{123}+1.35\times10^5y^{122}+\cdots-6.89\times10^{16}y-7.48\times10^{15})$
c_4	$2304y(y-1)(y^4-2y^3+7y^2-10y+9)(y^4+3y^3+2y^2+1)$ $\cdot(y^{27}-7y^{26}+\cdots+2y-1)$ $\cdot(2304y^{123}-96y^{122}+\cdots+10981312y-36864)$
c_5, c_8	$256(y-1)^2(y^4+3y^3+2y^2+1)(y^4+3y^3+6y^2+4y+1)$ $\cdot(y^{27}+3y^{26}+\cdots+8y-1)$ $\cdot(256y^{123}+14560y^{122}+\cdots+52225746y-3229209)$
c_7, c_{11}	$256(y-1)^2(y^4-5y^3+6y^2+4y+1)(y^4-y^3+2y^2+1)$ $\cdot(y^{27}-15y^{26}+\cdots+20y-1)$ $\cdot(256y^{123}-25888y^{122}+\cdots+2905429891470y-58762123281)$
c_9, c_{12}	$y^5(y-1)^5(y^{27}-24y^{26}+\cdots+430y-1)$ $\cdot(y^{123}-88y^{122}+\cdots+39388547160y-525876624)$
c_{10}	$256(y-1)^2(y^4-5y^3+6y^2+4y+1)(y^4-y^3+2y^2+1)$ $\cdot(y^{27}+44y^{25}+\cdots-9y-1)$ $\cdot(256y^{123}-544y^{122}+\cdots+13415361y-127449)$