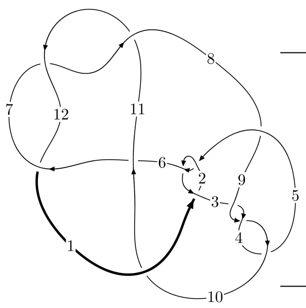
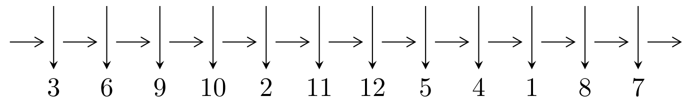
$12a_{0368}$ $(K12a_{0368})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 3.30973 \times 10^{28} u^{91} - 8.40338 \times 10^{28} u^{90} + \cdots + 5.98098 \times 10^{28} b + 1.59798 \times 10^{28},$$
$$- 2.69784 \times 10^{28} u^{91} + 1.86728 \times 10^{28} u^{90} + \cdots + 5.98098 \times 10^{28} a - 7.90169 \times 10^{28},\ u^{92} - 2u^{91} + \cdots + 4u -$$
$$I_2^u = \langle -au - u^2 + b + u - 1,\ -2u^2 a + a^2 - 3u^2 - 2a + u - 4,\ u^3 - u^2 + 2u - 1 \rangle$$
$$I_3^u = \langle -2u^2 + b - 2u - 2,\ -u^2 + a - 1,\ u^3 + u^2 + 2u + 1 \rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 101 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.

$I^u_1 = \langle 3.31\times10^{28}u^{91} - 8.40\times10^{28}u^{90} + \cdots + 5.98\times10^{28}b + 1.60\times10^{28},\ -2.70\times10^{28}u^{91} + 1.87\times10^{28}u^{90} + \cdots + 5.98\times10^{28}a - 7.90\times10^{28},\ u^{92} - 2u^{91} + \cdots + 4u - 1\rangle$

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^4 + 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.451070u^{91} - 0.312203u^{90} + \cdots - 7.08977u + 1.32114 \\ -0.553376u^{91} + 1.40502u^{90} + \cdots + 1.50461u - 0.267177 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 + 2u \\ u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.735415u^{91} - 0.771047u^{90} + \cdots - 8.70172u + 2.30497 \\ -0.222428u^{91} + 0.315787u^{90} + \cdots - 0.399025u + 0.493332 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.362177u^{91} - 0.986787u^{90} + \cdots + 4.35986u + 1.44942 \\ 0.858220u^{91} - 2.63949u^{90} + \cdots - 1.81332u + 0.982411 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.918301u^{91} + 2.21912u^{90} + \cdots - 3.90930u - 1.54472 \\ -0.0236999u^{91} + 0.263544u^{90} + \cdots + 0.339475u - 0.202110 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^6 - 3u^4 - 2u^2 + 1 \\ -u^8 - 4u^6 - 4u^4 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.29625u^{91} - 2.48311u^{90} + \cdots + 0.388481u + 2.80304 \\ 0.918260u^{91} - 2.71085u^{90} + \cdots - 2.13551u + 1.23180 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -1.75950u^{91} + 3.08333u^{90} + \cdots - 2.35105u - 16.2139$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{92}+46u^{91}+\cdots+1255u+49$
c_2, c_5	$u^{92}+4u^{91}+\cdots-67u-7$
c_3, c_4, c_9	$u^{92}-u^{91}+\cdots-24u-8$
c_6	$u^{92}-2u^{91}+\cdots-312u-29$
c_7, c_{11}, c_{12}	$u^{92}+2u^{91}+\cdots-4u-1$
c_8	$u^{92}+3u^{91}+\cdots+49864u+10856$
c_{10}	$u^{92}-20u^{91}+\cdots-103152u+12161$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{92} + 10y^{91} + \cdots - 468507y + 2401$
c_2, c_5	$y^{92} - 46y^{91} + \cdots - 1255y + 49$
c_3, c_4, c_9	$y^{92} - 85y^{91} + \cdots + 448y + 64$
c_6	$y^{92} + 4y^{91} + \cdots + 28748y + 841$
c_7, c_{11}, c_{12}	$y^{92} + 84y^{91} + \cdots - 16y + 1$
c_8	$y^{92} - y^{91} + \cdots - 514447808y + 117852736$
c_{10}	$y^{92} + 28y^{91} + \cdots - 3573140208y + 147889921$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.034848 + 1.070820I$ $a = 1.16142 + 1.64957I$ $b = 0.39105 - 1.62169I$	$-6.16629 + 0.50321I$	0
$u = -0.034848 - 1.070820I$ $a = 1.16142 - 1.64957I$ $b = 0.39105 + 1.62169I$	$-6.16629 - 0.50321I$	0
$u = -0.298329 + 1.065540I$ $a = -0.58990 - 1.97199I$ $b = -0.991589 + 0.695120I$	$-4.70505 + 8.08259I$	0
$u = -0.298329 - 1.065540I$ $a = -0.58990 + 1.97199I$ $b = -0.991589 - 0.695120I$	$-4.70505 - 8.08259I$	0
$u = 0.243152 + 1.123750I$ $a = -0.42463 + 1.52933I$ $b = -0.933638 - 1.026660I$	$0.59647 - 4.93114I$	0
$u = 0.243152 - 1.123750I$ $a = -0.42463 - 1.52933I$ $b = -0.933638 + 1.026660I$	$0.59647 + 4.93114I$	0
$u = -0.099228 + 1.149160I$ $a = 0.342890 - 1.154020I$ $b = -0.53285 + 1.56071I$	$-0.12027 + 1.68117I$	0
$u = -0.099228 - 1.149160I$ $a = 0.342890 + 1.154020I$ $b = -0.53285 - 1.56071I$	$-0.12027 - 1.68117I$	0
$u = -0.223947 + 1.146940I$ $a = -0.050862 - 0.628559I$ $b = -1.036560 - 0.050910I$	$-2.37447 + 3.62080I$	0
$u = -0.223947 - 1.146940I$ $a = -0.050862 + 0.628559I$ $b = -1.036560 + 0.050910I$	$-2.37447 - 3.62080I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.417399 + 0.711711I$ $a = 0.44156 - 2.75513I$ $b = 0.980567 - 0.367031I$	$-3.83510 + 8.20507I$	$-14.2773 - 4.2378I$
$u = 0.417399 - 0.711711I$ $a = 0.44156 + 2.75513I$ $b = 0.980567 + 0.367031I$	$-3.83510 - 8.20507I$	$-14.2773 + 4.2378I$
$u = 0.743091 + 0.297468I$ $a = -3.30203 - 0.28673I$ $b = -2.63885 - 0.35083I$	$-5.29278 - 12.34380I$	$-16.7373 + 9.0455I$
$u = 0.743091 - 0.297468I$ $a = -3.30203 + 0.28673I$ $b = -2.63885 + 0.35083I$	$-5.29278 + 12.34380I$	$-16.7373 - 9.0455I$
$u = -0.715067 + 0.312276I$ $a = -2.80954 + 0.09188I$ $b = -2.33320 + 0.20273I$	$0.27317 + 8.47973I$	$-12.3886 - 8.8422I$
$u = -0.715067 - 0.312276I$ $a = -2.80954 - 0.09188I$ $b = -2.33320 - 0.20273I$	$0.27317 - 8.47973I$	$-12.3886 + 8.8422I$
$u = 0.705158 + 0.313085I$ $a = 0.007471 + 0.229207I$ $b = 0.116507 + 0.613947I$	$-2.69498 - 6.91327I$	$-13.7303 + 5.8428I$
$u = 0.705158 - 0.313085I$ $a = 0.007471 - 0.229207I$ $b = 0.116507 - 0.613947I$	$-2.69498 + 6.91327I$	$-13.7303 - 5.8428I$
$u = -0.755570 + 0.124061I$ $a = 2.75287 - 0.27400I$ $b = 2.13575 + 0.12130I$	$-7.57244 - 4.17982I$	$-18.8339 + 3.7354I$
$u = -0.755570 - 0.124061I$ $a = 2.75287 + 0.27400I$ $b = 2.13575 - 0.12130I$	$-7.57244 + 4.17982I$	$-18.8339 - 3.7354I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.419534+0.632335I$ $a=\ \ 0.42637+2.43079I$ $b=\ \ 0.767115+0.278010I$	$1.49754-4.49101I$	$-9.57609+3.60714I$
$u=-0.419534-0.632335I$ $a=\ \ 0.42637-2.43079I$ $b=\ \ 0.767115-0.278010I$	$1.49754+4.49101I$	$-9.57609-3.60714I$
$u=\ \ 0.079329+1.239520I$ $a=-0.338826+0.178720I$ $b=-0.665582-0.126932I$	$2.98419-1.52090I$	0
$u=\ \ 0.079329-1.239520I$ $a=-0.338826-0.178720I$ $b=-0.665582+0.126932I$	$2.98419+1.52090I$	0
$u=\ \ 0.416289+0.609604I$ $a=\ \ 0.554452-0.075964I$ $b=-0.353566+0.101596I$	$-1.52499+2.98968I$	$-11.23647-0.16527I$
$u=\ \ 0.416289-0.609604I$ $a=\ \ 0.554452+0.075964I$ $b=-0.353566-0.101596I$	$-1.52499-2.98968I$	$-11.23647+0.16527I$
$u=-0.653161+0.337464I$ $a=\ \ 0.097611+0.186413I$ $b=\ \ 0.163634-0.406687I$	$2.31309+3.22705I$	$-8.73500-4.74749I$
$u=-0.653161-0.337464I$ $a=\ \ 0.097611-0.186413I$ $b=\ \ 0.163634+0.406687I$	$2.31309-3.22705I$	$-8.73500+4.74749I$
$u=\ \ 0.661017+0.308769I$ $a=-2.20722+0.54547I$ $b=-1.99099+0.22787I$	$-1.12232-4.16995I$	$-14.2649+4.5495I$
$u=\ \ 0.661017-0.308769I$ $a=-2.20722-0.54547I$ $b=-1.99099-0.22787I$	$-1.12232+4.16995I$	$-14.2649-4.5495I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.706111 + 0.084338I$ $a = 2.23611 + 0.20245I$ $b = 1.82332 - 0.12395I$	$-2.53333 + 1.38999I$	$-14.0303 - 4.7787I$
$u = 0.706111 - 0.084338I$ $a = 2.23611 - 0.20245I$ $b = 1.82332 + 0.12395I$	$-2.53333 - 1.38999I$	$-14.0303 + 4.7787I$
$u = 0.571431 + 0.417944I$ $a = -0.571220 + 0.056591I$ $b = -0.966951 + 0.051439I$	$0.02478 - 4.16521I$	$-11.76282 + 7.26961I$
$u = 0.571431 - 0.417944I$ $a = -0.571220 - 0.056591I$ $b = -0.966951 - 0.051439I$	$0.02478 + 4.16521I$	$-11.76282 - 7.26961I$
$u = 0.657513 + 0.255277I$ $a = 2.32367 + 1.60701I$ $b = 1.85504 + 0.58325I$	$-7.86767 - 3.37346I$	$-18.8189 + 5.1242I$
$u = 0.657513 - 0.255277I$ $a = 2.32367 - 1.60701I$ $b = 1.85504 - 0.58325I$	$-7.86767 + 3.37346I$	$-18.8189 - 5.1242I$
$u = -0.273151 + 1.269520I$ $a = -0.784454 - 0.758498I$ $b = -1.13550 + 1.11583I$	$-1.58778 + 3.32160I$	0
$u = -0.273151 - 1.269520I$ $a = -0.784454 + 0.758498I$ $b = -1.13550 - 1.11583I$	$-1.58778 - 3.32160I$	0
$u = -0.696747 + 0.052921I$ $a = 1.55611 - 0.39504I$ $b = 1.157240 - 0.471909I$	$-5.66596 - 0.20100I$	$-16.5902 - 1.1108I$
$u = -0.696747 - 0.052921I$ $a = 1.55611 + 0.39504I$ $b = 1.157240 + 0.471909I$	$-5.66596 + 0.20100I$	$-16.5902 + 1.1108I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.474451+0.495892I$ $a=\ \ 0.186792+0.006945I$ $b=-0.533837-0.088452I$	$3.02224+0.50785I$	$-6.50995-2.67224I$
$u=-0.474451-0.495892I$ $a=\ \ 0.186792-0.006945I$ $b=-0.533837+0.088452I$	$3.02224-0.50785I$	$-6.50995+2.67224I$
$u=-0.641532+0.227372I$ $a=-2.77674-2.05080I$ $b=-2.40013-1.11814I$	$-8.25229+2.34538I$	$-18.8507-6.3358I$
$u=-0.641532-0.227372I$ $a=-2.77674+2.05080I$ $b=-2.40013+1.11814I$	$-8.25229-2.34538I$	$-18.8507+6.3358I$
$u=\ \ 0.546620+0.394137I$ $a=\ \ 0.376941-0.947222I$ $b=\ \ 0.321957+0.123725I$	$0.037398+0.490858I$	$-11.59345-0.06446I$
$u=\ \ 0.546620-0.394137I$ $a=\ \ 0.376941+0.947222I$ $b=\ \ 0.321957-0.123725I$	$0.037398-0.490858I$	$-11.59345+0.06446I$
$u=\ \ 0.269413+1.300480I$ $a=-0.781329+0.840657I$ $b=-2.02613-0.86488I$	$1.77296-2.13369I$	0
$u=\ \ 0.269413-1.300480I$ $a=-0.781329-0.840657I$ $b=-2.02613+0.86488I$	$1.77296+2.13369I$	0
$u=-0.310339+1.325110I$ $a=-1.01943-1.08388I$ $b=-2.60482+0.61631I$	$-3.03208-0.33318I$	0
$u=-0.310339-1.325110I$ $a=-1.01943+1.08388I$ $b=-2.60482-0.61631I$	$-3.03208+0.33318I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.415028 + 0.472095I$ $a = 0.75019 - 1.77462I$ $b = 0.575771 - 0.027505I$	$-0.218277 + 0.609351I$	$-11.98707 + 1.52989I$
$u = 0.415028 - 0.472095I$ $a = 0.75019 + 1.77462I$ $b = 0.575771 + 0.027505I$	$-0.218277 - 0.609351I$	$-11.98707 - 1.52989I$
$u = -0.179121 + 1.366470I$ $a = -0.12914 - 1.42459I$ $b = -1.56586 - 0.31542I$	$-1.99612 + 2.07721I$	0
$u = -0.179121 - 1.366470I$ $a = -0.12914 + 1.42459I$ $b = -1.56586 + 0.31542I$	$-1.99612 - 2.07721I$	0
$u = -0.579053 + 0.183948I$ $a = 1.62434 - 1.20227I$ $b = 1.59468 - 0.33025I$	$-2.81344 + 0.87191I$	$-13.8407 - 7.5603I$
$u = -0.579053 - 0.183948I$ $a = 1.62434 + 1.20227I$ $b = 1.59468 + 0.33025I$	$-2.81344 - 0.87191I$	$-13.8407 + 7.5603I$
$u = 0.154946 + 1.389070I$ $a = -0.705627 - 0.180625I$ $b = -1.89247 - 2.47520I$	$-1.10166 - 1.43797I$	0
$u = 0.154946 - 1.389070I$ $a = -0.705627 + 0.180625I$ $b = -1.89247 + 2.47520I$	$-1.10166 + 1.43797I$	0
$u = -0.224481 + 1.380800I$ $a = -1.105640 - 0.260499I$ $b = -2.45703 + 1.93955I$	$2.20340 + 3.80841I$	0
$u = -0.224481 - 1.380800I$ $a = -1.105640 + 0.260499I$ $b = -2.45703 - 1.93955I$	$2.20340 - 3.80841I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.250427 + 1.390150I$ $a = -0.05424 + 1.79635I$ $b = 3.21719 + 0.62495I$	$-3.09254 + 5.59897I$	0
$u = -0.250427 - 1.390150I$ $a = -0.05424 - 1.79635I$ $b = 3.21719 - 0.62495I$	$-3.09254 - 5.59897I$	0
$u = 0.25774 + 1.40096I$ $a = -1.43971 + 0.38823I$ $b = -2.95919 - 1.83047I$	$-2.58142 - 6.71431I$	0
$u = 0.25774 - 1.40096I$ $a = -1.43971 - 0.38823I$ $b = -2.95919 + 1.83047I$	$-2.58142 + 6.71431I$	0
$u = 0.21684 + 1.42847I$ $a = 0.161711 + 0.522717I$ $b = 0.0833315 + 0.0472455I$	$5.80760 - 2.34021I$	0
$u = 0.21684 - 1.42847I$ $a = 0.161711 - 0.522717I$ $b = 0.0833315 - 0.0472455I$	$5.80760 + 2.34021I$	0
$u = 0.16115 + 1.43675I$ $a = 0.477907 + 0.872217I$ $b = -0.029713 + 1.077500I$	$5.81438 - 1.56102I$	0
$u = 0.16115 - 1.43675I$ $a = 0.477907 - 0.872217I$ $b = -0.029713 - 1.077500I$	$5.81438 + 1.56102I$	0
$u = 0.25769 + 1.42277I$ $a = 0.556379 - 1.170280I$ $b = 2.91233 + 0.46867I$	$4.41930 - 7.53188I$	0
$u = 0.25769 - 1.42277I$ $a = 0.556379 + 1.170280I$ $b = 2.91233 - 0.46867I$	$4.41930 + 7.53188I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.25175 + 1.43126I$ $a = 0.017549 - 0.211376I$ $b = 0.277668 + 0.504813I$	$7.97667 + 6.53923I$	0
$u = -0.25175 - 1.43126I$ $a = 0.017549 + 0.211376I$ $b = 0.277668 - 0.504813I$	$7.97667 - 6.53923I$	0
$u = 0.12926 + 1.44782I$ $a = -0.431462 + 0.092527I$ $b = 0.103286 + 0.465531I$	$4.93332 + 1.15748I$	0
$u = 0.12926 - 1.44782I$ $a = -0.431462 - 0.092527I$ $b = 0.103286 - 0.465531I$	$4.93332 - 1.15748I$	0
$u = 0.27416 + 1.42782I$ $a = -0.1300120 + 0.0395838I$ $b = 0.282499 - 0.854739I$	$2.87569 - 10.48030I$	0
$u = 0.27416 - 1.42782I$ $a = -0.1300120 - 0.0395838I$ $b = 0.282499 + 0.854739I$	$2.87569 + 10.48030I$	0
$u = 0.29266 + 1.42539I$ $a = 1.30505 - 1.39528I$ $b = 3.68027 + 1.01759I$	$0.2126 - 16.1064I$	0
$u = 0.29266 - 1.42539I$ $a = 1.30505 + 1.39528I$ $b = 3.68027 - 1.01759I$	$0.2126 + 16.1064I$	0
$u = -0.27848 + 1.42877I$ $a = 1.02929 + 1.23066I$ $b = 3.33111 - 0.89318I$	$5.84424 + 12.09630I$	0
$u = -0.27848 - 1.42877I$ $a = 1.02929 - 1.23066I$ $b = 3.33111 + 0.89318I$	$5.84424 - 12.09630I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.16680 + 1.44652I$ $a = -0.265726 + 0.042595I$ $b = 0.640917 - 0.522234I$	$9.19614 + 2.82647I$	0
$u = -0.16680 - 1.44652I$ $a = -0.265726 - 0.042595I$ $b = 0.640917 + 0.522234I$	$9.19614 - 2.82647I$	0
$u = -0.12335 + 1.45196I$ $a = 0.629226 - 0.989265I$ $b = 0.08446 - 1.75725I$	$8.05052 - 2.70837I$	0
$u = -0.12335 - 1.45196I$ $a = 0.629226 + 0.989265I$ $b = 0.08446 + 1.75725I$	$8.05052 + 2.70837I$	0
$u = 0.20317 + 1.44404I$ $a = -0.007857 - 0.306303I$ $b = 1.36450 + 0.57622I$	$5.99792 - 6.97659I$	0
$u = 0.20317 - 1.44404I$ $a = -0.007857 + 0.306303I$ $b = 1.36450 - 0.57622I$	$5.99792 + 6.97659I$	0
$u = 0.09348 + 1.45829I$ $a = 0.634030 + 1.073110I$ $b = 0.04616 + 2.20336I$	$3.02046 + 6.72210I$	0
$u = 0.09348 - 1.45829I$ $a = 0.634030 - 1.073110I$ $b = 0.04616 - 2.20336I$	$3.02046 - 6.72210I$	0
$u = 0.177561 + 0.406838I$ $a = 0.57829 + 3.07822I$ $b = 0.784807 + 0.211756I$	$-6.49085 + 0.26451I$	$-15.4855 + 1.1209I$
$u = 0.177561 - 0.406838I$ $a = 0.57829 - 3.07822I$ $b = 0.784807 - 0.211756I$	$-6.49085 - 0.26451I$	$-15.4855 - 1.1209I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.320885$ $a=5.19890$ $b=1.47791$	-6.71117	-12.0740
$u=0.319174$ $a=1.19589$ $b=0.236656$	-0.557113	-17.6120

II.

$$\boldsymbol{I_2^u = \langle -au - u^2 + b + u - 1,\ -2u^2a + a^2 - 3u^2 - 2a + u - 4,\ u^3 - u^2 + 2u - 1 \rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -4u^2 + 4u - 24$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ \ 0.215080 + 1.307140I$ $a = -0.489031 - 0.491114I$ $b = -0.34066 - 1.48972I$	$-3.55561 - 2.82812I$	$-16.4902 + 2.9794I$
$u = \ \ 0.215080 + 1.307140I$ $a = -0.83569 + 1.61567I$ $b = -3.16909 - 1.48972I$	$-3.55561 - 2.82812I$	$-16.4902 + 2.9794I$
$u = \ \ 0.215080 - 1.307140I$ $a = -0.489031 + 0.491114I$ $b = -0.34066 + 1.48972I$	$-3.55561 + 2.82812I$	$-16.4902 - 2.9794I$
$u = \ \ 0.215080 - 1.307140I$ $a = -0.83569 - 1.61567I$ $b = -3.16909 + 1.48972I$	$-3.55561 + 2.82812I$	$-16.4902 - 2.9794I$
$u = \ \ 0.569840$ $a = -1.15705$ $b = \ \ 0.0955418$	-7.69319	-23.0200
$u = \ \ 0.569840$ $a = \ \ 3.80649$ $b = \ \ 2.92397$	-7.69319	-23.0200

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

(i) Arc colorings

$$a_8 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} u \\ -u^2 - u - 1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^2 + 1 \\ 2u^2 + 2u + 2 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 0 \\ u^2 + u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ u^2 + u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} 0 \\ u^2 + u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

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

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.215080 + 1.307140I$ $a = -0.662359 - 0.562280I$ $b = -1.75488 + 1.48972I$	$1.37919 + 2.82812I$	$-11.81496 - 4.10401I$
$u = -0.215080 - 1.307140I$ $a = -0.662359 + 0.562280I$ $b = -1.75488 - 1.48972I$	$1.37919 - 2.82812I$	$-11.81496 + 4.10401I$
$u = -0.569840$ $a = \quad 1.32472$ $b = \quad 1.50976$	-2.75839	-14.3700

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{92}+46u^{91}+\cdots+1255u+49)$
c_2	$((u-1)^3)(u+1)^6(u^{92}+4u^{91}+\cdots-67u-7)$
c_3, c_4, c_9	$u^3(u^2-2)^3(u^{92}-u^{91}+\cdots-24u-8)$
c_5	$((u-1)^6)(u+1)^3(u^{92}+4u^{91}+\cdots-67u-7)$
c_6	$((u^3-u^2+1)^2)(u^3+u^2-1)(u^{92}-2u^{91}+\cdots-312u-29)$
c_7	$(u^3-u^2+2u-1)(u^3+u^2+2u+1)^2(u^{92}+2u^{91}+\cdots-4u-1)$
c_8	$u^3(u^2-2)^3(u^{92}+3u^{91}+\cdots+49864u+10856)$
c_{10}	$((u^3+u^2-1)^3)(u^{92}-20u^{91}+\cdots-103152u+12161)$
c_{11}, c_{12}	$((u^3-u^2+2u-1)^2)(u^3+u^2+2u+1)(u^{92}+2u^{91}+\cdots-4u-1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{92}+10y^{91}+\cdots-468507y+2401)$
c_2, c_5	$((y-1)^9)(y^{92}-46y^{91}+\cdots-1255y+49)$
c_3, c_4, c_9	$y^3(y-2)^6(y^{92}-85y^{91}+\cdots+448y+64)$
c_6	$((y^3-y^2+2y-1)^3)(y^{92}+4y^{91}+\cdots+28748y+841)$
c_7, c_{11}, c_{12}	$((y^3+3y^2+2y-1)^3)(y^{92}+84y^{91}+\cdots-16y+1)$
c_8	$y^3(y-2)^6(y^{92}-y^{91}+\cdots-5.14448\times10^8y+1.17853\times10^8)$
c_{10}	$(y^3-y^2+2y-1)^3$ $\cdot(y^{92}+28y^{91}+\cdots-3573140208y+147889921)$