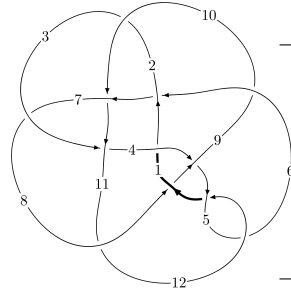
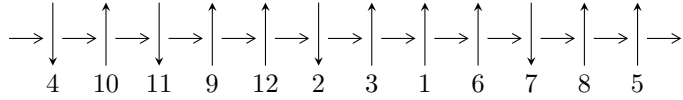


12a<sub>1193</sub> (K12a<sub>1193</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle 1.94312 \times 10^{80} u^{49} - 2.48619 \times 10^{79} u^{48} + \dots + 7.87680 \times 10^{79} b + 1.28241 \times 10^{80}, a - 1, u^{50} + 5u^{48} + \dots + 5u + 1 \rangle$$

$$I_2^u = \langle 1.63014 \times 10^{1735} u^{155} - 9.72983 \times 10^{1735} u^{154} + \dots + 1.03065 \times 10^{1738} b + 8.61106 \times 10^{1738}, 1.64322 \times 10^{1736} u^{155} - 2.98949 \times 10^{1735} u^{154} + \dots + 4.74098 \times 10^{1739} a + 1.16259 \times 10^{1741}, u^{156} - 6u^{155} + \dots + 6790u + 1288 \rangle$$

$$I_3^u = \langle -5.51879 \times 10^{28} u^{32} + 2.59045 \times 10^{28} u^{31} + \dots + 5.79727 \times 10^{28} b - 5.00823 \times 10^{27}, a + 1, u^{33} + 5u^{31} + \dots + 4u + 1 \rangle$$

$$I_4^u = \langle -484122u^{11} - 2829135u^{10} + \dots + 24262754b + 7309133, 19820339u^{11} + 138389241u^{10} + \dots + 48525508a - 191613318, u^{12} + 7u^{11} + 16u^{10} + 12u^9 + 9u^8 + 29u^7 + 43u^6 + 6u^5 + 3u^4 + 38u^3 + 7u^2 - 6u + 8 \rangle$$

\* 4 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 251 representations.

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\mathbf{I. } I_1^u = \langle 1.94 \times 10^{80} u^{49} - 2.49 \times 10^{79} u^{48} + \dots + 7.88 \times 10^{79} b + 1.28 \times 10^{80}, a - 1, u^{50} + 5u^{48} + \dots + 5u + 1 \rangle$$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ -2.46689u^{49} + 0.315634u^{48} + \dots - 30.2403u - 1.62809 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 2.46689u^{49} - 0.315634u^{48} + \dots + 30.2403u + 2.62809 \\ -2.59720u^{49} + 0.343485u^{48} + \dots - 31.1290u - 1.31245 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -0.315634u^{49} - 0.130315u^{48} + \dots - 9.70634u - 2.46689 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2.46689u^{49} - 0.315634u^{48} + \dots + 30.2403u + 2.62809 \\ -2.46689u^{49} + 0.315634u^{48} + \dots - 30.2403u - 1.62809 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.723740u^{49} - 0.524718u^{48} + \dots + 6.95916u - 5.96362 \\ 1.74315u^{49} + 0.209084u^{48} + \dots + 23.2812u + 8.59171 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1.29977u^{49} + 0.0121696u^{48} + \dots + 13.6811u - 0.964916 \\ -0.327667u^{49} - 0.224139u^{48} + \dots - 5.88790u + 1.64958 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.17574u^{49} + 0.670154u^{48} + \dots + 56.3848u + 11.9751 \\ -1.61868u^{49} + 0.605612u^{48} + \dots - 38.8939u - 4.19712 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2.16799u^{49} - 0.221391u^{48} + \dots + 28.3405u + 2.10337 \\ -1.19112u^{49} + 0.0824317u^{48} + \dots - 20.2477u - 1.18515 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1.17145u^{49} - 0.615972u^{48} + \dots - 14.7992u - 4.90764 \\ 1.33864u^{49} + 0.700909u^{48} + \dots + 28.4451u + 6.40340 \end{pmatrix}$$

(ii) Obstruction class = -1

$$\mathbf{(iii) } \text{Cusp Shapes} = 16.2604u^{49} - 4.35079u^{48} + \dots + 259.730u + 13.6919$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{50} - 37u^{49} + \dots - 1343488u + 65536$
$c_2, c_7$	$u^{50} + u^{49} + \dots + u + 1$
$c_3, c_6$	$u^{50} + u^{49} + \dots + u + 1$
$c_4, c_8$	$u^{50} + 5u^{48} + \dots + 5u + 1$
$c_5, c_{12}$	$u^{50} - 27u^{49} + \dots - 45312u + 2560$
$c_9, c_{11}$	$u^{50} + 2u^{49} + \dots - 284u + 148$
$c_{10}$	$u^{50} + 33u^{49} + \dots + 3584u + 256$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{50} + 15y^{49} + \cdots + 68719476736y + 4294967296$
$c_2, c_7$	$y^{50} - 23y^{49} + \cdots - 51y + 1$
$c_3, c_6$	$y^{50} + 5y^{49} + \cdots + 29y + 1$
$c_4, c_8$	$y^{50} + 10y^{49} + \cdots + 37y + 1$
$c_5, c_{12}$	$y^{50} + 35y^{49} + \cdots + 254345216y + 6553600$
$c_9, c_{11}$	$y^{50} - 12y^{49} + \cdots - 46320y + 21904$
$c_{10}$	$y^{50} + 7y^{49} + \cdots + 1769472y + 65536$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.643464 + 0.769213I$ $a = 1.00000$ $b = 1.166190 + 0.558776I$	$4.36390 - 1.77312I$	$8.40093 + 4.75657I$
$u = -0.643464 - 0.769213I$ $a = 1.00000$ $b = 1.166190 - 0.558776I$	$4.36390 + 1.77312I$	$8.40093 - 4.75657I$
$u = -0.209680 + 0.984180I$ $a = 1.00000$ $b = 0.982677 - 0.823149I$	$-0.65225 + 5.66298I$	$1.39055 - 3.29167I$
$u = -0.209680 - 0.984180I$ $a = 1.00000$ $b = 0.982677 + 0.823149I$	$-0.65225 - 5.66298I$	$1.39055 + 3.29167I$
$u = 0.111854 + 0.935193I$ $a = 1.00000$ $b = 0.014940 - 0.254880I$	$-2.13721 + 4.98350I$	$-0.46686 - 6.95288I$
$u = 0.111854 - 0.935193I$ $a = 1.00000$ $b = 0.014940 + 0.254880I$	$-2.13721 - 4.98350I$	$-0.46686 + 6.95288I$
$u = 0.454709 + 0.811898I$ $a = 1.00000$ $b = 0.73450 + 1.36481I$	$0.29883 + 6.52796I$	$4.59641 - 9.04204I$
$u = 0.454709 - 0.811898I$ $a = 1.00000$ $b = 0.73450 - 1.36481I$	$0.29883 - 6.52796I$	$4.59641 + 9.04204I$
$u = -0.792910 + 0.423437I$ $a = 1.00000$ $b = 1.176340 + 0.218285I$	$5.47703 - 0.93007I$	$13.31306 + 3.09237I$
$u = -0.792910 - 0.423437I$ $a = 1.00000$ $b = 1.176340 - 0.218285I$	$5.47703 + 0.93007I$	$13.31306 - 3.09237I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.892105 + 0.668186I$ $a = 1.00000$ $b = 1.277600 + 0.060374I$	$6.15364 - 7.17141I$	$12.2491 + 7.9503I$
$u = -0.892105 - 0.668186I$ $a = 1.00000$ $b = 1.277600 - 0.060374I$	$6.15364 + 7.17141I$	$12.2491 - 7.9503I$
$u = -0.726926 + 0.378293I$ $a = 1.00000$ $b = 0.262626 - 1.136960I$	$-1.59993 - 2.70489I$	$3.40729 + 2.86854I$
$u = -0.726926 - 0.378293I$ $a = 1.00000$ $b = 0.262626 + 1.136960I$	$-1.59993 + 2.70489I$	$3.40729 - 2.86854I$
$u = 0.727284 + 0.360560I$ $a = 1.00000$ $b = 0.620921 + 0.171349I$	$1.246370 + 0.482488I$	$7.31465 - 2.33574I$
$u = 0.727284 - 0.360560I$ $a = 1.00000$ $b = 0.620921 - 0.171349I$	$1.246370 - 0.482488I$	$7.31465 + 2.33574I$
$u = 0.909966 + 0.776093I$ $a = 1.00000$ $b = 1.241250 - 0.156499I$	$4.5544 + 15.8113I$	0
$u = 0.909966 - 0.776093I$ $a = 1.00000$ $b = 1.241250 + 0.156499I$	$4.5544 - 15.8113I$	0
$u = -0.324125 + 1.157810I$ $a = 1.00000$ $b = 0.79105 - 1.25368I$	$-2.24034 - 12.75630I$	0
$u = -0.324125 - 1.157810I$ $a = 1.00000$ $b = 0.79105 + 1.25368I$	$-2.24034 + 12.75630I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.952387 + 0.735226I$ $a = 1.00000$ $b = 0.892872 - 0.485258I$	$5.37270 - 1.91715I$	0
$u = 0.952387 - 0.735226I$ $a = 1.00000$ $b = 0.892872 + 0.485258I$	$5.37270 + 1.91715I$	0
$u = -0.338470 + 0.671302I$ $a = 1.00000$ $b = -0.063362 - 1.273950I$	$-4.46772 - 0.64019I$	$-2.99722 + 2.10098I$
$u = -0.338470 - 0.671302I$ $a = 1.00000$ $b = -0.063362 + 1.273950I$	$-4.46772 + 0.64019I$	$-2.99722 - 2.10098I$
$u = 0.394993 + 0.596716I$ $a = 1.00000$ $b = 0.933205 + 0.993015I$	$2.14090 + 1.30641I$	$7.07669 - 7.35081I$
$u = 0.394993 - 0.596716I$ $a = 1.00000$ $b = 0.933205 - 0.993015I$	$2.14090 - 1.30641I$	$7.07669 + 7.35081I$
$u = 1.026820 + 0.792152I$ $a = 1.00000$ $b = -0.027990 + 0.832206I$	$0.92663 - 2.16938I$	0
$u = 1.026820 - 0.792152I$ $a = 1.00000$ $b = -0.027990 - 0.832206I$	$0.92663 + 2.16938I$	0
$u = 0.641768 + 1.157350I$ $a = 1.00000$ $b = 0.186450 + 1.239270I$	$-6.86303 - 3.75834I$	0
$u = 0.641768 - 1.157350I$ $a = 1.00000$ $b = 0.186450 - 1.239270I$	$-6.86303 + 3.75834I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.901999 + 1.045100I$ $a = 1.00000$ $b = 0.293959 - 1.351620I$	$-3.65978 - 3.90185I$	0
$u = -0.901999 - 1.045100I$ $a = 1.00000$ $b = 0.293959 + 1.351620I$	$-3.65978 + 3.90185I$	0
$u = 1.000200 + 0.965591I$ $a = 1.00000$ $b = 0.62065 + 1.29063I$	$2.08227 + 7.18268I$	0
$u = 1.000200 - 0.965591I$ $a = 1.00000$ $b = 0.62065 - 1.29063I$	$2.08227 - 7.18268I$	0
$u = -0.84268 + 1.17438I$ $a = 1.00000$ $b = 0.057255 - 1.186230I$	$-5.01603 - 5.20693I$	0
$u = -0.84268 - 1.17438I$ $a = 1.00000$ $b = 0.057255 + 1.186230I$	$-5.01603 + 5.20693I$	0
$u = 0.94208 + 1.19268I$ $a = 1.00000$ $b = 0.694329 + 1.176010I$	$2.17532 + 8.34585I$	0
$u = 0.94208 - 1.19268I$ $a = 1.00000$ $b = 0.694329 - 1.176010I$	$2.17532 - 8.34585I$	0
$u = -0.195613 + 0.426357I$ $a = 1.00000$ $b = -0.216338 + 0.544332I$	$0.50466 + 1.79559I$	$3.46378 - 3.10051I$
$u = -0.195613 - 0.426357I$ $a = 1.00000$ $b = -0.216338 - 0.544332I$	$0.50466 - 1.79559I$	$3.46378 + 3.10051I$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.015924 + 0.425046I$ $a = 1.00000$ $b = 0.06103 + 1.82231I$	$-2.19516 - 9.28833I$	$-7.03273 + 5.74266I$
$u = -0.015924 - 0.425046I$ $a = 1.00000$ $b = 0.06103 - 1.82231I$	$-2.19516 + 9.28833I$	$-7.03273 - 5.74266I$
$u = 1.07924 + 1.18155I$ $a = 1.00000$ $b = 0.62297 + 1.37503I$	$2.04993 + 13.72580I$	0
$u = 1.07924 - 1.18155I$ $a = 1.00000$ $b = 0.62297 - 1.37503I$	$2.04993 - 13.72580I$	0
$u = -1.12239 + 1.17529I$ $a = 1.00000$ $b = 0.584184 - 1.132490I$	$3.25548 - 3.52615I$	0
$u = -1.12239 - 1.17529I$ $a = 1.00000$ $b = 0.584184 + 1.132490I$	$3.25548 + 3.52615I$	0
$u = -1.10707 + 1.25249I$ $a = 1.00000$ $b = 0.63231 - 1.34103I$	$0.8116 - 22.3107I$	0
$u = -1.10707 - 1.25249I$ $a = 1.00000$ $b = 0.63231 + 1.34103I$	$0.8116 + 22.3107I$	0
$u = -0.127947 + 0.260665I$ $a = 1.00000$ $b = -0.03961 - 2.00425I$	$-0.245250 - 0.513655I$	$1.5494 + 26.0988I$
$u = -0.127947 - 0.260665I$ $a = 1.00000$ $b = -0.03961 + 2.00425I$	$-0.245250 + 0.513655I$	$1.5494 - 26.0988I$

$$\text{II. } I_2^u = \langle 1.63 \times 10^{1735} u^{155} - 9.73 \times 10^{1735} u^{154} + \dots + 1.03 \times 10^{1738} b + 8.61 \times 10^{1738}, 1.64 \times 10^{1736} u^{155} - 2.99 \times 10^{1735} u^{154} + \dots + 4.74 \times 10^{1739} a + 1.16 \times 10^{1741}, u^{156} - 6u^{155} + \dots + 6790u + 1288 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_5 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_1 &= \begin{pmatrix} -0.000346599u^{155} + 0.0000630564u^{154} + \dots - 49.7051u - 24.5222 \\ -0.00158166u^{155} + 0.00944050u^{154} + \dots - 37.3726u - 8.35500 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_2 &= \begin{pmatrix} 0.00204685u^{155} - 0.0143357u^{154} + \dots + 1.80622u - 13.5699 \\ -0.00179839u^{155} + 0.0108199u^{154} + \dots - 40.1971u - 8.30601 \end{pmatrix} \\ a_8 &= \begin{pmatrix} 0.0101130u^{155} - 0.0591571u^{154} + \dots + 470.090u + 66.8018 \\ -0.00337653u^{155} + 0.0205497u^{154} + \dots - 77.3509u - 11.1044 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} 0.00123506u^{155} - 0.00937744u^{154} + \dots - 12.3325u - 16.1672 \\ -0.00158166u^{155} + 0.00944050u^{154} + \dots - 37.3726u - 8.35500 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 0.00847347u^{155} - 0.0528439u^{154} + \dots + 95.8064u - 2.97935 \\ 0.000148000u^{155} - 0.00226143u^{154} + \dots - 32.9533u - 15.8318 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -0.000693818u^{155} + 0.00122309u^{154} + \dots - 91.8035u - 44.3276 \\ 0.00200736u^{155} - 0.0119787u^{154} + \dots + 42.5562u + 9.89170 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0.0195170u^{155} - 0.119912u^{154} + \dots + 571.122u + 56.6772 \\ -0.00440003u^{155} + 0.0264988u^{154} + \dots - 105.520u - 18.8433 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 0.00770984u^{155} - 0.0439725u^{154} + \dots + 433.571u + 68.3438 \\ -0.000999740u^{155} + 0.00558199u^{154} + \dots - 45.2645u - 10.1410 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 0.0137587u^{155} - 0.0844136u^{154} + \dots - 63.9818u - 42.9558 \\ -0.00167335u^{155} + 0.0107474u^{154} + \dots - 17.9859u + 5.76366 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.0125289u^{155} + 0.0675500u^{154} + \dots - 444.155u - 151.722$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$4(2u^{78} + 47u^{77} + \dots + 1391u + 71)^2$
$c_2, c_7$	$u^{156} - 2u^{155} + \dots - 932767u - 85726$
$c_3, c_6$	$2(2u^{156} - 11u^{155} + \dots - 10689u + 882)$
$c_4, c_8$	$u^{156} - 6u^{155} + \dots + 6790u + 1288$
$c_5, c_{12}$	$4(2u^{78} + 29u^{77} + \dots + 2u - 1)^2$
$c_9, c_{11}$	$2(2u^{156} + 9u^{155} + \dots - 1.96661 \times 10^{11}u + 9.82273 \times 10^9)$
$c_{10}$	$4(2u^{78} - 33u^{77} + \dots - 13u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$16(4y^{78} + 67y^{77} + \dots - 256583y + 5041)^2$
$c_2, c_7$	$y^{156} + 6y^{155} + \dots - 628310042425y + 7348947076$
$c_3, c_6$	$4(4y^{156} - y^{155} + \dots - 5.42417 \times 10^7 y + 777924)$
$c_4, c_8$	$y^{156} - 6y^{155} + \dots + 68705644y + 1658944$
$c_5, c_{12}$	$16(4y^{78} + 191y^{77} + \dots + 2y + 1)^2$
$c_9, c_{11}$	$4(4y^{156} - 225y^{155} + \dots - 3.03964 \times 10^{22}y + 9.64861 \times 10^{19})$
$c_{10}$	$16(4y^{78} - 37y^{77} + \dots - 57y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.479961 + 0.895187I$ $a = -1.50431 + 0.97086I$ $b = -0.315677 - 1.273790I$	$-2.85447 + 1.56373I$	0
$u = 0.479961 - 0.895187I$ $a = -1.50431 - 0.97086I$ $b = -0.315677 + 1.273790I$	$-2.85447 - 1.56373I$	0
$u = -0.878989 + 0.520454I$ $a = -1.203710 + 0.138500I$ $b = -1.112130 - 0.148145I$	$5.93146 - 6.69998I$	0
$u = -0.878989 - 0.520454I$ $a = -1.203710 - 0.138500I$ $b = -1.112130 + 0.148145I$	$5.93146 + 6.69998I$	0
$u = 0.853357 + 0.442102I$ $a = 0.583658 + 0.213614I$ $b = 1.162010 + 0.248983I$	$1.021380 - 0.881637I$	0
$u = 0.853357 - 0.442102I$ $a = 0.583658 - 0.213614I$ $b = 1.162010 - 0.248983I$	$1.021380 + 0.881637I$	0
$u = -0.797756 + 0.530173I$ $a = -0.694107 + 0.549397I$ $b = -0.573917 - 0.078814I$	$-1.06336 - 2.97038I$	0
$u = -0.797756 - 0.530173I$ $a = -0.694107 - 0.549397I$ $b = -0.573917 + 0.078814I$	$-1.06336 + 2.97038I$	0
$u = -0.919160 + 0.498496I$ $a = 1.040280 - 0.538311I$ $b = 0.913302 - 0.454713I$	$1.34644 - 8.47535I$	0
$u = -0.919160 - 0.498496I$ $a = 1.040280 + 0.538311I$ $b = 0.913302 + 0.454713I$	$1.34644 + 8.47535I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.015940 + 0.256287I$ $a = 1.09738 + 1.04498I$ $b = 0.520510 + 0.726816I$	$4.28368 + 0.07891I$	0
$u = 1.015940 - 0.256287I$ $a = 1.09738 - 1.04498I$ $b = 0.520510 - 0.726816I$	$4.28368 - 0.07891I$	0
$u = 0.425921 + 0.821163I$ $a = 0.487008 - 1.254460I$ $b = 0.0715166 + 0.0651013I$	$1.54820 - 2.23571I$	0
$u = 0.425921 - 0.821163I$ $a = 0.487008 + 1.254460I$ $b = 0.0715166 - 0.0651013I$	$1.54820 + 2.23571I$	0
$u = 0.898223 + 0.186166I$ $a = -0.09867 + 1.66261I$ $b = -0.402829 + 0.593899I$	$3.86806 + 1.53815I$	0
$u = 0.898223 - 0.186166I$ $a = -0.09867 - 1.66261I$ $b = -0.402829 - 0.593899I$	$3.86806 - 1.53815I$	0
$u = 0.319775 + 1.040490I$ $a = 0.398803 - 0.063093I$ $b = 0.44687 + 1.40191I$	$-3.55539 + 7.17927I$	0
$u = 0.319775 - 1.040490I$ $a = 0.398803 + 0.063093I$ $b = 0.44687 - 1.40191I$	$-3.55539 - 7.17927I$	0
$u = -1.068180 + 0.277813I$ $a = -0.15211 - 1.41616I$ $b = -0.349222 - 0.646022I$	$2.78026 - 9.68554I$	0
$u = -1.068180 - 0.277813I$ $a = -0.15211 + 1.41616I$ $b = -0.349222 + 0.646022I$	$2.78026 + 9.68554I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.049763 + 1.102890I$ $a = -0.401358 + 0.330207I$ $b = -0.344556 - 1.183320I$	$-4.65175 + 0.36929I$	0
$u = 0.049763 - 1.102890I$ $a = -0.401358 - 0.330207I$ $b = -0.344556 + 1.183320I$	$-4.65175 - 0.36929I$	0
$u = -0.879358 + 0.042817I$ $a = 1.30537 - 2.10299I$ $b = 0.225703 - 0.933087I$	$-0.214354 + 0.639866I$	0
$u = -0.879358 - 0.042817I$ $a = 1.30537 + 2.10299I$ $b = 0.225703 + 0.933087I$	$-0.214354 - 0.639866I$	0
$u = 1.101330 + 0.231138I$ $a = 0.057837 + 1.277300I$ $b = -0.285328 + 0.933415I$	$2.61817 - 2.36056I$	0
$u = 1.101330 - 0.231138I$ $a = 0.057837 - 1.277300I$ $b = -0.285328 - 0.933415I$	$2.61817 + 2.36056I$	0
$u = -0.803023 + 0.297798I$ $a = 0.40574 + 1.39575I$ $b = 0.265780 + 1.020500I$	$-0.86266 + 2.73725I$	0
$u = -0.803023 - 0.297798I$ $a = 0.40574 - 1.39575I$ $b = 0.265780 - 1.020500I$	$-0.86266 - 2.73725I$	0
$u = 0.262452 + 0.806281I$ $a = -0.885768 + 0.701100I$ $b = -0.573917 + 0.078814I$	$-1.06336 + 2.97038I$	0
$u = 0.262452 - 0.806281I$ $a = -0.885768 - 0.701100I$ $b = -0.573917 - 0.078814I$	$-1.06336 - 2.97038I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.740443 + 0.887906I$ $a = -1.60594 + 0.05731I$ $b = -0.354683 + 1.128330I$	$-3.97260 - 6.43264I$	0
$u = -0.740443 - 0.887906I$ $a = -1.60594 - 0.05731I$ $b = -0.354683 - 1.128330I$	$-3.97260 + 6.43264I$	0
$u = -0.774548 + 0.870533I$ $a = -1.337020 + 0.116561I$ $b = -0.690391 + 1.231120I$	$-2.00603 - 7.84989I$	0
$u = -0.774548 - 0.870533I$ $a = -1.337020 - 0.116561I$ $b = -0.690391 - 1.231120I$	$-2.00603 + 7.84989I$	0
$u = 0.840314 + 0.825520I$ $a = -1.039640 + 0.096434I$ $b = -1.002090 + 0.203248I$	$2.16176 + 7.58809I$	0
$u = 0.840314 - 0.825520I$ $a = -1.039640 - 0.096434I$ $b = -1.002090 - 0.203248I$	$2.16176 - 7.58809I$	0
$u = 0.698682 + 0.954916I$ $a = 1.56245 - 0.27544I$ $b = 0.361274 + 1.324060I$	$-3.98422 + 12.55590I$	0
$u = 0.698682 - 0.954916I$ $a = 1.56245 + 0.27544I$ $b = 0.361274 - 1.324060I$	$-3.98422 - 12.55590I$	0
$u = 1.18829$ $a = 0.448510$ $b = 0.520389$	1.95670	0
$u = 0.797052 + 0.078604I$ $a = -1.24946 - 0.88650I$ $b = -0.954726 - 0.270295I$	$2.17712 - 2.41882I$	0



Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.797052 - 0.078604I$ $a = -1.24946 + 0.88650I$ $b = -0.954726 + 0.270295I$	$2.17712 + 2.41882I$	0
$u = -0.886514 + 0.828920I$ $a = 1.322770 - 0.203441I$ $b = 0.421697 - 1.345190I$	$-4.00440 - 4.24597I$	0
$u = -0.886514 - 0.828920I$ $a = 1.322770 + 0.203441I$ $b = 0.421697 + 1.345190I$	$-4.00440 + 4.24597I$	0
$u = -0.174617 + 0.759086I$ $a = -0.596104 + 0.082537I$ $b = -0.317853 - 1.311150I$	$-2.97182 - 3.18788I$	0
$u = -0.174617 - 0.759086I$ $a = -0.596104 - 0.082537I$ $b = -0.317853 + 1.311150I$	$-2.97182 + 3.18788I$	0
$u = -0.687839 + 1.013370I$ $a = 0.758242 + 0.392365I$ $b = 0.913302 - 0.454713I$	$1.34644 - 8.47535I$	0
$u = -0.687839 - 1.013370I$ $a = 0.758242 - 0.392365I$ $b = 0.913302 + 0.454713I$	$1.34644 + 8.47535I$	0
$u = -0.926201 + 0.804801I$ $a = -0.532357 - 0.377712I$ $b = -0.954726 + 0.270295I$	$2.17712 + 2.41882I$	0
$u = -0.926201 - 0.804801I$ $a = -0.532357 + 0.377712I$ $b = -0.954726 - 0.270295I$	$2.17712 - 2.41882I$	0
$u = -0.095480 + 0.765392I$ $a = -0.969354 + 0.245670I$ $b = -0.720411$	$-3.19854$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.095480 - 0.765392I$ $a = -0.969354 - 0.245670I$ $b = -0.720411$	-3.19854	0
$u = -0.953234 + 0.777211I$ $a = -0.953664 + 0.088459I$ $b = -1.002090 - 0.203248I$	$2.16176 - 7.58809I$	0
$u = -0.953234 - 0.777211I$ $a = -0.953664 - 0.088459I$ $b = -1.002090 + 0.203248I$	$2.16176 + 7.58809I$	0
$u = 0.985966 + 0.748216I$ $a = -0.819909 + 0.094339I$ $b = -1.112130 + 0.148145I$	$5.93146 + 6.69998I$	0
$u = 0.985966 - 0.748216I$ $a = -0.819909 - 0.094339I$ $b = -1.112130 - 0.148145I$	$5.93146 - 6.69998I$	0
$u = 1.132990 + 0.505041I$ $a = -0.492554 - 0.248408I$ $b = -0.592022 - 1.242280I$	$-0.84280 + 8.08701I$	0
$u = 1.132990 - 0.505041I$ $a = -0.492554 + 0.248408I$ $b = -0.592022 + 1.242280I$	$-0.84280 - 8.08701I$	0
$u = 1.237540 + 0.134389I$ $a = 0.268939 - 0.692748I$ $b = 0.0715166 - 0.0651013I$	$1.54820 + 2.23571I$	0
$u = 1.237540 - 0.134389I$ $a = 0.268939 + 0.692748I$ $b = 0.0715166 + 0.0651013I$	$1.54820 - 2.23571I$	0
$u = -0.741466 + 0.999991I$ $a = 0.192043 + 0.660636I$ $b = 0.265780 - 1.020500I$	$-0.86266 - 2.73725I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.741466 - 0.999991I$		
$a = 0.192043 - 0.660636I$	$-0.86266 + 2.73725I$	0
$b = 0.265780 + 1.020500I$		
$u = -0.635285 + 1.075650I$		
$a = -1.144020 + 0.110753I$	$-6.63749 - 4.04388I$	0
$b = -0.403537 + 1.180610I$		
$u = -0.635285 - 1.075650I$		
$a = -1.144020 - 0.110753I$	$-6.63749 + 4.04388I$	0
$b = -0.403537 - 1.180610I$		
$u = 1.260380 + 0.147986I$		
$a = 0.653556 + 0.968643I$	$1.08265 - 2.16413I$	0
$b = 0.082652 + 0.796113I$		
$u = 1.260380 - 0.147986I$		
$a = 0.653556 - 0.968643I$	$1.08265 + 2.16413I$	0
$b = 0.082652 - 0.796113I$		
$u = -1.290730 + 0.215380I$		
$a = -0.766949 + 1.023580I$	$3.16527 - 8.27221I$	0
$b = -0.314582 + 0.971329I$		
$u = -1.290730 - 0.215380I$		
$a = -0.766949 - 1.023580I$	$3.16527 + 8.27221I$	0
$b = -0.314582 - 0.971329I$		
$u = -0.432602 + 0.530204I$		
$a = -1.61856 - 0.81628I$	$-0.84280 - 8.08701I$	0
$b = -0.592022 + 1.242280I$		
$u = -0.432602 - 0.530204I$		
$a = -1.61856 + 0.81628I$	$-0.84280 + 8.08701I$	0
$b = -0.592022 - 1.242280I$		
$u = -0.213303 + 1.322530I$		
$a = -1.062750 + 0.027144I$	$-5.34834 - 2.90068I$	0
$b = -0.724784 + 1.022780I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.213303 - 1.322530I$ $a = -1.062750 - 0.027144I$ $b = -0.724784 - 1.022780I$	$-5.34834 + 2.90068I$	0
$u = 0.403630 + 0.440325I$ $a = 1.51094 - 0.55299I$ $b = 1.162010 + 0.248983I$	$1.021380 - 0.881637I$	0
$u = 0.403630 - 0.440325I$ $a = 1.51094 + 0.55299I$ $b = 1.162010 - 0.248983I$	$1.021380 + 0.881637I$	0
$u = 0.19079 + 1.41130I$ $a = -0.940343 + 0.024017I$ $b = -0.724784 - 1.022780I$	$-5.34834 + 2.90068I$	0
$u = 0.19079 - 1.41130I$ $a = -0.940343 - 0.024017I$ $b = -0.724784 + 1.022780I$	$-5.34834 - 2.90068I$	0
$u = -0.384153 + 0.426220I$ $a = -1.48582 + 1.22242I$ $b = -0.344556 + 1.183320I$	$-4.65175 - 0.36929I$	$-3.63498 + 0.I$
$u = -0.384153 - 0.426220I$ $a = -1.48582 - 1.22242I$ $b = -0.344556 - 1.183320I$	$-4.65175 + 0.36929I$	$-3.63498 + 0.I$
$u = 0.60765 + 1.30092I$ $a = -0.865996 + 0.083837I$ $b = -0.403537 - 1.180610I$	$-6.63749 + 4.04388I$	0
$u = 0.60765 - 1.30092I$ $a = -0.865996 - 0.083837I$ $b = -0.403537 + 1.180610I$	$-6.63749 - 4.04388I$	0
$u = -0.23154 + 1.42010I$ $a = 0.035378 - 0.781299I$ $b = -0.285328 + 0.933415I$	$2.61817 - 2.36056I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.23154 - 1.42010I$ $a = 0.035378 + 0.781299I$ $b = -0.285328 - 0.933415I$	$2.61817 + 2.36056I$	0
$u = 0.548296 + 0.111887I$ $a = -2.67612 - 0.90805I$ $b = -0.366656 + 0.571064I$	$4.29109 + 5.26116I$	$9.28004 - 1.66680I$
$u = 0.548296 - 0.111887I$ $a = -2.67612 + 0.90805I$ $b = -0.366656 - 0.571064I$	$4.29109 - 5.26116I$	$9.28004 + 1.66680I$
$u = -1.39210 + 0.45988I$ $a = 0.293750 - 0.010120I$ $b = 0.526504 + 0.674952I$	$4.41001 + 4.13048I$	0
$u = -1.39210 - 0.45988I$ $a = 0.293750 + 0.010120I$ $b = 0.526504 - 0.674952I$	$4.41001 - 4.13048I$	0
$u = 0.532960$ $a = 2.22960$ $b = 0.520389$	1.95670	8.30610
$u = -0.491251 + 0.194866I$ $a = 2.35079 + 2.41938I$ $b = 0.279715 - 0.895923I$	$0.29144 - 4.39387I$	$3.3530 + 14.1192I$
$u = -0.491251 - 0.194866I$ $a = 2.35079 - 2.41938I$ $b = 0.279715 + 0.895923I$	$0.29144 + 4.39387I$	$3.3530 - 14.1192I$
$u = 0.68038 + 1.31757I$ $a = 0.478654 - 0.709418I$ $b = 0.082652 + 0.796113I$	$1.08265 - 2.16413I$	0
$u = 0.68038 - 1.31757I$ $a = 0.478654 + 0.709418I$ $b = 0.082652 - 0.796113I$	$1.08265 + 2.16413I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.273976 + 0.391212I$ $a = -8.50504 - 0.10618I$ $b = 0.065464 + 0.938318I$	$0.17888 - 1.82981I$	$-51.4632 + 40.8262I$
$u = -0.273976 - 0.391212I$ $a = -8.50504 + 0.10618I$ $b = 0.065464 - 0.938318I$	$0.17888 + 1.82981I$	$-51.4632 - 40.8262I$
$u = -0.39815 + 1.47503I$ $a = -0.035570 - 0.599352I$ $b = -0.402829 + 0.593899I$	$3.86806 + 1.53815I$	0
$u = -0.39815 - 1.47503I$ $a = -0.035570 + 0.599352I$ $b = -0.402829 - 0.593899I$	$3.86806 - 1.53815I$	0
$u = 0.041437 + 0.466906I$ $a = -1.64600 + 0.22791I$ $b = -0.317853 + 1.311150I$	$-2.97182 + 3.18788I$	$-1.27247 - 9.49415I$
$u = 0.041437 - 0.466906I$ $a = -1.64600 - 0.22791I$ $b = -0.317853 - 1.311150I$	$-2.97182 - 3.18788I$	$-1.27247 + 9.49415I$
$u = 0.193175 + 0.394775I$ $a = 2.44627 + 0.38702I$ $b = 0.44687 + 1.40191I$	$-3.55539 + 7.17927I$	$-1.80110 - 4.96138I$
$u = 0.193175 - 0.394775I$ $a = 2.44627 - 0.38702I$ $b = 0.44687 - 1.40191I$	$-3.55539 - 7.17927I$	$-1.80110 + 4.96138I$
$u = 0.93412 + 1.25420I$ $a = -0.742290 + 0.064713I$ $b = -0.690391 - 1.231120I$	$-2.00603 + 7.84989I$	0
$u = 0.93412 - 1.25420I$ $a = -0.742290 - 0.064713I$ $b = -0.690391 + 1.231120I$	$-2.00603 - 7.84989I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.273496 + 0.334247I$ $a = -0.32690 - 3.69989I$ $b = -0.306294 + 0.673772I$	$3.37148 - 0.42279I$	$10.67920 + 9.23860I$
$u = -0.273496 - 0.334247I$ $a = -0.32690 + 3.69989I$ $b = -0.306294 - 0.673772I$	$3.37148 + 0.42279I$	$10.67920 - 9.23860I$
$u = -0.404274 + 0.149178I$ $a = 3.40022 + 0.11714I$ $b = 0.526504 + 0.674952I$	$4.41001 + 4.13048I$	$12.00147 - 6.90127I$
$u = -0.404274 - 0.149178I$ $a = 3.40022 - 0.11714I$ $b = 0.526504 - 0.674952I$	$4.41001 - 4.13048I$	$12.00147 + 6.90127I$
$u = -0.119964 + 0.411107I$ $a = -0.491215 + 0.559006I$ $b = -1.24456 - 1.70824I$	$0.006574 - 0.227616I$	$1.8034 - 40.7693I$
$u = -0.119964 - 0.411107I$ $a = -0.491215 - 0.559006I$ $b = -1.24456 + 1.70824I$	$0.006574 + 0.227616I$	$1.8034 + 40.7693I$
$u = 0.327035 + 0.276267I$ $a = -1.72607 + 4.94236I$ $b = -0.313034 - 0.942204I$	$1.92493 + 12.66990I$	$5.2608 - 13.7782I$
$u = 0.327035 - 0.276267I$ $a = -1.72607 - 4.94236I$ $b = -0.313034 + 0.942204I$	$1.92493 - 12.66990I$	$5.2608 + 13.7782I$
$u = 0.55591 + 1.47045I$ $a = -0.074979 + 0.698079I$ $b = -0.349222 - 0.646022I$	$2.78026 - 9.68554I$	0
$u = 0.55591 - 1.47045I$ $a = -0.074979 - 0.698079I$ $b = -0.349222 + 0.646022I$	$2.78026 + 9.68554I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.16123 + 1.06821I$ $a = -0.0478892 + 0.1124320I$ $b = -0.119517 + 1.210060I$	$-0.70607 + 1.63222I$	0
$u = -1.16123 - 1.06821I$ $a = -0.0478892 - 0.1124320I$ $b = -0.119517 - 1.210060I$	$-0.70607 - 1.63222I$	0
$u = 1.20710 + 1.01716I$ $a = -1.010050 - 0.187305I$ $b = -0.59012 - 1.29731I$	$2.34263 + 12.68040I$	0
$u = 1.20710 - 1.01716I$ $a = -1.010050 + 0.187305I$ $b = -0.59012 + 1.29731I$	$2.34263 - 12.68040I$	0
$u = -1.36571 + 0.79730I$ $a = -0.335095 - 0.113703I$ $b = -0.366656 - 0.571064I$	$4.29109 - 5.26116I$	0
$u = -1.36571 - 0.79730I$ $a = -0.335095 + 0.113703I$ $b = -0.366656 + 0.571064I$	$4.29109 + 5.26116I$	0
$u = 0.84705 + 1.34288I$ $a = 0.477905 - 0.455087I$ $b = 0.520510 + 0.726816I$	$4.28368 + 0.07891I$	0
$u = 0.84705 - 1.34288I$ $a = 0.477905 + 0.455087I$ $b = 0.520510 - 0.726816I$	$4.28368 - 0.07891I$	0
$u = 1.32608 + 0.90264I$ $a = -0.023695 + 0.268185I$ $b = -0.306294 + 0.673772I$	$3.37148 - 0.42279I$	0
$u = 1.32608 - 0.90264I$ $a = -0.023695 - 0.268185I$ $b = -0.306294 - 0.673772I$	$3.37148 + 0.42279I$	0



Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.05646 + 1.21992I$ $a = -1.081890 - 0.015420I$ $b = -0.576006 + 1.262350I$	$-1.13829 - 13.26270I$	0
$u = -1.05646 - 1.21992I$ $a = -1.081890 + 0.015420I$ $b = -0.576006 - 1.262350I$	$-1.13829 + 13.26270I$	0
$u = -1.02871 + 1.25347I$ $a = -0.957138 - 0.177493I$ $b = -0.59012 + 1.29731I$	$2.34263 - 12.68040I$	0
$u = -1.02871 - 1.25347I$ $a = -0.957138 + 0.177493I$ $b = -0.59012 - 1.29731I$	$2.34263 + 12.68040I$	0
$u = -1.00402 + 1.27683I$ $a = 0.738518 + 0.113583I$ $b = 0.421697 - 1.345190I$	$-4.00440 - 4.24597I$	0
$u = -1.00402 - 1.27683I$ $a = 0.738518 - 0.113583I$ $b = 0.421697 + 1.345190I$	$-4.00440 + 4.24597I$	0
$u = -0.177799 + 0.284302I$ $a = 0.23215 - 6.03439I$ $b = -0.327024 + 0.965735I$	$2.80080 - 4.67456I$	$10.8864 + 12.5236I$
$u = -0.177799 - 0.284302I$ $a = 0.23215 + 6.03439I$ $b = -0.327024 - 0.965735I$	$2.80080 + 4.67456I$	$10.8864 - 12.5236I$
$u = 0.76946 + 1.48634I$ $a = -0.468819 + 0.625689I$ $b = -0.314582 - 0.971329I$	$3.16527 + 8.27221I$	0
$u = 0.76946 - 1.48634I$ $a = -0.468819 - 0.625689I$ $b = -0.314582 + 0.971329I$	$3.16527 - 8.27221I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.170883 + 0.269002I$ $a = -0.887022 + 1.009440I$ $b = -1.24456 + 1.70824I$	$0.006574 + 0.227616I$	$1.8034 + 40.7693I$
$u = -0.170883 - 0.269002I$ $a = -0.887022 - 1.009440I$ $b = -1.24456 - 1.70824I$	$0.006574 - 0.227616I$	$1.8034 - 40.7693I$
$u = 1.16179 + 1.30353I$ $a = -0.924120 - 0.013171I$ $b = -0.576006 - 1.262350I$	$-1.13829 + 13.26270I$	0
$u = 1.16179 - 1.30353I$ $a = -0.924120 + 0.013171I$ $b = -0.576006 + 1.262350I$	$-1.13829 - 13.26270I$	0
$u = -1.62628 + 0.73043I$ $a = 0.206579 + 0.212607I$ $b = 0.279715 + 0.895923I$	$0.29144 + 4.39387I$	0
$u = -1.62628 - 0.73043I$ $a = 0.206579 - 0.212607I$ $b = 0.279715 - 0.895923I$	$0.29144 - 4.39387I$	0
$u = -0.064491 + 0.181715I$ $a = -3.20664 + 7.52841I$ $b = -0.119517 - 1.210060I$	$-0.70607 - 1.63222I$	$4.82942 + 8.80654I$
$u = -0.064491 - 0.181715I$ $a = -3.20664 - 7.52841I$ $b = -0.119517 + 1.210060I$	$-0.70607 + 1.63222I$	$4.82942 - 8.80654I$
$u = -1.59111 + 0.88066I$ $a = -0.469289 + 0.302872I$ $b = -0.315677 + 1.273790I$	$-2.85447 - 1.56373I$	0
$u = -1.59111 - 0.88066I$ $a = -0.469289 - 0.302872I$ $b = -0.315677 - 1.273790I$	$-2.85447 + 1.56373I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.125336 + 0.097188I$		
$a = 10.3674 - 21.8568I$	$0.41240 + 2.22393I$	$-7.29347 - 8.95816I$
$b = 0.088562 + 0.896331I$		
$u = 0.125336 - 0.097188I$		
$a = 10.3674 + 21.8568I$	$0.41240 - 2.22393I$	$-7.29347 + 8.95816I$
$b = 0.088562 - 0.896331I$		
$u = 1.13823 + 1.46836I$		
$a = -0.621895 + 0.022192I$	$-3.97260 + 6.43264I$	0
$b = -0.354683 - 1.128330I$		
$u = 1.13823 - 1.46836I$		
$a = -0.621895 - 0.022192I$	$-3.97260 - 6.43264I$	0
$b = -0.354683 + 1.128330I$		
$u = 1.35467 + 1.29957I$		
$a = 0.620731 + 0.109425I$	$-3.98422 + 12.55590I$	0
$b = 0.361274 + 1.324060I$		
$u = 1.35467 - 1.29957I$		
$a = 0.620731 - 0.109425I$	$-3.98422 - 12.55590I$	0
$b = 0.361274 - 1.324060I$		
$u = 1.67431 + 1.13891I$		
$a = 0.006366 + 0.165472I$	$2.80080 - 4.67456I$	0
$b = -0.327024 + 0.965735I$		
$u = 1.67431 - 1.13891I$		
$a = 0.006366 - 0.165472I$	$2.80080 + 4.67456I$	0
$b = -0.327024 - 0.965735I$		
$u = -1.05784 + 1.90517I$		
$a = 0.213067 + 0.343259I$	$-0.214354 + 0.639866I$	0
$b = 0.225703 - 0.933087I$		
$u = -1.05784 - 1.90517I$		
$a = 0.213067 - 0.343259I$	$-0.214354 - 0.639866I$	0
$b = 0.225703 + 0.933087I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.92990 + 1.13947I$	$1.92493 + 12.66990I$	0
$a = -0.062981 - 0.180337I$		
$b = -0.313034 - 0.942204I$		
$u = -1.92990 - 1.13947I$	$1.92493 - 12.66990I$	0
$a = -0.062981 + 0.180337I$		
$b = -0.313034 + 0.942204I$		
$u = 3.42362 + 1.73184I$	$0.41240 - 2.22393I$	0
$a = 0.0177160 - 0.0373491I$		
$b = 0.088562 - 0.896331I$		
$u = 3.42362 - 1.73184I$	$0.41240 + 2.22393I$	0
$a = 0.0177160 + 0.0373491I$		
$b = 0.088562 + 0.896331I$		
$u = 2.37172 + 3.29818I$	$0.17888 + 1.82981I$	0
$a = -0.1175590 - 0.0014677I$		
$b = 0.065464 - 0.938318I$		
$u = 2.37172 - 3.29818I$	$0.17888 - 1.82981I$	0
$a = -0.1175590 + 0.0014677I$		
$b = 0.065464 + 0.938318I$		

$$\text{III. } I_3^u = \langle -5.52 \times 10^{28} u^{32} + 2.59 \times 10^{28} u^{31} + \dots + 5.80 \times 10^{28} b - 5.01 \times 10^{27}, a + 1, u^{33} + 5u^{31} + \dots + 4u + 1 \rangle$$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -1 \\ 0.951964u^{32} - 0.446840u^{31} + \dots - 2.06786u + 0.0863895 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -0.951964u^{32} + 0.446840u^{31} + \dots + 2.06786u - 1.08639 \\ 0.918252u^{32} - 0.501484u^{31} + \dots - 2.90326u - 0.360451 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -0.446840u^{32} + 0.0337128u^{31} + \dots - 2.72147u - 0.951964 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.951964u^{32} + 0.446840u^{31} + \dots + 2.06786u - 1.08639 \\ 0.951964u^{32} - 0.446840u^{31} + \dots - 2.06786u + 0.0863895 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 1.32269u^{32} - 0.513435u^{31} + \dots + 3.38292u + 0.101967 \\ -0.370724u^{32} + 0.0665946u^{31} + \dots - 5.45078u + 0.984423 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.112955u^{32} - 0.130314u^{31} + \dots - 1.88373u - 0.604599 \\ 0.218417u^{32} - 0.192748u^{31} + \dots + 0.199599u + 0.800773 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.172309u^{32} - 0.0566887u^{31} + \dots + 12.9481u + 1.16770 \\ -0.0583181u^{32} + 0.439758u^{31} + \dots - 10.4006u - 1.51968 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.673417u^{32} + 0.306715u^{31} + \dots + 2.79891u - 0.572955 \\ 0.568895u^{32} - 0.174923u^{31} + \dots - 1.25992u + 0.200380 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1.05987u^{32} - 0.239711u^{31} + \dots + 4.85356u + 1.60317 \\ -0.894227u^{32} + 0.157890u^{31} + \dots - 6.15318u - 0.927171 \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = 8.95876u^{32} - 2.84222u^{31} + \dots - 12.0440u + 4.31329$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{33} - 18u^{32} + \dots - 90u + 25$
$c_2, c_7$	$u^{33} - u^{32} + \dots + 2u - 1$
$c_3, c_6$	$u^{33} - u^{32} + \dots + 8u - 1$
$c_4, c_8$	$u^{33} + 5u^{31} + \dots + 4u + 1$
$c_5$	$u^{33} + 8u^{32} + \dots - 45u - 11$
$c_9, c_{11}$	$u^{33} - 2u^{32} + \dots - 28u - 4$
$c_{10}$	$u^{33} - 16u^{32} + \dots + u - 1$
$c_{12}$	$u^{33} - 8u^{32} + \dots - 45u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{33} - 4y^{32} + \dots - 3500y - 625$
$c_2, c_7$	$y^{33} + y^{32} + \dots + 22y - 1$
$c_3, c_6$	$y^{33} + y^{32} + \dots - 6y - 1$
$c_4, c_8$	$y^{33} + 10y^{32} + \dots - 14y - 1$
$c_5, c_{12}$	$y^{33} + 30y^{32} + \dots - 2353y - 121$
$c_9, c_{11}$	$y^{33} - 12y^{32} + \dots + 432y - 16$
$c_{10}$	$y^{33} + 8y^{32} + \dots + 19y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.168715 + 0.904319I$ $a = -1.00000$ $b = 0.211967 + 0.998704I$	$-0.20592 + 3.02064I$	$4.66691 - 3.97543I$
$u = -0.168715 - 0.904319I$ $a = -1.00000$ $b = 0.211967 - 0.998704I$	$-0.20592 - 3.02064I$	$4.66691 + 3.97543I$
$u = -0.593938 + 0.634380I$ $a = -1.00000$ $b = 0.278636 + 0.519226I$	$3.36803 - 0.36624I$	$10.78955 + 1.90553I$
$u = -0.593938 - 0.634380I$ $a = -1.00000$ $b = 0.278636 - 0.519226I$	$3.36803 + 0.36624I$	$10.78955 - 1.90553I$
$u = -0.734685 + 0.460453I$ $a = -1.00000$ $b = -1.019540 + 0.561361I$	$2.05075 + 0.83990I$	$11.12891 - 0.28641I$
$u = -0.734685 - 0.460453I$ $a = -1.00000$ $b = -1.019540 - 0.561361I$	$2.05075 - 0.83990I$	$11.12891 + 0.28641I$
$u = -0.812625 + 0.853439I$ $a = -1.00000$ $b = 0.248656 + 0.916833I$	$2.66313 + 3.69897I$	$8.75583 - 4.73989I$
$u = -0.812625 - 0.853439I$ $a = -1.00000$ $b = 0.248656 - 0.916833I$	$2.66313 - 3.69897I$	$8.75583 + 4.73989I$
$u = 0.958958 + 0.691328I$ $a = -1.00000$ $b = -0.922919 + 0.036438I$	$3.94821 + 7.37230I$	$8.53206 - 8.71708I$
$u = 0.958958 - 0.691328I$ $a = -1.00000$ $b = -0.922919 - 0.036438I$	$3.94821 - 7.37230I$	$8.53206 + 8.71708I$



Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.079670 + 0.808678I$ $a = -1.00000$ $b = -0.368861 - 0.958181I$	$-3.60784 - 2.31209I$	$-6.62484 + 2.31830I$
$u = -0.079670 - 0.808678I$ $a = -1.00000$ $b = -0.368861 + 0.958181I$	$-3.60784 + 2.31209I$	$-6.62484 - 2.31830I$
$u = 0.980087 + 0.718284I$ $a = -1.00000$ $b = 0.224126 - 0.824618I$	$1.94588 - 11.52120I$	$4.47395 + 6.03943I$
$u = 0.980087 - 0.718284I$ $a = -1.00000$ $b = 0.224126 + 0.824618I$	$1.94588 + 11.52120I$	$4.47395 - 6.03943I$
$u = 0.983806 + 0.738529I$ $a = -1.00000$ $b = -0.140001 - 0.536790I$	$3.81043 + 6.56313I$	$7.47883 - 6.51008I$
$u = 0.983806 - 0.738529I$ $a = -1.00000$ $b = -0.140001 + 0.536790I$	$3.81043 - 6.56313I$	$7.47883 + 6.51008I$
$u = 0.320744 + 1.249490I$ $a = -1.00000$ $b = -0.596108 - 1.053050I$	$-6.09846 + 2.54463I$	$-8.70429 + 1.92607I$
$u = 0.320744 - 1.249490I$ $a = -1.00000$ $b = -0.596108 + 1.053050I$	$-6.09846 - 2.54463I$	$-8.70429 - 1.92607I$
$u = 0.926206 + 1.029530I$ $a = -1.00000$ $b = -0.34866 - 1.39004I$	$-3.84906 + 3.62349I$	$0. + 10.49967I$
$u = 0.926206 - 1.029530I$ $a = -1.00000$ $b = -0.34866 + 1.39004I$	$-3.84906 - 3.62349I$	$0. - 10.49967I$

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.790710 + 1.154890I$ $a = -1.00000$ $b = 0.093645 + 0.904158I$	$0.40815 - 1.75689I$	$5.38092 + 2.46903I$
$u = -0.790710 - 1.154890I$ $a = -1.00000$ $b = 0.093645 - 0.904158I$	$0.40815 + 1.75689I$	$5.38092 - 2.46903I$
$u = 0.82028 + 1.15606I$ $a = -1.00000$ $b = -0.198156 - 1.132650I$	$-4.61541 + 4.46442I$	$0. - 3.67106I$
$u = 0.82028 - 1.15606I$ $a = -1.00000$ $b = -0.198156 + 1.132650I$	$-4.61541 - 4.46442I$	$0. + 3.67106I$
$u = -0.19236 + 1.40778I$ $a = -1.00000$ $b = -0.751362 + 1.010120I$	$-4.90547 - 2.98394I$	$16.1588 + 5.9851I$
$u = -0.19236 - 1.40778I$ $a = -1.00000$ $b = -0.751362 - 1.010120I$	$-4.90547 + 2.98394I$	$16.1588 - 5.9851I$
$u = -0.407596 + 0.343971I$ $a = -1.00000$ $b = -0.30865 + 1.72803I$	$-1.82389 - 9.59720I$	$5.5996 + 15.8899I$
$u = -0.407596 - 0.343971I$ $a = -1.00000$ $b = -0.30865 - 1.72803I$	$-1.82389 + 9.59720I$	$5.5996 - 15.8899I$
$u = -0.398810$ $a = -1.00000$ $b = 0.915287$	$4.06063$	$9.55440$
$u = -1.12238 + 1.19264I$ $a = -1.00000$ $b = -0.551807 + 1.289240I$	$0.21835 - 12.79100I$	$0$

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.12238 - 1.19264I$ $a = -1.00000$ $b = -0.551807 - 1.289240I$	$0.21835 + 12.79100I$	0
$u = 0.111994 + 0.285752I$ $a = -1.00000$ $b = -0.30860 - 2.04071I$	$-0.272015 - 0.346641I$	$-6.5809 - 19.6542I$
$u = 0.111994 - 0.285752I$ $a = -1.00000$ $b = -0.30860 + 2.04071I$	$-0.272015 + 0.346641I$	$-6.5809 + 19.6542I$

IV.

$$I_4^u = \langle -4.84 \times 10^5 u^{11} - 2.83 \times 10^6 u^{10} + \dots + 2.43 \times 10^7 b + 7.31 \times 10^6, 1.98 \times 10^7 u^{11} + 1.38 \times 10^8 u^{10} + \dots + 4.85 \times 10^7 a - 1.92 \times 10^8, u^{12} + 7u^{11} + \dots - 6u + 8 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_5 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_1 &= \begin{pmatrix} -0.408452u^{11} - 2.85189u^{10} + \dots - 2.55780u + 3.94871 \\ 0.0199533u^{11} + 0.116604u^{10} + \dots + 0.779717u - 0.301249 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_2 &= \begin{pmatrix} -0.476546u^{11} - 3.18766u^{10} + \dots - 0.0262394u + 4.19174 \\ -0.00267315u^{11} + 0.0649243u^{10} + \dots + 2.16980u - 1.42835 \end{pmatrix} \\ a_8 &= \begin{pmatrix} 0.888765u^{11} + 6.38892u^{10} + \dots + 5.61669u - 17.5644 \\ -0.150658u^{11} - 1.00425u^{10} + \dots - 1.16846u + 0.454089 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} -0.428405u^{11} - 2.96849u^{10} + \dots - 3.33752u + 4.24996 \\ 0.0199533u^{11} + 0.116604u^{10} + \dots + 0.779717u - 0.301249 \end{pmatrix} \\ a_6 &= \begin{pmatrix} -0.136342u^{11} - 1.17244u^{10} + \dots - 7.99051u - 1.17488 \\ 0.0795807u^{11} + 0.624457u^{10} + \dots + 0.962199u + 0.346989 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -0.602023u^{11} - 4.06803u^{10} + \dots - 1.61564u + 1.97057 \\ -0.0352751u^{11} + 0.00747723u^{10} + \dots + 3.81404u - 1.20267 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 0.533024u^{11} + 3.66862u^{10} + \dots + 1.61252u - 13.8248 \\ -0.215035u^{11} - 1.53280u^{10} + \dots - 1.81856u + 2.09220 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 0.886566u^{11} + 6.19636u^{10} + \dots + 3.13455u - 15.5687 \\ -0.329372u^{11} - 2.41312u^{10} + \dots - 2.73127u + 1.09288 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 0.560376u^{11} + 5.37265u^{10} + \dots + 49.1407u + 26.3999 \\ 0.0452092u^{11} + 0.241021u^{10} + \dots - 2.54129u - 5.12788 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = 1

$$(iii) \text{ Cusp Shapes} = \frac{215900093}{194102032} u^{11} + \frac{3183931527}{388204064} u^{10} + \dots - \frac{1918294387}{194102032} u - \frac{8300245477}{388204064}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$4(2u^6 + u^5 + u^4 + 2u^3 + u^2 + u + 1)^2$
$c_2, c_7$	$u^{12} - 3u^{11} + \dots - 7u + 2$
$c_3, c_6$	$2(2u^{12} - 5u^{11} + \dots - u + 2)$
$c_4, c_8$	$u^{12} + 7u^{11} + \dots - 6u + 8$
$c_5$	$4(2u^6 - 5u^5 + 9u^4 - 9u^3 + 7u^2 - 4u + 1)^2$
$c_9, c_{11}$	$2(2u^{12} - 3u^{11} + \dots - 160u + 64)$
$c_{10}$	$4(2u^6 + 9u^5 + 19u^4 + 23u^3 + 18u^2 + 7u + 1)^2$
$c_{12}$	$4(2u^6 + 5u^5 + 9u^4 + 9u^3 + 7u^2 + 4u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$16(4y^6 + 3y^5 + y^4 - y^2 + y + 1)^2$
$c_2, c_7$	$y^{12} + 11y^{11} + \dots + 23y + 4$
$c_3, c_6$	$4(4y^{12} + 35y^{11} + \dots + 67y + 4)$
$c_4, c_8$	$y^{12} - 17y^{11} + \dots + 76y + 64$
$c_5, c_{12}$	$16(4y^6 + 11y^5 + 19y^4 + 9y^3 - 5y^2 - 2y + 1)^2$
$c_9, c_{11}$	$4(4y^{12} + 35y^{11} + \dots - 5120y + 4096)$
$c_{10}$	$16(4y^6 - 5y^5 + 19y^4 + 33y^3 + 40y^2 - 13y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_4^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.001170 + 0.097095I$ $a = 0.741262 - 0.844341I$ $b = 0.583572 - 0.120772I$	$2.72171 + 2.00437I$	$12.08084 - 3.25701I$
$u = -1.001170 - 0.097095I$ $a = 0.741262 + 0.844341I$ $b = 0.583572 + 0.120772I$	$2.72171 - 2.00437I$	$12.08084 + 3.25701I$
$u = 0.579882 + 0.747128I$ $a = 1.58668 - 0.23717I$ $b = 0.672863 + 1.178830I$	$-1.42405 + 8.53123I$	$1.8254 - 14.9556I$
$u = 0.579882 - 0.747128I$ $a = 1.58668 + 0.23717I$ $b = 0.672863 - 1.178830I$	$-1.42405 - 8.53123I$	$1.8254 + 14.9556I$
$u = 0.660150 + 0.917304I$ $a = 0.587193 - 0.668848I$ $b = 0.583572 + 0.120772I$	$2.72171 - 2.00437I$	$12.08084 + 3.25701I$
$u = 0.660150 - 0.917304I$ $a = 0.587193 + 0.668848I$ $b = 0.583572 - 0.120772I$	$2.72171 + 2.00437I$	$12.08084 - 3.25701I$
$u = 0.318121 + 0.468569I$ $a = 4.07880 - 3.54728I$ $b = -0.006436 + 0.874144I$	$0.34727 - 1.97215I$	$-20.8593 - 1.2683I$
$u = 0.318121 - 0.468569I$ $a = 4.07880 + 3.54728I$ $b = -0.006436 - 0.874144I$	$0.34727 + 1.97215I$	$-20.8593 + 1.2683I$
$u = -1.09729 + 1.04792I$ $a = 0.616472 - 0.092147I$ $b = 0.672863 - 1.178830I$	$-1.42405 - 8.53123I$	$1.8254 + 14.9556I$
$u = -1.09729 - 1.04792I$ $a = 0.616472 + 0.092147I$ $b = 0.672863 + 1.178830I$	$-1.42405 + 8.53123I$	$1.8254 - 14.9556I$

Solutions to $I_4^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.95970 + 0.78273I$	$0.34727 + 1.97215I$	$-20.8593 + 1.2683I$
$a = 0.139590 - 0.121400I$		
$b = -0.006436 - 0.874144I$		
$u = -2.95970 - 0.78273I$	$0.34727 - 1.97215I$	$-20.8593 - 1.2683I$
$a = 0.139590 + 0.121400I$		
$b = -0.006436 + 0.874144I$		



### V. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$16(2u^6 + u^5 + \dots + u + 1)^2(u^{33} - 18u^{32} + \dots - 90u + 25)$ $\cdot (u^{50} - 37u^{49} + \dots - 1343488u + 65536)$ $\cdot (2u^{78} + 47u^{77} + \dots + 1391u + 71)^2$
$c_2, c_7$	$(u^{12} - 3u^{11} + \dots - 7u + 2)(u^{33} - u^{32} + \dots + 2u - 1)$ $\cdot (u^{50} + u^{49} + \dots + u + 1)(u^{156} - 2u^{155} + \dots - 932767u - 85726)$
$c_3, c_6$	$4(2u^{12} - 5u^{11} + \dots - u + 2)(u^{33} - u^{32} + \dots + 8u - 1)$ $\cdot (u^{50} + u^{49} + \dots + u + 1)(2u^{156} - 11u^{155} + \dots - 10689u + 882)$
$c_4, c_8$	$(u^{12} + 7u^{11} + \dots - 6u + 8)(u^{33} + 5u^{31} + \dots + 4u + 1)$ $\cdot (u^{50} + 5u^{48} + \dots + 5u + 1)(u^{156} - 6u^{155} + \dots + 6790u + 1288)$
$c_5$	$16(2u^6 - 5u^5 + 9u^4 - 9u^3 + 7u^2 - 4u + 1)^2$ $\cdot (u^{33} + 8u^{32} + \dots - 45u - 11)(u^{50} - 27u^{49} + \dots - 45312u + 2560)$ $\cdot (2u^{78} + 29u^{77} + \dots + 2u - 1)^2$
$c_9, c_{11}$	$4(2u^{12} - 3u^{11} + \dots - 160u + 64)(u^{33} - 2u^{32} + \dots - 28u - 4)$ $\cdot (u^{50} + 2u^{49} + \dots - 284u + 148)$ $\cdot (2u^{156} + 9u^{155} + \dots - 196661110784u + 9822734336)$
$c_{10}$	$16(2u^6 + 9u^5 + 19u^4 + 23u^3 + 18u^2 + 7u + 1)^2$ $\cdot (u^{33} - 16u^{32} + \dots + u - 1)(u^{50} + 33u^{49} + \dots + 3584u + 256)$ $\cdot (2u^{78} - 33u^{77} + \dots - 13u + 1)^2$
$c_{12}$	$16(2u^6 + 5u^5 + 9u^4 + 9u^3 + 7u^2 + 4u + 1)^2$ $\cdot (u^{33} - 8u^{32} + \dots - 45u + 11)(u^{50} - 27u^{49} + \dots - 45312u + 2560)$ $\cdot (2u^{78} + 29u^{77} + \dots + 2u - 1)^2$

## VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$256(4y^6 + 3y^5 + \dots + y + 1)^2(y^{33} - 4y^{32} + \dots - 3500y - 625)$ $\cdot (y^{50} + 15y^{49} + \dots + 68719476736y + 4294967296)$ $\cdot (4y^{78} + 67y^{77} + \dots - 256583y + 5041)^2$
$c_2, c_7$	$(y^{12} + 11y^{11} + \dots + 23y + 4)(y^{33} + y^{32} + \dots + 22y - 1)$ $\cdot (y^{50} - 23y^{49} + \dots - 51y + 1)$ $\cdot (y^{156} + 6y^{155} + \dots - 628310042425y + 7348947076)$
$c_3, c_6$	$16(4y^{12} + 35y^{11} + \dots + 67y + 4)(y^{33} + y^{32} + \dots - 6y - 1)$ $\cdot (y^{50} + 5y^{49} + \dots + 29y + 1)$ $\cdot (4y^{156} - y^{155} + \dots - 54241677y + 777924)$
$c_4, c_8$	$(y^{12} - 17y^{11} + \dots + 76y + 64)(y^{33} + 10y^{32} + \dots - 14y - 1)$ $\cdot (y^{50} + 10y^{49} + \dots + 37y + 1)$ $\cdot (y^{156} - 6y^{155} + \dots + 68705644y + 1658944)$
$c_5, c_{12}$	$256(4y^6 + 11y^5 + 19y^4 + 9y^3 - 5y^2 - 2y + 1)^2$ $\cdot (y^{33} + 30y^{32} + \dots - 2353y - 121)$ $\cdot (y^{50} + 35y^{49} + \dots + 254345216y + 6553600)$ $\cdot (4y^{78} + 191y^{77} + \dots + 2y + 1)^2$
$c_9, c_{11}$	$16(4y^{12} + 35y^{11} + \dots - 5120y + 4096)$ $\cdot (y^{33} - 12y^{32} + \dots + 432y - 16)(y^{50} - 12y^{49} + \dots - 46320y + 21904)$ $\cdot (4y^{156} - 225y^{155} + \dots - 3.04 \times 10^{22}y + 9.65 \times 10^{19})$
$c_{10}$	$256(4y^6 - 5y^5 + 19y^4 + 33y^3 + 40y^2 - 13y + 1)^2$ $\cdot (y^{33} + 8y^{32} + \dots + 19y - 1)(y^{50} + 7y^{49} + \dots + 1769472y + 65536)$ $\cdot (4y^{78} - 37y^{77} + \dots - 57y + 1)^2$