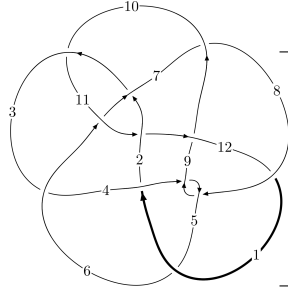
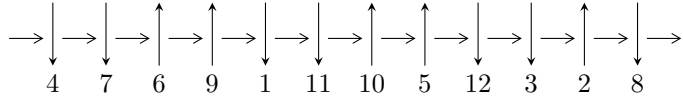


12a<sub>1020</sub> (K12a<sub>1020</sub>)

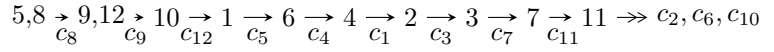


A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**



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

$$I_1^u = \langle -5.40044 \times 10^{30}u^{51} - 1.18633 \times 10^{32}u^{50} + \dots + 1.35700 \times 10^{31}b + 1.73576 \times 10^{33}, \\ - 2.27295 \times 10^{32}u^{51} - 4.78994 \times 10^{33}u^{50} + \dots + 2.98541 \times 10^{32}a - 2.85705 \times 10^{35}, \\ u^{52} + 19u^{51} + \dots + 4304u + 352 \rangle$$

$$I_2^u = \langle 6.44508 \times 10^{84}au^{75} - 2.08267 \times 10^{91}u^{75} + \dots - 3.22254 \times 10^{84}a + 1.52479 \times 10^{91}, \\ - 1.34824 \times 10^{87}au^{75} + 5.19629 \times 10^{86}u^{75} + \dots + 2.29637 \times 10^{87}a - 2.56035 \times 10^{87}, \\ 2u^{76} - 21u^{75} + \dots + 7u + 1 \rangle$$

$$I_3^u = \langle -33715462178301u^{32} - 249975325620775u^{31} + \dots + 13110454304539b - 1988240417047, \\ - 31727221761254u^{32} - 267784864462700u^{31} + \dots + 13110454304539a - 56379097685388, \\ u^{33} + 8u^{32} + \dots - 2u + 1 \rangle$$

$$I_4^u = \langle 2u^5a - 3u^4a - 4u^5 + 6u^3a + 6u^4 - 3u^2a - 12u^3 + 4au + 8u^2 + b - a - 9u + 3, \\ - 2u^5a + 5u^4a - 2u^5 - 11u^3a + 3u^4 + 10u^2a + a^2 - 8au - 6u^2 + a + 8u - 2, \\ 2u^6 - 5u^5 + 9u^4 - 9u^3 + 7u^2 - 4u + 1 \rangle$$

\* 4 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 249 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.

$$\text{I. } I_1^u = \langle -5.40 \times 10^{30} u^{51} - 1.19 \times 10^{32} u^{50} + \dots + 1.36 \times 10^{31} b + 1.74 \times 10^{33}, -2.27 \times 10^{32} u^{51} - 4.79 \times 10^{33} u^{50} + \dots + 2.99 \times 10^{32} a - 2.86 \times 10^{35}, u^{52} + 19u^{51} + \dots + 4304u + 352 \rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} 0.761351u^{51} + 16.0445u^{50} + \dots + 10398.7u + 957.005 \\ 0.397967u^{51} + 8.74225u^{50} + \dots - 479.088u - 127.911 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2.70304u^{51} - 46.8969u^{50} + \dots - 3895.42u - 399.652 \\ 2.93589u^{51} + 57.3067u^{50} + \dots + 21884.4u + 1984.90 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.363384u^{51} + 7.30226u^{50} + \dots + 10877.8u + 1084.92 \\ 0.397967u^{51} + 8.74225u^{50} + \dots - 479.088u - 127.911 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.908460u^{51} + 16.5220u^{50} + \dots + 24384.8u + 2445.30 \\ -0.738720u^{51} - 8.56649u^{50} + \dots - 1463.71u - 319.778 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.105046u^{51} + 0.592168u^{50} + \dots + 4488.89u + 506.488 \\ -1.38508u^{51} - 24.8619u^{50} + \dots - 1935.50u - 183.673 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 4.68723u^{51} + 81.2745u^{50} + \dots + 19555.9u + 1971.13 \\ -6.25802u^{51} - 115.562u^{50} + \dots - 28852.9u - 2683.34 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -2.09264u^{51} - 37.0957u^{50} + \dots + 3061.71u + 351.415 \\ 2.83123u^{51} + 55.6059u^{50} + \dots + 21975.9u + 1963.10 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 3.82698u^{51} + 70.5532u^{50} + \dots + 34625.1u + 3353.24 \\ -2.85778u^{51} - 49.9394u^{50} + \dots - 7240.73u - 763.558 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-6.09524u^{51} - 97.4706u^{50} + \dots + 31667.1u + 2690.77$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_9$	$u^{52} + u^{51} + \dots - 52u^3 + 4$
$c_2, c_6$	$u^{52} - 3u^{50} + \dots - 3u + 1$
$c_3, c_7$	$u^{52} + 2u^{51} + \dots + 23u + 71$
$c_4, c_8$	$u^{52} - 19u^{51} + \dots - 4304u + 352$
$c_5, c_{12}$	$u^{52} + u^{51} + \dots + u + 1$
$c_{10}$	$u^{52} + 48u^{51} + \dots + 557056u + 16384$
$c_{11}$	$u^{52} + 42u^{51} + \dots + 4266320u + 202144$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_9$	$y^{52} - 9y^{51} + \dots - 512y^2 + 16$
$c_2, c_6$	$y^{52} - 6y^{51} + \dots - 11y + 1$
$c_3, c_7$	$y^{52} + 24y^{51} + \dots + 176687y + 5041$
$c_4, c_8$	$y^{52} + 25y^{51} + \dots - 361216y + 123904$
$c_5, c_{12}$	$y^{52} - 37y^{51} + \dots - 89y + 1$
$c_{10}$	$y^{52} - 18y^{51} + \dots - 20535312384y + 268435456$
$c_{11}$	$y^{52} + 30y^{50} + \dots + 152596979968y + 40862196736$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.328451 + 0.935194I$ $a = -1.15085 + 1.22004I$ $b = -1.42856 - 0.20998I$	$-6.34012 + 4.20838I$	0
$u = -0.328451 - 0.935194I$ $a = -1.15085 - 1.22004I$ $b = -1.42856 + 0.20998I$	$-6.34012 - 4.20838I$	0
$u = -0.902564 + 0.355034I$ $a = -0.220234 - 0.489176I$ $b = 1.219410 - 0.714398I$	$-1.38181 + 6.48157I$	0
$u = -0.902564 - 0.355034I$ $a = -0.220234 + 0.489176I$ $b = 1.219410 + 0.714398I$	$-1.38181 - 6.48157I$	0
$u = -1.042250 + 0.264800I$ $a = 0.073541 + 0.208892I$ $b = -0.652538 + 0.602452I$	$4.05163 + 0.57099I$	0
$u = -1.042250 - 0.264800I$ $a = 0.073541 - 0.208892I$ $b = -0.652538 - 0.602452I$	$4.05163 - 0.57099I$	0
$u = 0.028086 + 1.089510I$ $a = 1.74172 - 0.65890I$ $b = 1.263660 + 0.488619I$	$-7.50048 - 5.07397I$	0
$u = 0.028086 - 1.089510I$ $a = 1.74172 + 0.65890I$ $b = 1.263660 - 0.488619I$	$-7.50048 + 5.07397I$	0
$u = 0.113428 + 0.865994I$ $a = -1.62163 - 0.52299I$ $b = -0.486527 - 0.936129I$	$-2.20451 + 2.53303I$	0
$u = 0.113428 - 0.865994I$ $a = -1.62163 + 0.52299I$ $b = -0.486527 + 0.936129I$	$-2.20451 - 2.53303I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.139630 + 0.144121I$ $a = -0.069796 + 0.215777I$ $b = -1.084110 + 0.714195I$	$-3.9054 + 16.0898I$	0
$u = -1.139630 - 0.144121I$ $a = -0.069796 - 0.215777I$ $b = -1.084110 - 0.714195I$	$-3.9054 - 16.0898I$	0
$u = -0.032590 + 1.181210I$ $a = -1.31852 + 0.67896I$ $b = -1.115370 - 0.270913I$	$-6.85222 + 3.97901I$	0
$u = -0.032590 - 1.181210I$ $a = -1.31852 - 0.67896I$ $b = -1.115370 + 0.270913I$	$-6.85222 - 3.97901I$	0
$u = -0.639841 + 0.504049I$ $a = 0.554019 + 0.110829I$ $b = -0.111463 + 0.734460I$	$1.01955 - 1.49899I$	0
$u = -0.639841 - 0.504049I$ $a = 0.554019 - 0.110829I$ $b = -0.111463 - 0.734460I$	$1.01955 + 1.49899I$	0
$u = 0.325092 + 1.144900I$ $a = 0.688696 + 0.083452I$ $b = 0.359959 + 0.304509I$	$-2.69752 - 1.79497I$	0
$u = 0.325092 - 1.144900I$ $a = 0.688696 - 0.083452I$ $b = 0.359959 - 0.304509I$	$-2.69752 + 1.79497I$	0
$u = -1.161450 + 0.263222I$ $a = 0.110192 - 0.294304I$ $b = 1.109200 - 0.488432I$	$-3.10795 + 6.16802I$	0
$u = -1.161450 - 0.263222I$ $a = 0.110192 + 0.294304I$ $b = 1.109200 + 0.488432I$	$-3.10795 - 6.16802I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.413496 + 1.133530I$		
$a = 1.114460 - 0.210487I$	$-0.95428 - 2.56092I$	0
$b = 0.859652 + 0.640849I$		
$u = -0.413496 - 1.133530I$		
$a = 1.114460 + 0.210487I$	$-0.95428 + 2.56092I$	0
$b = 0.859652 - 0.640849I$		
$u = -0.570351 + 1.086220I$		
$a = 0.81209 - 1.18864I$	$-7.56789 - 7.94239I$	0
$b = 1.50263 - 0.16787I$		
$u = -0.570351 - 1.086220I$		
$a = 0.81209 + 1.18864I$	$-7.56789 + 7.94239I$	0
$b = 1.50263 + 0.16787I$		
$u = -0.212975 + 1.221720I$		
$a = -1.392520 - 0.221159I$	$-4.62509 - 2.73147I$	0
$b = -0.745673 - 0.944265I$		
$u = -0.212975 - 1.221720I$		
$a = -1.392520 + 0.221159I$	$-4.62509 + 2.73147I$	0
$b = -0.745673 + 0.944265I$		
$u = -0.391466 + 1.182060I$		
$a = 1.96201 - 0.32460I$	$-8.72332 + 0.03559I$	0
$b = 1.50361 + 1.09924I$		
$u = -0.391466 - 1.182060I$		
$a = 1.96201 + 0.32460I$	$-8.72332 - 0.03559I$	0
$b = 1.50361 - 1.09924I$		
$u = -0.585160 + 1.189660I$		
$a = -1.73574 + 0.50189I$	$-3.99868 - 11.96830I$	0
$b = -1.65827 - 0.93012I$		
$u = -0.585160 - 1.189660I$		
$a = -1.73574 - 0.50189I$	$-3.99868 + 11.96830I$	0
$b = -1.65827 + 0.93012I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.248660 + 0.463663I$ $a = 0.125035 - 0.161915I$ $b = 0.508560 - 0.097927I$	$2.13531 + 0.46099I$	0
$u = -1.248660 - 0.463663I$ $a = 0.125035 + 0.161915I$ $b = 0.508560 + 0.097927I$	$2.13531 - 0.46099I$	0
$u = 1.241750 + 0.492072I$ $a = -0.307225 + 0.082560I$ $b = -0.184190 + 0.018725I$	$0.64521 + 7.48718I$	0
$u = 1.241750 - 0.492072I$ $a = -0.307225 - 0.082560I$ $b = -0.184190 - 0.018725I$	$0.64521 - 7.48718I$	0
$u = 0.577845 + 0.271593I$ $a = 0.773070 - 0.268452I$ $b = 0.325659 - 0.021301I$	$-1.377640 - 0.111913I$	$-9.16313 - 0.18104I$
$u = 0.577845 - 0.271593I$ $a = 0.773070 + 0.268452I$ $b = 0.325659 + 0.021301I$	$-1.377640 + 0.111913I$	$-9.16313 + 0.18104I$
$u = -0.575490 + 1.253600I$ $a = 1.386670 - 0.168071I$ $b = 1.17090 + 0.86501I$	$0.87628 - 6.32968I$	0
$u = -0.575490 - 1.253600I$ $a = 1.386670 + 0.168071I$ $b = 1.17090 - 0.86501I$	$0.87628 + 6.32968I$	0
$u = 0.550269 + 0.271190I$ $a = 0.297594 - 1.274230I$ $b = 0.250845 - 0.444111I$	$-1.36698 + 2.91511I$	$-11.37029 - 4.82665I$
$u = 0.550269 - 0.271190I$ $a = 0.297594 + 1.274230I$ $b = 0.250845 + 0.444111I$	$-1.36698 - 2.91511I$	$-11.37029 + 4.82665I$



Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.593028 + 0.034561I$ $a = 0.706912 + 0.503393I$ $b = -1.121950 - 0.578219I$	$-5.27303 + 3.77872I$	$-7.01694 - 1.49061I$
$u = -0.593028 - 0.034561I$ $a = 0.706912 - 0.503393I$ $b = -1.121950 + 0.578219I$	$-5.27303 - 3.77872I$	$-7.01694 + 1.49061I$
$u = -0.59616 + 1.32683I$ $a = 1.65508 - 0.25347I$ $b = 1.48244 + 0.94138I$	$-7.6347 - 22.2107I$	0
$u = -0.59616 - 1.32683I$ $a = 1.65508 + 0.25347I$ $b = 1.48244 - 0.94138I$	$-7.6347 + 22.2107I$	0
$u = -0.25973 + 1.44063I$ $a = -1.037070 + 0.520349I$ $b = -1.030180 - 0.195980I$	$-9.24655 + 1.17903I$	0
$u = -0.25973 - 1.44063I$ $a = -1.037070 - 0.520349I$ $b = -1.030180 + 0.195980I$	$-9.24655 - 1.17903I$	0
$u = -0.66205 + 1.31144I$ $a = -0.947816 + 0.220385I$ $b = -0.930756 - 0.497946I$	$-0.92252 - 7.27728I$	0
$u = -0.66205 - 1.31144I$ $a = -0.947816 - 0.220385I$ $b = -0.930756 + 0.497946I$	$-0.92252 + 7.27728I$	0
$u = -0.64166 + 1.32178I$ $a = -1.47083 + 0.37970I$ $b = -1.45741 - 0.72943I$	$-6.4981 - 12.5956I$	0
$u = -0.64166 - 1.32178I$ $a = -1.47083 - 0.37970I$ $b = -1.45741 + 0.72943I$	$-6.4981 + 12.5956I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.33947 + 1.49150I$		
$a = 0.793863 - 0.630940I$	$-9.4880 + 10.5544I$	0
$b = 0.950458 - 0.029331I$		
$u = -0.33947 - 1.49150I$		
$a = 0.793863 + 0.630940I$	$-9.4880 - 10.5544I$	0
$b = 0.950458 + 0.029331I$		

$$\text{II. } I_2^u = \langle 6.45 \times 10^{84} au^{75} - 2.08 \times 10^{91} u^{75} + \dots - 3.22 \times 10^{84} a + 1.52 \times 10^{91}, -1.35 \times 10^{87} au^{75} + 5.20 \times 10^{86} u^{75} + \dots + 2.30 \times 10^{87} a - 2.56 \times 10^{87}, 2u^{76} - 21u^{75} + \dots + 7u + 1 \rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} a \\ -0.0000445028au^{75} + 143.807u^{75} + \dots + 0.0000222514a - 105.286 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -50.0143au^{75} + 58.5271u^{75} + \dots - 92.6263a + 7.94192 \\ 157.791au^{75} - 12.7636u^{75} + \dots - 20.7227a + 63.7323 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0000445028au^{75} - 143.807u^{75} + \dots + 0.999978a + 105.286 \\ -0.0000445028au^{75} + 143.807u^{75} + \dots + 0.0000222514a - 105.286 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -143.807au^{75} - 249.451u^{75} + \dots + 105.286a + 80.3512 \\ 31.3420u^{75} - 390.083u^{74} + \dots - 414.709u - 51.9207 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 9.67142u^{75} + 148.719u^{74} + \dots + a + 80.2788 \\ 0.0000445028au^{75} + 76.7039u^{75} + \dots - 0.0000222514a - 59.0473 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 44.2868au^{75} + 53.1254u^{75} + \dots + 2.78763a + 352.203 \\ 86.3708au^{75} - 18.7668u^{75} + \dots - 22.6480a - 11.8215 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 38.1345au^{75} + 194.994u^{75} + \dots + 50.8067a + 342.957 \\ -27.9283au^{75} + 15.3685u^{75} + \dots - 38.9845a - 81.4659 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 9.83193au^{75} - 67.1582u^{75} + \dots + 24.8231a - 168.467 \\ 15.4341au^{75} + 81.6461u^{75} + \dots + 4.43978a + 43.4064 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $392.152u^{75} - 4604.87u^{74} + \dots - 3732.64u - 210.170$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_9$	$4u^{152} + 33u^{151} + \dots + 2418673u + 188072$
$c_2, c_6$	$2u^{152} + 7u^{151} + \dots + 15u + 1$
$c_3, c_7$	$4u^{152} + 51u^{151} + \dots + 17783877531u + 1989816602$
$c_4$	$(2u^{76} + 21u^{75} + \dots - 7u + 1)^2$
$c_5, c_{12}$	$u^{152} - 2u^{151} + \dots + 436500465u + 119450102$
$c_8$	$(2u^{76} - 21u^{75} + \dots + 7u + 1)^2$
$c_{10}$	$(2u^{76} + 45u^{75} + \dots + 19u + 1)^2$
$c_{11}$	$(u^{76} + 24u^{75} + \dots - 413u + 26)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_9$	$16y^{152} - 201y^{151} + \dots + 1852754172671y + 35371077184$
$c_2, c_6$	$4y^{152} - 29y^{151} + \dots - 275y + 1$
$c_3, c_7$	$16y^{152} + 1343y^{151} + \dots + 2.77 \times 10^{20}y + 3.96 \times 10^{18}$
$c_4, c_8$	$(4y^{76} + 191y^{75} + \dots - 119y + 1)^2$
$c_5, c_{12}$	$y^{152} - 14y^{151} + \dots - 275754931573328877y + 14268326867810404$
$c_{10}$	$(4y^{76} - 61y^{75} + \dots - 59y + 1)^2$
$c_{11}$	$(y^{76} + 18y^{75} + \dots - 60537y + 676)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.535588 + 0.860840I$		
$a = 0.129918 - 0.891600I$	$-3.11544 - 0.18077I$	0
$b = -0.555546 + 0.294773I$		
$u = 0.535588 + 0.860840I$		
$a = 1.34580 + 0.57352I$	$-3.11544 - 0.18077I$	0
$b = 1.388400 - 0.045332I$		
$u = 0.535588 - 0.860840I$		
$a = 0.129918 + 0.891600I$	$-3.11544 + 0.18077I$	0
$b = -0.555546 - 0.294773I$		
$u = 0.535588 - 0.860840I$		
$a = 1.34580 - 0.57352I$	$-3.11544 + 0.18077I$	0
$b = 1.388400 + 0.045332I$		
$u = 0.272187 + 0.982783I$		
$a = -0.24072 + 1.48555I$	$-3.92663 + 12.49230I$	0
$b = 0.22673 + 2.23366I$		
$u = 0.272187 + 0.982783I$		
$a = 2.77822 - 0.29267I$	$-3.92663 + 12.49230I$	0
$b = 0.607997 - 0.663023I$		
$u = 0.272187 - 0.982783I$		
$a = -0.24072 - 1.48555I$	$-3.92663 - 12.49230I$	0
$b = 0.22673 - 2.23366I$		
$u = 0.272187 - 0.982783I$		
$a = 2.77822 + 0.29267I$	$-3.92663 - 12.49230I$	0
$b = 0.607997 + 0.663023I$		
$u = -0.807679 + 0.640263I$		
$a = -1.106950 + 0.854727I$	$-2.98754 - 8.48011I$	0
$b = -1.271650 + 0.065286I$		
$u = -0.807679 + 0.640263I$		
$a = 0.367740 + 0.184647I$	$-2.98754 - 8.48011I$	0
$b = -0.638473 - 0.532165I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.807679 - 0.640263I$ $a = -1.106950 - 0.854727I$ $b = -1.271650 - 0.065286I$	$-2.98754 + 8.48011I$	0
$u = -0.807679 - 0.640263I$ $a = 0.367740 - 0.184647I$ $b = -0.638473 + 0.532165I$	$-2.98754 + 8.48011I$	0
$u = -0.107286 + 0.947975I$ $a = -0.54250 + 3.33216I$ $b = -0.75145 + 3.71530I$	$-2.95419 - 2.31540I$	0
$u = -0.107286 + 0.947975I$ $a = 4.29899 + 0.58391I$ $b = 0.340786 + 0.239182I$	$-2.95419 - 2.31540I$	0
$u = -0.107286 - 0.947975I$ $a = -0.54250 - 3.33216I$ $b = -0.75145 - 3.71530I$	$-2.95419 + 2.31540I$	0
$u = -0.107286 - 0.947975I$ $a = 4.29899 - 0.58391I$ $b = 0.340786 - 0.239182I$	$-2.95419 + 2.31540I$	0
$u = -0.225154 + 1.027420I$ $a = -0.184524 - 1.341860I$ $b = 0.31161 - 1.99902I$	$-4.06038 - 4.09099I$	0
$u = -0.225154 + 1.027420I$ $a = -2.48341 - 0.54025I$ $b = -0.563478 - 0.657698I$	$-4.06038 - 4.09099I$	0
$u = -0.225154 - 1.027420I$ $a = -0.184524 + 1.341860I$ $b = 0.31161 + 1.99902I$	$-4.06038 + 4.09099I$	0
$u = -0.225154 - 1.027420I$ $a = -2.48341 + 0.54025I$ $b = -0.563478 + 0.657698I$	$-4.06038 + 4.09099I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.268161 + 1.031030I$ $a = -0.158503 - 0.283629I$ $b = -0.195647 - 1.324300I$	$-2.36415 + 5.32386I$	0
$u = 0.268161 + 1.031030I$ $a = -2.31229 + 0.18219I$ $b = -1.063000 + 0.317364I$	$-2.36415 + 5.32386I$	0
$u = 0.268161 - 1.031030I$ $a = -0.158503 + 0.283629I$ $b = -0.195647 + 1.324300I$	$-2.36415 - 5.32386I$	0
$u = 0.268161 - 1.031030I$ $a = -2.31229 - 0.18219I$ $b = -1.063000 - 0.317364I$	$-2.36415 - 5.32386I$	0
$u = -0.114974 + 1.076400I$ $a = -0.663178 + 1.188530I$ $b = 0.136705 - 0.755710I$	$-3.80712 - 2.27696I$	0
$u = -0.114974 + 1.076400I$ $a = -2.70838 - 1.13596I$ $b = -2.00082 - 1.08453I$	$-3.80712 - 2.27696I$	0
$u = -0.114974 - 1.076400I$ $a = -0.663178 - 1.188530I$ $b = 0.136705 + 0.755710I$	$-3.80712 + 2.27696I$	0
$u = -0.114974 - 1.076400I$ $a = -2.70838 + 1.13596I$ $b = -2.00082 + 1.08453I$	$-3.80712 + 2.27696I$	0
$u = -0.048994 + 0.911029I$ $a = 3.78826 - 0.69079I$ $b = 3.59038 - 1.09488I$	$-3.06874 + 1.84844I$	0
$u = -0.048994 + 0.911029I$ $a = -1.78751 - 3.70474I$ $b = -0.377838 + 0.160469I$	$-3.06874 + 1.84844I$	0



Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.048994 - 0.911029I$ $a = 3.78826 + 0.69079I$ $b = 3.59038 + 1.09488I$	$-3.06874 - 1.84844I$	0
$u = -0.048994 - 0.911029I$ $a = -1.78751 + 3.70474I$ $b = -0.377838 - 0.160469I$	$-3.06874 - 1.84844I$	0
$u = 1.083970 + 0.105131I$ $a = 0.069922 + 0.275483I$ $b = 1.061600 + 0.766034I$	$-3.25964 - 7.35884I$	0
$u = 1.083970 + 0.105131I$ $a = 0.0147593 - 0.0299933I$ $b = -1.023380 - 0.635999I$	$-3.25964 - 7.35884I$	0
$u = 1.083970 - 0.105131I$ $a = 0.069922 - 0.275483I$ $b = 1.061600 - 0.766034I$	$-3.25964 + 7.35884I$	0
$u = 1.083970 - 0.105131I$ $a = 0.0147593 + 0.0299933I$ $b = -1.023380 + 0.635999I$	$-3.25964 + 7.35884I$	0
$u = -0.402448 + 1.025470I$ $a = 0.520157 - 0.859694I$ $b = 0.691616 - 1.144680I$	$-0.82700 - 6.65476I$	0
$u = -0.402448 + 1.025470I$ $a = -1.41986 - 0.49534I$ $b = -0.223236 - 0.290517I$	$-0.82700 - 6.65476I$	0
$u = -0.402448 - 1.025470I$ $a = 0.520157 + 0.859694I$ $b = 0.691616 + 1.144680I$	$-0.82700 + 6.65476I$	0
$u = -0.402448 - 1.025470I$ $a = -1.41986 + 0.49534I$ $b = -0.223236 + 0.290517I$	$-0.82700 + 6.65476I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.397871 + 0.801045I$ $a = 0.616729 + 0.011071I$ $b = 0.377491 + 1.082780I$	$0.26192 - 2.61950I$	0
$u = -0.397871 + 0.801045I$ $a = 1.65979 - 0.29848I$ $b = 0.763302 + 0.618044I$	$0.26192 - 2.61950I$	0
$u = -0.397871 - 0.801045I$ $a = 0.616729 - 0.011071I$ $b = 0.377491 - 1.082780I$	$0.26192 + 2.61950I$	0
$u = -0.397871 - 0.801045I$ $a = 1.65979 + 0.29848I$ $b = 0.763302 - 0.618044I$	$0.26192 + 2.61950I$	0
$u = 0.345442 + 0.810936I$ $a = -2.17409 + 0.30062I$ $b = -0.11674 + 1.65977I$	$1.65413 + 1.54590I$	0
$u = 0.345442 + 0.810936I$ $a = 2.07197 - 1.27808I$ $b = 0.39149 - 2.13789I$	$1.65413 + 1.54590I$	0
$u = 0.345442 - 0.810936I$ $a = -2.17409 - 0.30062I$ $b = -0.11674 - 1.65977I$	$1.65413 - 1.54590I$	0
$u = 0.345442 - 0.810936I$ $a = 2.07197 + 1.27808I$ $b = 0.39149 + 2.13789I$	$1.65413 - 1.54590I$	0
$u = -0.672633 + 0.537761I$ $a = 0.700704 + 0.223927I$ $b = -0.070949 + 0.745220I$	$1.00907 - 1.48984I$	0
$u = -0.672633 + 0.537761I$ $a = 0.366009 + 0.141153I$ $b = -0.238709 + 0.765604I$	$1.00907 - 1.48984I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.672633 - 0.537761I$		
$a = 0.700704 - 0.223927I$	$1.00907 + 1.48984I$	0
$b = -0.070949 - 0.745220I$		
$u = -0.672633 - 0.537761I$		
$a = 0.366009 - 0.141153I$	$1.00907 + 1.48984I$	0
$b = -0.238709 - 0.765604I$		
$u = 1.138920 + 0.031815I$		
$a = -0.333583 - 0.002836I$	$1.44895 - 7.28692I$	0
$b = -0.742864 - 0.571712I$		
$u = 1.138920 + 0.031815I$		
$a = -0.217720 + 0.177541I$	$1.44895 - 7.28692I$	0
$b = 0.448038 + 0.660923I$		
$u = 1.138920 - 0.031815I$		
$a = -0.333583 + 0.002836I$	$1.44895 + 7.28692I$	0
$b = -0.742864 + 0.571712I$		
$u = 1.138920 - 0.031815I$		
$a = -0.217720 - 0.177541I$	$1.44895 + 7.28692I$	0
$b = 0.448038 - 0.660923I$		
$u = 0.238880 + 0.820187I$		
$a = 0.156697 + 0.485104I$	$2.48746 + 3.85476I$	0
$b = -0.035015 - 1.126980I$		
$u = 0.238880 + 0.820187I$		
$a = -2.55449 + 0.21279I$	$2.48746 + 3.85476I$	0
$b = -1.276420 + 0.542335I$		
$u = 0.238880 - 0.820187I$		
$a = 0.156697 - 0.485104I$	$2.48746 - 3.85476I$	0
$b = -0.035015 + 1.126980I$		
$u = 0.238880 - 0.820187I$		
$a = -2.55449 - 0.21279I$	$2.48746 - 3.85476I$	0
$b = -1.276420 - 0.542335I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.103690 + 0.323525I$ $a = 0.414768 - 0.622036I$ $b = 0.974217 - 0.303836I$	$-2.25957 + 1.41639I$	0
$u = -1.103690 + 0.323525I$ $a = -0.166752 + 0.185437I$ $b = 0.720405 + 0.170199I$	$-2.25957 + 1.41639I$	0
$u = -1.103690 - 0.323525I$ $a = 0.414768 + 0.622036I$ $b = 0.974217 + 0.303836I$	$-2.25957 - 1.41639I$	0
$u = -1.103690 - 0.323525I$ $a = -0.166752 - 0.185437I$ $b = 0.720405 - 0.170199I$	$-2.25957 - 1.41639I$	0
$u = 0.241837 + 0.790005I$ $a = 0.410280 + 0.896100I$ $b = 0.65320 + 1.39320I$	$2.56696 - 1.36471I$	0
$u = 0.241837 + 0.790005I$ $a = 2.17782 - 0.57452I$ $b = 0.333964 - 0.312127I$	$2.56696 - 1.36471I$	0
$u = 0.241837 - 0.790005I$ $a = 0.410280 - 0.896100I$ $b = 0.65320 - 1.39320I$	$2.56696 + 1.36471I$	0
$u = 0.241837 - 0.790005I$ $a = 2.17782 + 0.57452I$ $b = 0.333964 + 0.312127I$	$2.56696 + 1.36471I$	0
$u = 0.735955 + 0.366481I$ $a = 1.019340 - 0.197301I$ $b = -0.389669 - 0.546262I$	$-0.28033 - 2.80322I$	0
$u = 0.735955 + 0.366481I$ $a = 0.188635 + 0.389701I$ $b = 0.909076 + 0.773195I$	$-0.28033 - 2.80322I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.735955 - 0.366481I$		
$a = 1.019340 + 0.197301I$	$-0.28033 + 2.80322I$	0
$b = -0.389669 + 0.546262I$		
$u = 0.735955 - 0.366481I$		
$a = 0.188635 - 0.389701I$	$-0.28033 + 2.80322I$	0
$b = 0.909076 - 0.773195I$		
$u = 0.094498 + 0.810609I$		
$a = -1.39840 + 0.78719I$	$-2.29915 + 2.68091I$	0
$b = 0.133205 - 0.798703I$		
$u = 0.094498 + 0.810609I$		
$a = -2.38347 - 1.36712I$	$-2.29915 + 2.68091I$	0
$b = -1.43027 - 1.09167I$		
$u = 0.094498 - 0.810609I$		
$a = -1.39840 - 0.78719I$	$-2.29915 - 2.68091I$	0
$b = 0.133205 + 0.798703I$		
$u = 0.094498 - 0.810609I$		
$a = -2.38347 + 1.36712I$	$-2.29915 - 2.68091I$	0
$b = -1.43027 + 1.09167I$		
$u = 0.791037 + 0.088055I$		
$a = 0.403140 - 0.204286I$	$-4.13126 + 4.05336I$	0
$b = -0.936792 + 0.682028I$		
$u = 0.791037 + 0.088055I$		
$a = 0.063018 + 0.398735I$	$-4.13126 + 4.05336I$	0
$b = 1.137980 - 0.583120I$		
$u = 0.791037 - 0.088055I$		
$a = 0.403140 + 0.204286I$	$-4.13126 - 4.05336I$	0
$b = -0.936792 - 0.682028I$		
$u = 0.791037 - 0.088055I$		
$a = 0.063018 - 0.398735I$	$-4.13126 - 4.05336I$	0
$b = 1.137980 + 0.583120I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.221374 + 0.714341I$ $a = 0.80390 - 1.23448I$ $b = -0.334124 + 0.820846I$	$-2.74969 + 0.47980I$	0
$u = -0.221374 + 0.714341I$ $a = 2.39693 + 1.36979I$ $b = 1.21628 + 1.26794I$	$-2.74969 + 0.47980I$	0
$u = -0.221374 - 0.714341I$ $a = 0.80390 + 1.23448I$ $b = -0.334124 - 0.820846I$	$-2.74969 - 0.47980I$	0
$u = -0.221374 - 0.714341I$ $a = 2.39693 - 1.36979I$ $b = 1.21628 - 1.26794I$	$-2.74969 - 0.47980I$	0
$u = 0.517983 + 1.181470I$ $a = 1.086770 + 0.214441I$ $b = 1.00227 - 1.00595I$	$-2.89237 + 7.65895I$	0
$u = 0.517983 + 1.181470I$ $a = -1.80028 - 0.29267I$ $b = -1.39808 + 0.73198I$	$-2.89237 + 7.65895I$	0
$u = 0.517983 - 1.181470I$ $a = 1.086770 - 0.214441I$ $b = 1.00227 + 1.00595I$	$-2.89237 - 7.65895I$	0
$u = 0.517983 - 1.181470I$ $a = -1.80028 + 0.29267I$ $b = -1.39808 - 0.73198I$	$-2.89237 - 7.65895I$	0
$u = 0.422325 + 1.244260I$ $a = 1.78834 + 0.08633I$ $b = 1.46864 - 1.11575I$	$-8.06615 + 8.37472I$	0
$u = 0.422325 + 1.244260I$ $a = -1.80553 - 0.42586I$ $b = -1.36069 + 0.90546I$	$-8.06615 + 8.37472I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.422325 - 1.244260I$		
$a = 1.78834 - 0.08633I$	$-8.06615 - 8.37472I$	0
$b = 1.46864 + 1.11575I$		
$u = 0.422325 - 1.244260I$		
$a = -1.80553 + 0.42586I$	$-8.06615 - 8.37472I$	0
$b = -1.36069 - 0.90546I$		
$u = 0.544091 + 1.203040I$		
$a = 0.646894 + 0.722339I$	$-7.22912 + 0.80652I$	0
$b = 1.124650 - 0.048484I$		
$u = 0.544091 + 1.203040I$		
$a = -0.869736 - 0.946587I$	$-7.22912 + 0.80652I$	0
$b = -1.187280 - 0.155362I$		
$u = 0.544091 - 1.203040I$		
$a = 0.646894 - 0.722339I$	$-7.22912 - 0.80652I$	0
$b = 1.124650 + 0.048484I$		
$u = 0.544091 - 1.203040I$		
$a = -0.869736 + 0.946587I$	$-7.22912 - 0.80652I$	0
$b = -1.187280 + 0.155362I$		
$u = 0.296459 + 1.290860I$		
$a = 1.63514 - 0.09933I$	$-8.82587 + 2.96182I$	0
$b = 1.56041 - 0.85766I$		
$u = 0.296459 + 1.290860I$		
$a = -1.32416 - 0.97191I$	$-8.82587 + 2.96182I$	0
$b = -0.956741 + 0.321287I$		
$u = 0.296459 - 1.290860I$		
$a = 1.63514 + 0.09933I$	$-8.82587 - 2.96182I$	0
$b = 1.56041 + 0.85766I$		
$u = 0.296459 - 1.290860I$		
$a = -1.32416 + 0.97191I$	$-8.82587 - 2.96182I$	0
$b = -0.956741 - 0.321287I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.279436 + 1.309240I$		
$a = 1.29390 - 1.08416I$	$-8.7364 - 11.5889I$	0
$b = 0.812465 + 0.285098I$		
$u = -0.279436 + 1.309240I$		
$a = 1.73976 + 0.37496I$	$-8.7364 - 11.5889I$	0
$b = 1.65816 + 1.01293I$		
$u = -0.279436 - 1.309240I$		
$a = 1.29390 + 1.08416I$	$-8.7364 + 11.5889I$	0
$b = 0.812465 - 0.285098I$		
$u = -0.279436 - 1.309240I$		
$a = 1.73976 - 0.37496I$	$-8.7364 + 11.5889I$	0
$b = 1.65816 - 1.01293I$		
$u = -0.610989 + 0.182482I$		
$a = 0.742721 + 0.108824I$	$1.43131 + 2.87646I$	$0. - 4.65453I$
$b = -0.008450 - 0.991596I$		
$u = -0.610989 + 0.182482I$		
$a = -1.09209 + 0.95854I$	$1.43131 + 2.87646I$	$0. - 4.65453I$
$b = -0.659765 - 0.535270I$		
$u = -0.610989 - 0.182482I$		
$a = 0.742721 - 0.108824I$	$1.43131 - 2.87646I$	$0. + 4.65453I$
$b = -0.008450 + 0.991596I$		
$u = -0.610989 - 0.182482I$		
$a = -1.09209 - 0.95854I$	$1.43131 - 2.87646I$	$0. + 4.65453I$
$b = -0.659765 + 0.535270I$		
$u = 0.312100 + 0.545995I$		
$a = 0.370441 + 0.922008I$	$-2.70558 - 9.77077I$	$-2.00000 + 3.55494I$
$b = -0.543290 - 1.130310I$		
$u = 0.312100 + 0.545995I$		
$a = -2.82444 + 0.99749I$	$-2.70558 - 9.77077I$	$-2.00000 + 3.55494I$
$b = -0.835381 + 1.139420I$		



Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.312100 - 0.545995I$ $a = 0.370441 - 0.922008I$ $b = -0.543290 + 1.130310I$	$-2.70558 + 9.77077I$	$-2.00000 - 3.55494I$
$u = 0.312100 - 0.545995I$ $a = -2.82444 - 0.99749I$ $b = -0.835381 - 1.139420I$	$-2.70558 + 9.77077I$	$-2.00000 - 3.55494I$
$u = -0.336943 + 1.372960I$ $a = -0.904487 + 0.749414I$ $b = -0.722633 - 0.293307I$	$-7.87845 - 3.31263I$	0
$u = -0.336943 + 1.372960I$ $a = -1.45001 - 0.05513I$ $b = -1.37034 - 0.60102I$	$-7.87845 - 3.31263I$	0
$u = -0.336943 - 1.372960I$ $a = -0.904487 - 0.749414I$ $b = -0.722633 + 0.293307I$	$-7.87845 + 3.31263I$	0
$u = -0.336943 - 1.372960I$ $a = -1.45001 + 0.05513I$ $b = -1.37034 + 0.60102I$	$-7.87845 + 3.31263I$	0
$u = 0.56467 + 1.31693I$ $a = 1.57126 + 0.30257I$ $b = 1.37236 - 0.93787I$	$-7.0565 + 13.1922I$	0
$u = 0.56467 + 1.31693I$ $a = -1.74538 - 0.17581I$ $b = -1.52126 + 0.96238I$	$-7.0565 + 13.1922I$	0
$u = 0.56467 - 1.31693I$ $a = 1.57126 - 0.30257I$ $b = 1.37236 + 0.93787I$	$-7.0565 - 13.1922I$	0
$u = 0.56467 - 1.31693I$ $a = -1.74538 + 0.17581I$ $b = -1.52126 - 0.96238I$	$-7.0565 - 13.1922I$	0

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.64708 + 1.30660I$		
$a = 0.837658 + 0.325626I$	$-5.98382 + 7.21430I$	0
$b = 1.044720 - 0.617271I$		
$u = 0.64708 + 1.30660I$		
$a = -1.42737 - 0.49039I$	$-5.98382 + 7.21430I$	0
$b = -1.365980 + 0.339583I$		
$u = 0.64708 - 1.30660I$		
$a = 0.837658 - 0.325626I$	$-5.98382 - 7.21430I$	0
$b = 1.044720 + 0.617271I$		
$u = 0.64708 - 1.30660I$		
$a = -1.42737 + 0.49039I$	$-5.98382 - 7.21430I$	0
$b = -1.365980 - 0.339583I$		
$u = 0.56653 + 1.34749I$		
$a = -1.247200 + 0.138847I$	$-2.64650 + 13.26040I$	0
$b = -1.09771 + 1.07434I$		
$u = 0.56653 + 1.34749I$		
$a = 1.56235 + 0.24571I$	$-2.64650 + 13.26040I$	0
$b = 1.175880 - 0.731412I$		
$u = 0.56653 - 1.34749I$		
$a = -1.247200 - 0.138847I$	$-2.64650 - 13.26040I$	0
$b = -1.09771 - 1.07434I$		
$u = 0.56653 - 1.34749I$		
$a = 1.56235 - 0.24571I$	$-2.64650 - 13.26040I$	0
$b = 1.175880 + 0.731412I$		
$u = 1.09906 + 0.97294I$		
$a = 0.962472 + 0.344753I$	$-3.08762 - 0.32452I$	0
$b = 1.117660 - 0.046805I$		
$u = 1.09906 + 0.97294I$		
$a = -0.002525 - 0.249222I$	$-3.08762 - 0.32452I$	0
$b = -0.551521 + 0.279360I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.09906 - 0.97294I$		
$a = 0.962472 - 0.344753I$	$-3.08762 + 0.32452I$	0
$b = 1.117660 + 0.046805I$		
$u = 1.09906 - 0.97294I$		
$a = -0.002525 + 0.249222I$	$-3.08762 + 0.32452I$	0
$b = -0.551521 - 0.279360I$		
$u = 0.38368 + 1.42170I$		
$a = 0.912242 + 0.497870I$	$-8.36038 - 2.00637I$	0
$b = 1.116230 - 0.050445I$		
$u = 0.38368 + 1.42170I$		
$a = -0.693370 - 0.820388I$	$-8.36038 - 2.00637I$	0
$b = -0.857801 - 0.079626I$		
$u = 0.38368 - 1.42170I$		
$a = 0.912242 - 0.497870I$	$-8.36038 + 2.00637I$	0
$b = 1.116230 + 0.050445I$		
$u = 0.38368 - 1.42170I$		
$a = -0.693370 + 0.820388I$	$-8.36038 + 2.00637I$	0
$b = -0.857801 + 0.079626I$		
$u = -0.59706 + 1.37249I$		
$a = -0.832748 + 0.310079I$	$-5.82550 - 8.00510I$	0
$b = -0.861679 - 0.619616I$		
$u = -0.59706 + 1.37249I$		
$a = -1.44323 + 0.17768I$	$-5.82550 - 8.00510I$	0
$b = -1.293270 - 0.515378I$		
$u = -0.59706 - 1.37249I$		
$a = -0.832748 - 0.310079I$	$-5.82550 + 8.00510I$	0
$b = -0.861679 + 0.619616I$		
$u = -0.59706 - 1.37249I$		
$a = -1.44323 - 0.17768I$	$-5.82550 + 8.00510I$	0
$b = -1.293270 + 0.515378I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.353978 + 0.325484I$ $a = 0.701584 + 0.254629I$ $b = 0.701673 + 0.801514I$	$-0.54859 - 2.62342I$	$0.36792 + 3.01365I$
$u = 0.353978 + 0.325484I$ $a = 2.38026 + 0.04568I$ $b = 0.177971 - 0.193614I$	$-0.54859 - 2.62342I$	$0.36792 + 3.01365I$
$u = 0.353978 - 0.325484I$ $a = 0.701584 - 0.254629I$ $b = 0.701673 - 0.801514I$	$-0.54859 + 2.62342I$	$0.36792 - 3.01365I$
$u = 0.353978 - 0.325484I$ $a = 2.38026 - 0.04568I$ $b = 0.177971 + 0.193614I$	$-0.54859 + 2.62342I$	$0.36792 - 3.01365I$
$u = -0.15952 + 1.64324I$ $a = 0.073941 + 0.533471I$ $b = 0.031397 + 1.065020I$	$-3.87311 - 0.19130I$	0
$u = -0.15952 + 1.64324I$ $a = 1.50690 + 0.07344I$ $b = 0.866667 + 0.154700I$	$-3.87311 - 0.19130I$	0
$u = -0.15952 - 1.64324I$ $a = 0.073941 - 0.533471I$ $b = 0.031397 - 1.065020I$	$-3.87311 + 0.19130I$	0
$u = -0.15952 - 1.64324I$ $a = 1.50690 - 0.07344I$ $b = 0.866667 - 0.154700I$	$-3.87311 + 0.19130I$	0
$u = -0.1183770 + 0.0006031I$ $a = 5.40595 - 5.28157I$ $b = 0.731777 + 1.112370I$	$-1.84337 - 2.21647I$	$-5.77974 + 5.00908I$
$u = -0.1183770 + 0.0006031I$ $a = -6.68316 - 8.66836I$ $b = -0.549459 + 0.759716I$	$-1.84337 - 2.21647I$	$-5.77974 + 5.00908I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.1183770 - 0.0006031I$		
$a = 5.40595 + 5.28157I$	$-1.84337 + 2.21647I$	$-5.77974 - 5.00908I$
$b = 0.731777 - 1.112370I$		
$u = -0.1183770 - 0.0006031I$		
$a = -6.68316 + 8.66836I$	$-1.84337 + 2.21647I$	$-5.77974 - 5.00908I$
$b = -0.549459 - 0.759716I$		

**III.**

$$I_3^u = \langle -3.37 \times 10^{13} u^{32} - 2.50 \times 10^{14} u^{31} + \dots + 1.31 \times 10^{13} b - 1.99 \times 10^{12}, -3.17 \times 10^{13} u^{32} - 2.68 \times 10^{14} u^{31} + \dots + 1.31 \times 10^{13} a - 5.64 \times 10^{13}, u^{33} + 8u^{32} + \dots - 2u + 1 \rangle$$

**(i) Arc colorings**

$$\begin{aligned} a_5 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_8 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 1 \\ -u^2 \end{pmatrix} \\ a_{12} &= \begin{pmatrix} 2.41999u^{32} + 20.4253u^{31} + \dots - 2.05301u + 4.30032 \\ 2.57165u^{32} + 19.0669u^{31} + \dots + 3.84536u + 0.151653 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -3.37539u^{32} - 27.6561u^{31} + \dots - 8.76591u + 2.52807 \\ -1.07430u^{32} - 8.17310u^{31} + \dots - 5.37520u + 2.30109 \end{pmatrix} \\ a_1 &= \begin{pmatrix} -0.151653u^{32} + 1.35842u^{31} + \dots - 5.89836u + 4.14866 \\ 2.57165u^{32} + 19.0669u^{31} + \dots + 3.84536u + 0.151653 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 1.71934u^{32} + 15.0624u^{31} + \dots - 4.74405u + 3.80005 \\ 1.30769u^{32} + 9.73560u^{31} + \dots + 8.23872u - 1.71934 \end{pmatrix} \\ a_4 &= \begin{pmatrix} -u \\ u^3 + u \end{pmatrix} \\ a_2 &= \begin{pmatrix} 1.41165u^{32} + 12.9451u^{31} + \dots - 3.01122u + 3.16193 \\ 2.14448u^{32} + 15.6413u^{31} + \dots + 4.36101u + 0.218635 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -6.27672u^{32} - 48.8464u^{31} + \dots - 13.1175u + 0.596637 \\ 1.78862u^{32} + 16.3808u^{31} + \dots - 10.8043u + 7.35102 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 1.55307u^{32} + 11.1871u^{31} + \dots + 11.4413u - 5.83476 \\ -1.79475u^{32} - 15.3992u^{31} + \dots - 0.163285u - 3.20852 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 3.07987u^{32} + 24.9268u^{31} + \dots - 7.22036u + 6.93051 \\ -0.755638u^{32} - 5.46565u^{31} + \dots + 6.01706u - 2.43610 \end{pmatrix} \end{aligned}$$

**(ii) Obstruction class = 1**

**(iii) Cusp Shapes**

$$= -\frac{241066255372434}{13110454304539} u^{32} - \frac{1631858683939795}{13110454304539} u^{31} + \dots - \frac{1761796307433707}{13110454304539} u + \frac{645104920453088}{13110454304539}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_9$	$u^{33} - 7u^{32} + \dots + 12u - 4$
$c_2, c_6$	$u^{33} + 3u^{31} + \dots + 3u - 1$
$c_3, c_7$	$u^{33} + 2u^{32} + \dots - u + 1$
$c_4$	$u^{33} - 8u^{32} + \dots - 2u - 1$
$c_5, c_{12}$	$u^{33} - u^{32} + \dots + 5u + 1$
$c_8$	$u^{33} + 8u^{32} + \dots - 2u + 1$
$c_{10}$	$u^{33} + 15u^{32} + \dots - 2u + 1$
$c_{11}$	$u^{33} + 21u^{32} + \dots + 13734u + 1219$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_9$	$y^{33} - y^{32} + \dots - 208y - 16$
$c_2, c_6$	$y^{33} + 6y^{32} + \dots - 5y - 1$
$c_3, c_7$	$y^{33} + 16y^{32} + \dots + y - 1$
$c_4, c_8$	$y^{33} + 16y^{32} + \dots + 6y - 1$
$c_5, c_{12}$	$y^{33} + 3y^{32} + \dots + 25y - 1$
$c_{10}$	$y^{33} - 17y^{32} + \dots + 22y - 1$
$c_{11}$	$y^{33} - 21y^{32} + \dots - 11983198y - 1485961$



(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.121311 + 1.035350I$ $a = -1.79267 + 0.60857I$ $b = -1.200190 - 0.481222I$	$-3.58069 + 2.74893I$	$-5.86838 - 2.60997I$
$u = 0.121311 - 1.035350I$ $a = -1.79267 - 0.60857I$ $b = -1.200190 + 0.481222I$	$-3.58069 - 2.74893I$	$-5.86838 + 2.60997I$
$u = -1.067610 + 0.198481I$ $a = -0.000038 - 0.238078I$ $b = 1.074700 - 0.604348I$	$-2.44265 + 6.08467I$	$-3.26458 - 5.66083I$
$u = -1.067610 - 0.198481I$ $a = -0.000038 + 0.238078I$ $b = 1.074700 + 0.604348I$	$-2.44265 - 6.08467I$	$-3.26458 + 5.66083I$
$u = -0.293017 + 0.859240I$ $a = -2.31043 - 0.96823I$ $b = -0.31920 - 2.01877I$	$1.17052 - 1.31692I$	$-14.4007 - 2.7179I$
$u = -0.293017 - 0.859240I$ $a = -2.31043 + 0.96823I$ $b = -0.31920 + 2.01877I$	$1.17052 + 1.31692I$	$-14.4007 + 2.7179I$
$u = 0.422871 + 1.034830I$ $a = -0.945443 + 0.010885I$ $b = -0.514493 - 0.310188I$	$-0.00733 + 5.22554I$	$0.05918 - 6.16589I$
$u = 0.422871 - 1.034830I$ $a = -0.945443 - 0.010885I$ $b = -0.514493 + 0.310188I$	$-0.00733 - 5.22554I$	$0.05918 + 6.16589I$
$u = -0.452925 + 0.744625I$ $a = 1.56783 + 0.51367I$ $b = 0.11518 + 1.55194I$	$2.45474 - 1.86613I$	$9.60720 + 6.24564I$
$u = -0.452925 - 0.744625I$ $a = 1.56783 - 0.51367I$ $b = 0.11518 - 1.55194I$	$2.45474 + 1.86613I$	$9.60720 - 6.24564I$

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.044199 + 0.868687I$ $a = 1.75312 - 0.94012I$ $b = 1.203550 + 0.417402I$	$-2.82700 - 1.90987I$	$-4.26594 + 3.63494I$
$u = 0.044199 - 0.868687I$ $a = 1.75312 + 0.94012I$ $b = 1.203550 - 0.417402I$	$-2.82700 + 1.90987I$	$-4.26594 - 3.63494I$
$u = 1.077130 + 0.454582I$ $a = 0.333258 + 0.167746I$ $b = 0.163284 + 0.124186I$	$2.44401 - 0.32261I$	$9.10886 - 1.91412I$
$u = 1.077130 - 0.454582I$ $a = 0.333258 - 0.167746I$ $b = 0.163284 - 0.124186I$	$2.44401 + 0.32261I$	$9.10886 + 1.91412I$
$u = -1.18968$ $a = 0.133521$ $b = 0.837433$	$-2.65696$	$-14.9700$
$u = -0.252781 + 1.257190I$ $a = 1.52778 + 0.32112I$ $b = 0.805301 + 1.106940I$	$-6.26401 - 11.65410I$	$-7.29150 + 9.37200I$
$u = -0.252781 - 1.257190I$ $a = 1.52778 - 0.32112I$ $b = 0.805301 - 1.106940I$	$-6.26401 + 11.65410I$	$-7.29150 - 9.37200I$
$u = 0.051741 + 0.704817I$ $a = 1.94505 + 1.26748I$ $b = 0.111511 + 1.291090I$	$-3.52569 + 10.82130I$	$-6.52075 - 7.98343I$
$u = 0.051741 - 0.704817I$ $a = 1.94505 - 1.26748I$ $b = 0.111511 - 1.291090I$	$-3.52569 - 10.82130I$	$-6.52075 + 7.98343I$
$u = -1.345720 + 0.410910I$ $a = -0.191138 + 0.048775I$ $b = -0.489792 - 0.165109I$	$0.44562 - 7.68714I$	$-15.1738 + 15.3000I$

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.345720 - 0.410910I$ $a = -0.191138 - 0.048775I$ $b = -0.489792 + 0.165109I$	$0.44562 + 7.68714I$	$-15.1738 - 15.3000I$
$u = 0.016128 + 0.588840I$ $a = 2.07196 + 0.07437I$ $b = 0.513741 + 0.904157I$	$2.60247 - 2.51371I$	$3.02355 + 5.03986I$
$u = 0.016128 - 0.588840I$ $a = 2.07196 - 0.07437I$ $b = 0.513741 - 0.904157I$	$2.60247 + 2.51371I$	$3.02355 - 5.03986I$
$u = -0.43817 + 1.34776I$ $a = -1.324760 + 0.312143I$ $b = -1.172990 - 0.607527I$	$-7.38459 - 5.54422I$	$-12.27244 + 0.I$
$u = -0.43817 - 1.34776I$ $a = -1.324760 - 0.312143I$ $b = -1.172990 + 0.607527I$	$-7.38459 + 5.54422I$	$-12.27244 + 0.I$
$u = -0.59476 + 1.30972I$ $a = -1.55385 + 0.30875I$ $b = -1.43398 - 0.84056I$	$-5.94875 - 12.07960I$	0
$u = -0.59476 - 1.30972I$ $a = -1.55385 - 0.30875I$ $b = -1.43398 + 0.84056I$	$-5.94875 + 12.07960I$	0
$u = -0.37009 + 1.39319I$ $a = -0.859056 + 0.617766I$ $b = -0.995740 - 0.060644I$	$-7.66332 + 1.14028I$	0
$u = -0.37009 - 1.39319I$ $a = -0.859056 - 0.617766I$ $b = -0.995740 + 0.060644I$	$-7.66332 - 1.14028I$	0
$u = -0.58422 + 1.39916I$ $a = 0.805154 - 0.216770I$ $b = 0.790382 + 0.354295I$	$-3.35263 + 0.63275I$	0

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.58422 - 1.39916I$		
$a = 0.805154 + 0.216770I$	$-3.35263 - 0.63275I$	0
$b = 0.790382 - 0.354295I$		
$u = 0.260752 + 0.066297I$		
$a = 1.40647 - 3.27086I$	$-0.98077 + 3.44056I$	$-4.9621 - 13.3967I$
$b = 0.430015 - 0.625140I$		
$u = 0.260752 - 0.066297I$		
$a = 1.40647 + 3.27086I$	$-0.98077 - 3.44056I$	$-4.9621 + 13.3967I$
$b = 0.430015 + 0.625140I$		

$$\text{IV. } I_4^u = \langle 2u^5a - 4u^5 + \cdots - a + 3, -2u^5a - 2u^5 + \cdots + a - 2, 2u^6 - 5u^5 + 9u^4 - 9u^3 + 7u^2 - 4u + 1 \rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} a \\ -2u^5a + 4u^5 + \cdots + a - 3 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -2u^5a + 5u^4a - 9u^3a + 2u^4 + 8u^2a - u^3 - 6au + u^2 + 2a + 4u - 1 \\ -6u^5a + 8u^5 + \cdots + 4a - 7 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2u^5a - 3u^4a - 4u^5 + 6u^3a + 6u^4 - 3u^2a - 12u^3 + 4au + 8u^2 - 9u + 3 \\ -2u^5a + 4u^5 + \cdots + a - 3 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -4u^5a + 6u^4a + 2u^5 - 12u^3a - u^4 + 8u^2a + u^3 - 9au + 4u^2 + 3a \\ 2u^5 - 3u^4 + 4u^3 - 2u^2 + 2u - 1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -4u^5 + u^3a + 6u^4 - 11u^3 + au + 7u^2 + a - 7u + 2 \\ u^5a + 3u^5 + \cdots - a - 2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2u^5a + 6u^5 + \cdots + a - 2 \\ 2u^5a - 5u^4a + 8u^3a - 7u^2a - u^3 + 5au + 3u^2 - 2a - 3u + 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -10u^5a + 14u^5 + \cdots + 8a - 9 \\ 2u^5a - 6u^5 + \cdots - a + 6 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 10u^5a - 10u^5 + \cdots - 8a + 8 \\ -6u^5a + 14u^5 + \cdots + 4a - 11 \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -\frac{65}{4}u^5 + \frac{205}{4}u^4 - \frac{349}{4}u^3 + \frac{337}{4}u^2 - \frac{101}{2}u + \frac{47}{4}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_9$	$4(4u^{12} + 3u^{11} + \dots - 15u + 8)$
$c_2, c_6$	$2(2u^{12} + 3u^{11} + \dots - 5u + 1)$
$c_3, c_7$	$4(4u^{12} + 9u^{11} + \dots + 39u + 22)$
$c_4$	$4(2u^6 + 5u^5 + 9u^4 + 9u^3 + 7u^2 + 4u + 1)^2$
$c_5, c_{12}$	$u^{12} + 3u^{11} + \dots + 11u + 2$
$c_8$	$4(2u^6 - 5u^5 + 9u^4 - 9u^3 + 7u^2 - 4u + 1)^2$
$c_{10}$	$4(2u^6 - 9u^5 + 19u^4 - 23u^3 + 18u^2 - 7u + 1)^2$
$c_{11}$	$(u^6 - u^5 + u^4 - 2u^3 + u^2 - u + 2)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_9$	$16(16y^{12} - 57y^{11} + \dots - 673y + 64)$
$c_2, c_6$	$4(4y^{12} + 7y^{11} + \dots - 15y + 1)$
$c_3, c_7$	$16(16y^{12} + 207y^{11} + \dots + 2791y + 484)$
$c_4, c_8$	$16(4y^6 + 11y^5 + 19y^4 + 9y^3 - 5y^2 - 2y + 1)^2$
$c_5, c_{12}$	$y^{12} + 7y^{11} + \dots + 11y + 4$
$c_{10}$	$16(4y^6 - 5y^5 + 19y^4 + 33y^3 + 40y^2 - 13y + 1)^2$
$c_{11}$	$(y^6 + y^5 - y^4 + y^2 + 3y + 4)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_4^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.006436 + 0.874144I$ $a = 0.48205 + 2.03343I$ $b = 0.86375 + 2.52513I$	$-2.94260 - 1.97215I$	$-23.3665 + 5.7693I$
$u = -0.006436 + 0.874144I$ $a = 3.31353 - 1.33982I$ $b = 0.432272 - 0.330500I$	$-2.94260 - 1.97215I$	$-23.3665 + 5.7693I$
$u = -0.006436 - 0.874144I$ $a = 0.48205 - 2.03343I$ $b = 0.86375 - 2.52513I$	$-2.94260 + 1.97215I$	$-23.3665 - 5.7693I$
$u = -0.006436 - 0.874144I$ $a = 3.31353 + 1.33982I$ $b = 0.432272 + 0.330500I$	$-2.94260 + 1.97215I$	$-23.3665 - 5.7693I$
$u = 0.672863 + 1.178830I$ $a = 0.677335 + 0.591356I$ $b = 0.978852 - 0.490041I$	$-4.71392 + 8.53123I$	$-6.00968 - 11.09535I$
$u = 0.672863 + 1.178830I$ $a = -1.43372 - 0.43308I$ $b = -1.47766 + 0.37220I$	$-4.71392 + 8.53123I$	$-6.00968 - 11.09535I$
$u = 0.672863 - 1.178830I$ $a = 0.677335 - 0.591356I$ $b = 0.978852 + 0.490041I$	$-4.71392 - 8.53123I$	$-6.00968 + 11.09535I$
$u = 0.672863 - 1.178830I$ $a = -1.43372 + 0.43308I$ $b = -1.47766 - 0.37220I$	$-4.71392 - 8.53123I$	$-6.00968 + 11.09535I$
$u = 0.583572 + 0.120772I$ $a = 0.610974 - 0.102954I$ $b = 0.553250 + 0.856277I$	$-0.56815 - 2.00437I$	$-1.58088 - 1.16654I$
$u = 0.583572 + 0.120772I$ $a = 1.34983 + 0.66609I$ $b = 0.149535 - 0.552809I$	$-0.56815 - 2.00437I$	$-1.58088 - 1.16654I$



	Solutions to $I_4^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$0.583572 - 0.120772I$	$-0.56815 + 2.00437I$	$-1.58088 + 1.16654I$
$a =$	$0.610974 + 0.102954I$		
$b =$	$0.553250 - 0.856277I$		
$u =$	$0.583572 - 0.120772I$	$-0.56815 + 2.00437I$	$-1.58088 + 1.16654I$
$a =$	$1.34983 - 0.66609I$		
$b =$	$0.149535 + 0.552809I$		

## V. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1, c_9$	$4(4u^{12} + 3u^{11} + \dots - 15u + 8)(u^{33} - 7u^{32} + \dots + 12u - 4)$ $\cdot (u^{52} + u^{51} + \dots - 52u^3 + 4)$
$c_2, c_6$	$2(2u^{12} + 3u^{11} + \dots - 5u + 1)(u^{33} + 3u^{31} + \dots + 3u - 1)$ $\cdot (u^{52} - 3u^{50} + \dots - 3u + 1)$
$c_3, c_7$	$4(4u^{12} + 9u^{11} + \dots + 39u + 22)(u^{33} + 2u^{32} + \dots - u + 1)$ $\cdot (u^{52} + 2u^{51} + \dots + 23u + 71)$
$c_4$	$4(2u^6 + 5u^5 + \dots + 4u + 1)^2(u^{33} - 8u^{32} + \dots - 2u - 1)$ $\cdot (u^{52} - 19u^{51} + \dots - 4304u + 352)$
$c_5, c_{12}$	$(u^{12} + 3u^{11} + \dots + 11u + 2)(u^{33} - u^{32} + \dots + 5u + 1)$ $\cdot (u^{52} + u^{51} + \dots + u + 1)$
$c_8$	$4(2u^6 - 5u^5 + \dots - 4u + 1)^2(u^{33} + 8u^{32} + \dots - 2u + 1)$ $\cdot (u^{52} - 19u^{51} + \dots - 4304u + 352)$
$c_{10}$	$4(2u^6 - 9u^5 + 19u^4 - 23u^3 + 18u^2 - 7u + 1)^2$ $\cdot (u^{33} + 15u^{32} + \dots - 2u + 1)(u^{52} + 48u^{51} + \dots + 557056u + 16384)$
$c_{11}$	$(u^6 - u^5 + u^4 - 2u^3 + u^2 - u + 2)^2$ $\cdot (u^{33} + 21u^{32} + \dots + 13734u + 1219)$ $\cdot (u^{52} + 42u^{51} + \dots + 4266320u + 202144)$

## VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1, c_9$	$16(16y^{12} - 57y^{11} + \dots - 673y + 64)(y^{33} - y^{32} + \dots - 208y - 16)$ $\cdot (y^{52} - 9y^{51} + \dots - 512y^2 + 16)$
$c_2, c_6$	$4(4y^{12} + 7y^{11} + \dots - 15y + 1)(y^{33} + 6y^{32} + \dots - 5y - 1)$ $\cdot (y^{52} - 6y^{51} + \dots - 11y + 1)$
$c_3, c_7$	$16(16y^{12} + 207y^{11} + \dots + 2791y + 484)(y^{33} + 16y^{32} + \dots + y - 1)$ $\cdot (y^{52} + 24y^{51} + \dots + 176687y + 5041)$
$c_4, c_8$	$16(4y^6 + 11y^5 + 19y^4 + 9y^3 - 5y^2 - 2y + 1)^2$ $\cdot (y^{33} + 16y^{32} + \dots + 6y - 1)(y^{52} + 25y^{51} + \dots - 361216y + 123904)$
$c_5, c_{12}$	$(y^{12} + 7y^{11} + \dots + 11y + 4)(y^{33} + 3y^{32} + \dots + 25y - 1)$ $\cdot (y^{52} - 37y^{51} + \dots - 89y + 1)$
$c_{10}$	$16(4y^6 - 5y^5 + 19y^4 + 33y^3 + 40y^2 - 13y + 1)^2$ $\cdot (y^{33} - 17y^{32} + \dots + 22y - 1)$ $\cdot (y^{52} - 18y^{51} + \dots - 20535312384y + 268435456)$
$c_{11}$	$(y^6 + y^5 - y^4 + y^2 + 3y + 4)^2$ $\cdot (y^{33} - 21y^{32} + \dots - 11983198y - 1485961)$ $\cdot (y^{52} + 30y^{50} + \dots + 152596979968y + 40862196736)$