



$$\text{I. } I_1^u = \langle -2.70 \times 10^{176} u^{48} + 7.34 \times 10^{176} u^{47} + \dots + 3.68 \times 10^{181} b + 1.38 \times 10^{180}, 1.67 \times 10^{178} u^{48} - 4.46 \times 10^{178} u^{47} + \dots + 7.36 \times 10^{181} a - 1.27 \times 10^{182}, u^{49} - 3u^{48} + \dots + 22528u - 8192 \rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -0.000226567u^{48} + 0.000606629u^{47} + \dots + 1.52293u + 1.72464 \\ 7.34115 \times 10^{-6}u^{48} - 0.0000199637u^{47} + \dots + 0.829123u - 0.0374982 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.000219225u^{48} + 0.000586666u^{47} + \dots + 2.35206u + 1.68714 \\ 7.34115 \times 10^{-6}u^{48} - 0.0000199637u^{47} + \dots + 0.829123u - 0.0374982 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.000219225u^{48} - 0.000586666u^{47} + \dots - 2.35206u - 1.68714 \\ 0.0000401811u^{48} - 0.000116259u^{47} + \dots + 0.632956u - 0.619217 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.000226567u^{48} - 0.000606629u^{47} + \dots - 1.52293u - 1.72464 \\ 0.0000425308u^{48} - 0.000121702u^{47} + \dots + 0.619218u - 0.636090 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.000485973u^{48} - 0.00130955u^{47} + \dots - 4.24203u - 4.03099 \\ 0.0000827120u^{48} - 0.000237961u^{47} + \dots + 0.252174u - 1.25531 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.000485973u^{48} + 0.00130955u^{47} + \dots + 4.24203u + 4.03099 \\ 8.34395 \times 10^{-6}u^{48} - 0.0000219487u^{47} + \dots + 0.890893u - 0.0398997 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.000168254u^{48} + 0.000608654u^{47} + \dots + 21.4016u - 4.40654 \\ -0.0000103751u^{48} + 0.0000252373u^{47} + \dots - 0.598442u + 0.217313 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.000521632u^{48} + 0.00132466u^{47} + \dots + 4.22379u + 4.65438 \\ 0.0000432685u^{48} - 0.000176386u^{47} + \dots - 1.49474u + 0.280657 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.000322947u^{48} - 0.000185023u^{47} + \dots + 22.4579u - 14.2537 \\ -4.94378 \times 10^{-7}u^{48} + 0.000105337u^{47} + \dots + 5.55953u - 3.65339 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.000380518u^{48} + 0.00154592u^{47} + \dots + 10.5498u - 9.69012$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{49} + 24u^{48} + \dots + 209u + 16$
$c_2, c_5$	$u^{49} + 2u^{48} + \dots + 5u - 4$
$c_3$	$u^{49} + 2u^{48} + \dots + 11533u - 1348$
$c_4$	$u^{49} - 3u^{48} + \dots + 22528u - 8192$
$c_6$	$u^{49} + 5u^{47} + \dots + 3280u - 704$
$c_7, c_9, c_{10}$ $c_{12}$	$u^{49} - 6u^{48} + \dots - 3u - 1$
$c_8, c_{11}$	$64(64u^{49} + 32u^{48} + \dots + 2u - 2)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{49} + 4y^{48} + \dots + 19265y - 256$
$c_2, c_5$	$y^{49} - 24y^{48} + \dots + 209y - 16$
$c_3$	$y^{49} - 16y^{48} + \dots - 79033007y - 1817104$
$c_4$	$y^{49} + 15y^{48} + \dots - 1312817152y - 67108864$
$c_6$	$y^{49} + 10y^{48} + \dots + 2659584y - 495616$
$c_7, c_9, c_{10}$ $c_{12}$	$y^{49} + 20y^{48} + \dots - 3y - 1$
$c_8, c_{11}$	$4096(4096y^{49} + 13312y^{48} + \dots + 92y - 4)$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.368475 + 0.893141I$		
$a = -0.437549 - 0.399190I$	$1.92348 + 0.00460I$	$8.35725 + 2.45568I$
$b = 0.737723 + 0.241805I$		
$u = 0.368475 - 0.893141I$		
$a = -0.437549 + 0.399190I$	$1.92348 - 0.00460I$	$8.35725 - 2.45568I$
$b = 0.737723 - 0.241805I$		
$u = 0.842817 + 0.242258I$		
$a = -0.530033 + 0.832526I$	$0.962056 + 0.593478I$	$9.83701 - 0.71197I$
$b = 0.663612 + 0.011137I$		
$u = 0.842817 - 0.242258I$		
$a = -0.530033 - 0.832526I$	$0.962056 - 0.593478I$	$9.83701 + 0.71197I$
$b = 0.663612 - 0.011137I$		
$u = 0.559841 + 0.536004I$		
$a = -0.53197 + 1.42690I$	$2.41634 - 4.82675I$	$8.03609 + 0.84928I$
$b = 0.699672 + 0.362657I$		
$u = 0.559841 - 0.536004I$		
$a = -0.53197 - 1.42690I$	$2.41634 + 4.82675I$	$8.03609 - 0.84928I$
$b = 0.699672 - 0.362657I$		
$u = -0.229788 + 0.731298I$		
$a = 0.411254 - 0.473412I$	$0.29548 - 4.94189I$	$3.78549 + 3.03515I$
$b = -0.708646 + 0.424150I$		
$u = -0.229788 - 0.731298I$		
$a = 0.411254 + 0.473412I$	$0.29548 + 4.94189I$	$3.78549 - 3.03515I$
$b = -0.708646 - 0.424150I$		
$u = -1.234010 + 0.152432I$		
$a = 0.272970 + 0.661526I$	$1.28810 + 3.67507I$	$9.11198 - 8.01331I$
$b = -0.665993 - 0.160510I$		
$u = -1.234010 - 0.152432I$		
$a = 0.272970 - 0.661526I$	$1.28810 - 3.67507I$	$9.11198 + 8.01331I$
$b = -0.665993 + 0.160510I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.466677 + 0.528402I$		
$a = 0.59247 + 1.57999I$	$3.99412 + 0.17438I$	$10.39352 + 6.49892I$
$b = -0.604388 + 0.427330I$		
$u = -0.466677 - 0.528402I$		
$a = 0.59247 - 1.57999I$	$3.99412 - 0.17438I$	$10.39352 - 6.49892I$
$b = -0.604388 - 0.427330I$		
$u = 0.282727 + 0.643800I$		
$a = -0.36034 + 1.88017I$	$1.35942 + 6.44982I$	$1.02359 - 10.63060I$
$b = 0.450725 + 0.695185I$		
$u = 0.282727 - 0.643800I$		
$a = -0.36034 - 1.88017I$	$1.35942 - 6.44982I$	$1.02359 + 10.63060I$
$b = 0.450725 - 0.695185I$		
$u = -0.315447 + 0.593282I$		
$a = 0.46079 + 1.85815I$	$3.45035 - 1.63795I$	$5.33084 + 7.67119I$
$b = -0.467003 + 0.604505I$		
$u = -0.315447 - 0.593282I$		
$a = 0.46079 - 1.85815I$	$3.45035 + 1.63795I$	$5.33084 - 7.67119I$
$b = -0.467003 - 0.604505I$		
$u = 0.158584 + 0.553955I$		
$a = -0.35372 + 2.17336I$	$-0.566080 - 0.618769I$	$-6.81815 - 5.24173I$
$b = 0.231235 + 0.617765I$		
$u = 0.158584 - 0.553955I$		
$a = -0.35372 - 2.17336I$	$-0.566080 + 0.618769I$	$-6.81815 + 5.24173I$
$b = 0.231235 - 0.617765I$		
$u = 0.09699 + 1.43219I$		
$a = -0.534665 - 0.241451I$	$1.58820 - 2.84063I$	$8.54119 + 5.77994I$
$b = 0.882372 - 0.109511I$		
$u = 0.09699 - 1.43219I$		
$a = -0.534665 + 0.241451I$	$1.58820 + 2.84063I$	$8.54119 - 5.77994I$
$b = 0.882372 + 0.109511I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.547826$ $a = -0.866970$ $b = 0.455204$	0.796835	12.7290
$u = 0.12397 + 1.48331I$ $a = 0.592077 - 0.186758I$ $b = -0.959246 - 0.254074I$	$-0.13274 + 8.15426I$	$0. - 10.76131I$
$u = 0.12397 - 1.48331I$ $a = 0.592077 + 0.186758I$ $b = -0.959246 + 0.254074I$	$-0.13274 - 8.15426I$	$0. + 10.76131I$
$u = -0.121555 + 0.434531I$ $a = 0.161534 - 0.434467I$ $b = -0.242298 + 0.488090I$	$-1.65447 + 1.14516I$	$-1.78214 - 1.36399I$
$u = -0.121555 - 0.434531I$ $a = 0.161534 + 0.434467I$ $b = -0.242298 - 0.488090I$	$-1.65447 - 1.14516I$	$-1.78214 + 1.36399I$
$u = -0.87541 + 1.33937I$ $a = -0.847085 + 0.136222I$ $b = 1.14989 - 1.27447I$	$-2.00616 - 11.44390I$	0
$u = -0.87541 - 1.33937I$ $a = -0.847085 - 0.136222I$ $b = 1.14989 + 1.27447I$	$-2.00616 + 11.44390I$	0
$u = 0.83857 + 1.36720I$ $a = 0.822217 + 0.111733I$ $b = -1.12745 - 1.17302I$	$-2.80653 + 6.29571I$	0
$u = 0.83857 - 1.36720I$ $a = 0.822217 - 0.111733I$ $b = -1.12745 + 1.17302I$	$-2.80653 - 6.29571I$	0
$u = -0.93367 + 1.31311I$ $a = -0.874203 + 0.181115I$ $b = 1.14130 - 1.43722I$	$-3.7042 - 14.1241I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.93367 - 1.31311I$ $a = -0.874203 - 0.181115I$ $b = 1.14130 + 1.43722I$	$-3.7042 + 14.1241I$	0
$u = 0.94786 + 1.30304I$ $a = 0.884231 + 0.192561I$ $b = -1.14645 - 1.48582I$	$-6.0599 + 19.3328I$	0
$u = 0.94786 - 1.30304I$ $a = 0.884231 - 0.192561I$ $b = -1.14645 + 1.48582I$	$-6.0599 - 19.3328I$	0
$u = 0.95012 + 1.34531I$ $a = 0.847783 + 0.197155I$ $b = -1.04401 - 1.42940I$	$-8.6305 + 11.2680I$	0
$u = 0.95012 - 1.34531I$ $a = 0.847783 - 0.197155I$ $b = -1.04401 + 1.42940I$	$-8.6305 - 11.2680I$	0
$u = -1.72761 + 0.48817I$ $a = 0.023488 + 0.597292I$ $b = -0.625176 - 0.374928I$	$-1.19477 + 5.51666I$	0
$u = -1.72761 - 0.48817I$ $a = 0.023488 - 0.597292I$ $b = -0.625176 + 0.374928I$	$-1.19477 - 5.51666I$	0
$u = -0.99063 + 1.51104I$ $a = -0.718316 + 0.217666I$ $b = 0.71001 - 1.23551I$	$-11.0575 - 10.1048I$	0
$u = -0.99063 - 1.51104I$ $a = -0.718316 - 0.217666I$ $b = 0.71001 + 1.23551I$	$-11.0575 + 10.1048I$	0
$u = 1.71747 + 0.63604I$ $a = 0.030820 + 0.615704I$ $b = 0.642764 - 0.440374I$	$-3.80716 - 10.65800I$	0

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.71747 - 0.63604I$		
$a = 0.030820 - 0.615704I$	$-3.80716 + 10.65800I$	0
$b = 0.642764 + 0.440374I$		
$u = 0.93386 + 1.57716I$		
$a = 0.683898 + 0.174596I$	$-7.28990 + 6.05374I$	0
$b = -0.715567 - 1.087200I$		
$u = 0.93386 - 1.57716I$		
$a = 0.683898 - 0.174596I$	$-7.28990 - 6.05374I$	0
$b = -0.715567 + 1.087200I$		
$u = -1.00509 + 1.64625I$		
$a = -0.636396 + 0.204182I$	$-10.59990 - 1.53094I$	0
$b = 0.573726 - 1.063490I$		
$u = -1.00509 - 1.64625I$		
$a = -0.636396 - 0.204182I$	$-10.59990 + 1.53094I$	0
$b = 0.573726 + 1.063490I$		
$u = 2.08301 + 0.44387I$		
$a = -0.006089 + 0.490124I$	$-5.90814 - 2.11885I$	0
$b = 0.503747 - 0.371081I$		
$u = 2.08301 - 0.44387I$		
$a = -0.006089 - 0.490124I$	$-5.90814 + 2.11885I$	0
$b = 0.503747 + 0.371081I$		
$u = -0.77831 + 2.00547I$		
$a = 0.355315 - 0.191289I$	$-4.07344 + 0.80035I$	0
$b = -0.558149 - 0.094316I$		
$u = -0.77831 - 2.00547I$		
$a = 0.355315 + 0.191289I$	$-4.07344 - 0.80035I$	0
$b = -0.558149 + 0.094316I$		

**II.**

$$I_2^u = \langle u^{39} + u^{38} + \dots + b + a, -u^{38} - u^{37} + \dots + a^2 - 2u, u^{40} + u^{39} + \dots + 2u^3 + 1 \rangle$$

**(i) Arc colorings**

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} a \\ -u^{39} - u^{38} + \dots - 2u^2 - a \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^{39} - u^{38} + \dots - u^2 a - 2u^2 \\ -u^{39} - u^{38} + \dots - 2u^2 - a \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{39} + u^{38} + \dots - u^2 a + 2u^2 \\ -u^{39} - u^{38} + \dots + a + 2u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} a + u \\ -u^{39} - u^{38} + \dots + a + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^5 - u \\ -u^5 - u^3 - u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^5 + u \\ -u^7 - u^5 - 2u^3 - u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{12} - u^{10} - 3u^8 - 2u^6 - 2u^4 - u^2 + 1 \\ u^{14} + 2u^{12} + 5u^{10} + 6u^8 + 6u^6 + 4u^4 + u^2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{17} + 2u^{15} + 5u^{13} + 6u^{11} + 7u^9 + 6u^7 + 4u^5 + 2u^3 + u \\ u^{17} + 3u^{15} + 7u^{13} + 10u^{11} + 11u^9 + 8u^7 + 4u^5 - u \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{31} + 4u^{29} + \dots - 8u^5 - 2u^3 \\ -u^{33} - 5u^{31} + \dots + 2u^5 - u \end{pmatrix}$$

**(ii) Obstruction class = -1**

**(iii) Cusp Shapes**

$$\begin{aligned} &= 4u^{39} + 24u^{37} - 4u^{36} + 100u^{35} - 24u^{34} + 296u^{33} - 96u^{32} + 708u^{31} - 276u^{30} + 1396u^{29} - \\ &632u^{28} + 2340u^{27} - 1196u^{26} + 3376u^{25} - 1908u^{24} + 4220u^{23} - 2612u^{22} + 4592u^{21} - \\ &3072u^{20} + 4332u^{19} - 3112u^{18} + 3520u^{17} - 2692u^{16} + 2428u^{15} - 1956u^{14} + 1372u^{13} - \\ &1160u^{12} + 604u^{11} - 524u^{10} + 168u^9 - 152u^8 - 8u^6 - 28u^5 + 16u^4 - 16u^3 + 4u^2 + 2 \end{aligned}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$(u^{40} + 19u^{39} + \dots + 2u^2 + 1)^2$
$c_2, c_5$	$(u^{40} + u^{39} + \dots + 2u + 1)^2$
$c_3$	$(u^{40} - u^{39} + \dots + 70u + 25)^2$
$c_4$	$(u^{40} + u^{39} + \dots + 2u^3 + 1)^2$
$c_6$	$(u^{40} + 3u^{39} + \dots + 61u + 16)^2$
$c_7, c_9, c_{10}$ $c_{12}$	$u^{80} + 13u^{79} + \dots - 5u + 2$
$c_8, c_{11}$	$u^{80} - u^{79} + \dots - 801912u + 50408$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^{40} + 5y^{39} + \dots + 4y + 1)^2$
$c_2, c_5$	$(y^{40} - 19y^{39} + \dots + 2y^2 + 1)^2$
$c_3$	$(y^{40} - 11y^{39} + \dots - 11300y + 625)^2$
$c_4$	$(y^{40} + 13y^{39} + \dots - 2y^2 + 1)^2$
$c_6$	$(y^{40} + 9y^{39} + \dots + 4695y + 256)^2$
$c_7, c_9, c_{10}$ $c_{12}$	$y^{80} + 51y^{79} + \dots - 165y + 4$
$c_8, c_{11}$	$y^{80} + 35y^{79} + \dots + 31771018144y + 2540966464$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.750165 + 0.681685I$		
$a = 0.593182 - 0.803436I$	$-3.67391 + 0.06553I$	$2.34805 + 0.65182I$
$b = -0.559757 + 0.825418I$		
$u = -0.750165 + 0.681685I$		
$a = 0.156983 + 0.121751I$	$-3.67391 + 0.06553I$	$2.34805 + 0.65182I$
$b = -1.027030 - 0.636612I$		
$u = -0.750165 - 0.681685I$		
$a = 0.593182 + 0.803436I$	$-3.67391 - 0.06553I$	$2.34805 - 0.65182I$
$b = -0.559757 - 0.825418I$		
$u = -0.750165 - 0.681685I$		
$a = 0.156983 - 0.121751I$	$-3.67391 - 0.06553I$	$2.34805 - 0.65182I$
$b = -1.027030 + 0.636612I$		
$u = -0.135322 + 1.008900I$		
$a = -1.228870 - 0.485355I$	$-5.33497 - 2.81020I$	$1.28879 + 3.60415I$
$b = 0.002457 - 1.309000I$		
$u = -0.135322 + 1.008900I$		
$a = 1.36420 - 0.52355I$	$-5.33497 - 2.81020I$	$1.28879 + 3.60415I$
$b = 0.011780 - 0.600939I$		
$u = -0.135322 - 1.008900I$		
$a = -1.228870 + 0.485355I$	$-5.33497 + 2.81020I$	$1.28879 - 3.60415I$
$b = 0.002457 + 1.309000I$		
$u = -0.135322 - 1.008900I$		
$a = 1.36420 + 0.52355I$	$-5.33497 + 2.81020I$	$1.28879 - 3.60415I$
$b = 0.011780 + 0.600939I$		
$u = 0.072343 + 1.034030I$		
$a = 1.275190 - 0.510382I$	$-9.36972 - 0.03674I$	$-5.04849 - 0.16943I$
$b = 0.072553 - 1.185810I$		
$u = 0.072343 + 1.034030I$		
$a = -1.34753 - 0.52364I$	$-9.36972 - 0.03674I$	$-5.04849 - 0.16943I$
$b = -0.097218 - 0.794282I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.072343 - 1.034030I$		
$a = 1.275190 + 0.510382I$	$-9.36972 + 0.03674I$	$-5.04849 + 0.16943I$
$b = 0.072553 + 1.185810I$		
$u = 0.072343 - 1.034030I$		
$a = -1.34753 + 0.52364I$	$-9.36972 + 0.03674I$	$-5.04849 + 0.16943I$
$b = -0.097218 + 0.794282I$		
$u = 0.494587 + 0.916866I$		
$a = 0.730044 - 0.412475I$	$-5.75447 - 1.67611I$	$-0.019667 + 0.725806I$
$b = -0.213277 - 1.340310I$		
$u = 0.494587 + 0.916866I$		
$a = -1.224630 - 0.504391I$	$-5.75447 - 1.67611I$	$-0.019667 + 0.725806I$
$b = 0.492998 + 0.469591I$		
$u = 0.494587 - 0.916866I$		
$a = 0.730044 + 0.412475I$	$-5.75447 + 1.67611I$	$-0.019667 - 0.725806I$
$b = -0.213277 + 1.340310I$		
$u = 0.494587 - 0.916866I$		
$a = -1.224630 + 0.504391I$	$-5.75447 + 1.67611I$	$-0.019667 - 0.725806I$
$b = 0.492998 - 0.469591I$		
$u = 0.141807 + 1.046970I$		
$a = 1.221630 - 0.517444I$	$-7.69560 + 7.54884I$	$-1.84455 - 7.16323I$
$b = 0.066268 - 1.340020I$		
$u = 0.141807 + 1.046970I$		
$a = -1.36344 - 0.52952I$	$-7.69560 + 7.54884I$	$-1.84455 - 7.16323I$
$b = -0.133850 - 0.573342I$		
$u = 0.141807 - 1.046970I$		
$a = 1.221630 + 0.517444I$	$-7.69560 - 7.54884I$	$-1.84455 + 7.16323I$
$b = 0.066268 + 1.340020I$		
$u = 0.141807 - 1.046970I$		
$a = -1.36344 + 0.52952I$	$-7.69560 - 7.54884I$	$-1.84455 + 7.16323I$
$b = -0.133850 + 0.573342I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.591229 + 0.886634I$ $a = 1.111810 - 0.459595I$ $b = -0.665188 + 0.643870I$	$-3.10117 - 2.31784I$	$4.10490 + 3.06865I$
$u = -0.591229 + 0.886634I$ $a = -0.520585 - 0.427039I$ $b = 0.220427 - 1.085890I$	$-3.10117 - 2.31784I$	$4.10490 + 3.06865I$
$u = -0.591229 - 0.886634I$ $a = 1.111810 + 0.459595I$ $b = -0.665188 - 0.643870I$	$-3.10117 + 2.31784I$	$4.10490 - 3.06865I$
$u = -0.591229 - 0.886634I$ $a = -0.520585 + 0.427039I$ $b = 0.220427 + 1.085890I$	$-3.10117 + 2.31784I$	$4.10490 - 3.06865I$
$u = -0.813779 + 0.691568I$ $a = 0.426879 - 0.874755I$ $b = -0.234341 + 0.909793I$	$-1.24510 + 7.46361I$	$5.61835 - 4.86663I$
$u = -0.813779 + 0.691568I$ $a = 0.386900 + 0.183187I$ $b = -1.37779 - 0.38778I$	$-1.24510 + 7.46361I$	$5.61835 - 4.86663I$
$u = -0.813779 - 0.691568I$ $a = 0.426879 + 0.874755I$ $b = -0.234341 - 0.909793I$	$-1.24510 - 7.46361I$	$5.61835 + 4.86663I$
$u = -0.813779 - 0.691568I$ $a = 0.386900 - 0.183187I$ $b = -1.37779 + 0.38778I$	$-1.24510 - 7.46361I$	$5.61835 + 4.86663I$
$u = 0.800451 + 0.709449I$ $a = -0.417698 - 0.811169I$ $b = 0.253470 + 0.776905I$	$0.91595 - 2.43691I$	$8.87403 + 0.79132I$
$u = 0.800451 + 0.709449I$ $a = -0.382753 + 0.101721I$ $b = 1.250550 - 0.301108I$	$0.91595 - 2.43691I$	$8.87403 + 0.79132I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.800451 - 0.709449I$ $a = -0.417698 + 0.811169I$ $b = 0.253470 - 0.776905I$	$0.91595 + 2.43691I$	$8.87403 - 0.79132I$
$u = 0.800451 - 0.709449I$ $a = -0.382753 - 0.101721I$ $b = 1.250550 + 0.301108I$	$0.91595 + 2.43691I$	$8.87403 - 0.79132I$
$u = 0.784697 + 0.767022I$ $a = -0.245575 - 0.630555I$ $b = 0.144977 + 0.306438I$	$1.89343 - 0.15085I$	$10.02823 + 0.49618I$
$u = 0.784697 + 0.767022I$ $a = -0.539122 - 0.136467I$ $b = 1.041340 + 0.152160I$	$1.89343 - 0.15085I$	$10.02823 + 0.49618I$
$u = 0.784697 - 0.767022I$ $a = -0.245575 + 0.630555I$ $b = 0.144977 - 0.306438I$	$1.89343 + 0.15085I$	$10.02823 - 0.49618I$
$u = 0.784697 - 0.767022I$ $a = -0.539122 + 0.136467I$ $b = 1.041340 - 0.152160I$	$1.89343 + 0.15085I$	$10.02823 - 0.49618I$
$u = -0.780403 + 0.800609I$ $a = 0.697495 - 0.176644I$ $b = -1.078800 + 0.402101I$	$0.65358 - 4.71182I$	$7.76114 + 5.41408I$
$u = -0.780403 + 0.800609I$ $a = 0.082908 - 0.623965I$ $b = 0.0751238 + 0.0671472I$	$0.65358 - 4.71182I$	$7.76114 + 5.41408I$
$u = -0.780403 - 0.800609I$ $a = 0.697495 + 0.176644I$ $b = -1.078800 - 0.402101I$	$0.65358 + 4.71182I$	$7.76114 - 5.41408I$
$u = -0.780403 - 0.800609I$ $a = 0.082908 + 0.623965I$ $b = 0.0751238 - 0.0671472I$	$0.65358 + 4.71182I$	$7.76114 - 5.41408I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.591289 + 0.962091I$		
$a = 0.595213 - 0.567307I$	$-6.36686 + 5.78108I$	$-0.88901 - 6.61715I$
$b = -0.434157 - 1.191100I$		
$u = 0.591289 + 0.962091I$		
$a = -1.186500 - 0.394784I$	$-6.36686 + 5.78108I$	$-0.88901 - 6.61715I$
$b = 0.517584 + 0.762892I$		
$u = 0.591289 - 0.962091I$		
$a = 0.595213 + 0.567307I$	$-6.36686 - 5.78108I$	$-0.88901 + 6.61715I$
$b = -0.434157 + 1.191100I$		
$u = 0.591289 - 0.962091I$		
$a = -1.186500 + 0.394784I$	$-6.36686 - 5.78108I$	$-0.88901 + 6.61715I$
$b = 0.517584 - 0.762892I$		
$u = -0.175614 + 0.839189I$		
$a = -1.241180 - 0.297538I$	$-4.04306 - 1.72242I$	$2.69743 + 5.15094I$
$b = 0.25416 - 1.41029I$		
$u = -0.175614 + 0.839189I$		
$a = 1.41679 - 0.54165I$	$-4.04306 - 1.72242I$	$2.69743 + 5.15094I$
$b = -0.541981 - 0.547133I$		
$u = -0.175614 - 0.839189I$		
$a = -1.241180 + 0.297538I$	$-4.04306 + 1.72242I$	$2.69743 - 5.15094I$
$b = 0.25416 + 1.41029I$		
$u = -0.175614 - 0.839189I$		
$a = 1.41679 + 0.54165I$	$-4.04306 + 1.72242I$	$2.69743 - 5.15094I$
$b = -0.541981 + 0.547133I$		
$u = -0.741020 + 0.934800I$		
$a = 1.056660 - 0.208822I$	$0.239370 - 1.028260I$	$7.02738 + 0.15735I$
$b = -0.944973 + 0.947973I$		
$u = -0.741020 + 0.934800I$		
$a = -0.315635 - 0.725977I$	$0.239370 - 1.028260I$	$7.02738 + 0.15735I$
$b = 0.698154 - 0.604000I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.741020 - 0.934800I$		
$a = 1.056660 + 0.208822I$	$0.239370 + 1.028260I$	$7.02738 - 0.15735I$
$b = -0.944973 - 0.947973I$		
$u = -0.741020 - 0.934800I$		
$a = -0.315635 + 0.725977I$	$0.239370 + 1.028260I$	$7.02738 - 0.15735I$
$b = 0.698154 + 0.604000I$		
$u = 0.733685 + 0.961157I$		
$a = -1.103390 - 0.210369I$	$1.29840 + 5.88166I$	$8.65065 - 6.09482I$
$b = 0.883099 + 1.028080I$		
$u = 0.733685 + 0.961157I$		
$a = 0.369704 - 0.750788I$	$1.29840 + 5.88166I$	$8.65065 - 6.09482I$
$b = -0.784267 - 0.717456I$		
$u = 0.733685 - 0.961157I$		
$a = -1.103390 + 0.210369I$	$1.29840 - 5.88166I$	$8.65065 + 6.09482I$
$b = 0.883099 - 1.028080I$		
$u = 0.733685 - 0.961157I$		
$a = 0.369704 + 0.750788I$	$1.29840 - 5.88166I$	$8.65065 + 6.09482I$
$b = -0.784267 + 0.717456I$		
$u = -0.694921 + 0.997432I$		
$a = -0.476422 - 0.744456I$	$-4.61773 - 5.57768I$	$0.56138 + 4.39035I$
$b = 0.794289 - 0.972074I$		
$u = -0.694921 + 0.997432I$		
$a = 1.171340 - 0.252976I$	$-4.61773 - 5.57768I$	$0.56138 + 4.39035I$
$b = -0.691218 + 1.072320I$		
$u = -0.694921 - 0.997432I$		
$a = -0.476422 + 0.744456I$	$-4.61773 + 5.57768I$	$0.56138 - 4.39035I$
$b = 0.794289 + 0.972074I$		
$u = -0.694921 - 0.997432I$		
$a = 1.171340 + 0.252976I$	$-4.61773 + 5.57768I$	$0.56138 - 4.39035I$
$b = -0.691218 - 1.072320I$		

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.723170 + 0.999501I$ $a = 0.441305 - 0.786301I$ $b = -0.892771 - 0.882669I$	$0.03312 + 8.17729I$	$7.05192 - 5.82128I$
$u = 0.723170 + 0.999501I$ $a = -1.164480 - 0.213199I$ $b = 0.777102 + 1.138390I$	$0.03312 + 8.17729I$	$7.05192 - 5.82128I$
$u = 0.723170 - 0.999501I$ $a = 0.441305 + 0.786301I$ $b = -0.892771 + 0.882669I$	$0.03312 - 8.17729I$	$7.05192 + 5.82128I$
$u = 0.723170 - 0.999501I$ $a = -1.164480 + 0.213199I$ $b = 0.777102 - 1.138390I$	$0.03312 - 8.17729I$	$7.05192 + 5.82128I$
$u = -0.723431 + 1.012350I$ $a = -0.458988 - 0.803160I$ $b = 0.937952 - 0.925811I$	$-2.22064 - 13.23980I$	$3.80297 + 9.63322I$
$u = -0.723431 + 1.012350I$ $a = 1.182420 - 0.209193I$ $b = -0.750286 + 1.182330I$	$-2.22064 - 13.23980I$	$3.80297 + 9.63322I$
$u = -0.723431 - 1.012350I$ $a = -0.458988 + 0.803160I$ $b = 0.937952 + 0.925811I$	$-2.22064 + 13.23980I$	$3.80297 - 9.63322I$
$u = -0.723431 - 1.012350I$ $a = 1.182420 + 0.209193I$ $b = -0.750286 - 1.182330I$	$-2.22064 + 13.23980I$	$3.80297 - 9.63322I$
$u = 0.497642 + 0.392565I$ $a = 0.638573 + 1.002530I$ $b = 0.93207 - 2.32293I$	$-5.16819 - 1.42866I$	$2.24523 + 0.64534I$
$u = 0.497642 + 0.392565I$ $a = -1.13622 - 1.39510I$ $b = 1.93608 + 0.99240I$	$-5.16819 - 1.42866I$	$2.24523 + 0.64534I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.497642 - 0.392565I$ $a = 0.638573 - 1.002530I$ $b = 0.93207 + 2.32293I$	$-5.16819 + 1.42866I$	$2.24523 - 0.64534I$
$u = 0.497642 - 0.392565I$ $a = -1.13622 + 1.39510I$ $b = 1.93608 - 0.99240I$	$-5.16819 + 1.42866I$	$2.24523 - 0.64534I$
$u = 0.604024 + 0.174435I$ $a = 0.07218 + 1.50377I$ $b = 1.74868 - 2.46317I$	$-3.80642 + 5.28641I$	$5.70674 - 5.92677I$
$u = 0.604024 + 0.174435I$ $a = -0.67621 - 1.67820I$ $b = 2.07682 + 1.94062I$	$-3.80642 + 5.28641I$	$5.70674 - 5.92677I$
$u = 0.604024 - 0.174435I$ $a = 0.07218 - 1.50377I$ $b = 1.74868 + 2.46317I$	$-3.80642 - 5.28641I$	$5.70674 + 5.92677I$
$u = 0.604024 - 0.174435I$ $a = -0.67621 + 1.67820I$ $b = 2.07682 - 1.94062I$	$-3.80642 - 5.28641I$	$5.70674 + 5.92677I$
$u = -0.537810 + 0.103864I$ $a = -0.04488 + 1.79215I$ $b = -1.93537 - 2.64238I$	$-1.85361 - 0.71721I$	$10.03452 + 1.24829I$
$u = -0.537810 + 0.103864I$ $a = 0.58269 - 1.89602I$ $b = -2.32566 + 2.14288I$	$-1.85361 - 0.71721I$	$10.03452 + 1.24829I$
$u = -0.537810 - 0.103864I$ $a = -0.04488 - 1.79215I$ $b = -1.93537 + 2.64238I$	$-1.85361 + 0.71721I$	$10.03452 - 1.24829I$
$u = -0.537810 - 0.103864I$ $a = 0.58269 + 1.89602I$ $b = -2.32566 - 2.14288I$	$-1.85361 + 0.71721I$	$10.03452 - 1.24829I$

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

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} -1 \\ -u + 1 \end{pmatrix}$$

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

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

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

$$a_1 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

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

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

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

(ii) Obstruction class = 1

(iii) Cusp Shapes = -4

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.000000I$ $a = -1.00000$ $b = 1.00000 - 1.00000I$	-4.93480	-4.00000
$u = -1.000000I$ $a = -1.00000$ $b = 1.00000 + 1.00000I$	-4.93480	-4.00000

IV.

$$I_1^v = \langle a, v^5 - 2v^4 + 16v^2 + 64b - 16v - 32, v^6 - 2v^5 + 16v^3 - 16v^2 - 32v + 64 \rangle$$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_8 = \begin{pmatrix} 0 \\ -\frac{1}{64}v^5 + \frac{1}{32}v^4 + \dots + \frac{1}{4}v + \frac{1}{2} \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -\frac{1}{64}v^5 + \frac{1}{32}v^4 + \dots + \frac{1}{4}v + \frac{1}{2} \\ -\frac{1}{64}v^5 + \frac{1}{32}v^4 + \dots + \frac{1}{4}v + \frac{1}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} v \\ \frac{1}{64}v^5 - \frac{1}{32}v^4 + \dots - \frac{1}{4}v - \frac{1}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} \frac{1}{64}v^5 - \frac{1}{32}v^4 + \dots + \frac{3}{4}v - \frac{1}{2} \\ \frac{1}{64}v^5 - \frac{1}{32}v^4 + \dots - \frac{1}{4}v - \frac{1}{2} \end{pmatrix}$$

$$a_1 = \begin{pmatrix} \frac{1}{32}v^5 - \frac{1}{16}v^4 + \dots + \frac{1}{2}v - 1 \\ \frac{1}{32}v^5 - \frac{1}{16}v^4 + \dots - \frac{1}{2}v - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -v \\ -\frac{1}{32}v^5 + \frac{1}{16}v^4 + \dots + \frac{1}{2}v + 1 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -1 \\ -\frac{1}{32}v^5 + \frac{1}{8}v^3 + \dots - \frac{1}{2}v + 2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{1}{16}v^4 - \frac{1}{4}v^2 + 1 \\ \frac{1}{32}v^5 + \frac{1}{4}v^2 + \frac{1}{2}v \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -\frac{1}{16}v^4 + \frac{1}{4}v^2 - 1 \\ \frac{1}{8}v^3 + 1 \end{pmatrix}$$

(ii) Obstruction class = 1

$$(iii) \text{ Cusp Shapes} = \frac{17}{128}v^5 - \frac{1}{32}v^3 + \frac{9}{8}v^2 + \frac{1}{8}v + \frac{11}{2}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1, c_6$	$u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1$
$c_2$	$u^6 + u^5 - u^4 - 2u^3 + u + 1$
$c_3, c_5$	$u^6 - u^5 - u^4 + 2u^3 - u + 1$
$c_4$	$u^6$
$c_7, c_9$	$(u + 1)^6$
$c_8$	$64(64u^6 + 32u^5 - 16u^4 - 16u^3 + 2u + 1)$
$c_{10}, c_{12}$	$(u - 1)^6$
$c_{11}$	$64(64u^6 - 32u^5 - 16u^4 + 16u^3 - 2u + 1)$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_6$	$y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1$
$c_2, c_3, c_5$	$y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1$
$c_4$	$y^6$
$c_7, c_9, c_{10}$ $c_{12}$	$(y - 1)^6$
$c_8, c_{11}$	$4096(4096y^6 - 3072y^5 + 1280y^4 - 256y^3 + 32y^2 - 4y + 1)$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^v$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.46557 + 0.76250I$	$1.64493 - 5.69302I$	$6.22322 + 3.57560I$
$a = 0$		
$b = 0.536975 - 0.279376I$		
$v = 1.46557 - 0.76250I$	$1.64493 + 5.69302I$	$6.22322 - 3.57560I$
$a = 0$		
$b = 0.536975 + 0.279376I$		
$v = -1.83596 + 0.54142I$	$3.53554 + 0.92430I$	$8.40983 + 1.04572I$
$a = 0$		
$b = -0.501096 - 0.147771I$		
$v = -1.83596 - 0.54142I$	$3.53554 - 0.92430I$	$8.40983 - 1.04572I$
$a = 0$		
$b = -0.501096 + 0.147771I$		
$v = 1.37039 + 2.12652I$	$-0.245672 + 0.924305I$	$6.99195 - 6.48027I$
$a = 0$		
$b = 0.214122 - 0.332266I$		
$v = 1.37039 - 2.12652I$	$-0.245672 - 0.924305I$	$6.99195 + 6.48027I$
$a = 0$		
$b = 0.214122 + 0.332266I$		

## V. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u-1)^2(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1) \cdot ((u^{40} + 19u^{39} + \dots + 2u^2 + 1)^2)(u^{49} + 24u^{48} + \dots + 209u + 16)$
$c_2$	$((u-1)^2)(u^6 + u^5 + \dots + u + 1)(u^{40} + u^{39} + \dots + 2u + 1)^2 \cdot (u^{49} + 2u^{48} + \dots + 5u - 4)$
$c_3$	$((u-1)^2)(u^6 - u^5 + \dots - u + 1)(u^{40} - u^{39} + \dots + 70u + 25)^2 \cdot (u^{49} + 2u^{48} + \dots + 11533u - 1348)$
$c_4$	$u^6(u^2 + 1)(u^{40} + u^{39} + \dots + 2u^3 + 1)^2 \cdot (u^{49} - 3u^{48} + \dots + 22528u - 8192)$
$c_5$	$((u+1)^2)(u^6 - u^5 + \dots - u + 1)(u^{40} + u^{39} + \dots + 2u + 1)^2 \cdot (u^{49} + 2u^{48} + \dots + 5u - 4)$
$c_6$	$u^2(u^6 - 3u^5 + \dots - u + 1)(u^{40} + 3u^{39} + \dots + 61u + 16)^2 \cdot (u^{49} + 5u^{47} + \dots + 3280u - 704)$
$c_7, c_9$	$((u+1)^6)(u^2 + 1)(u^{49} - 6u^{48} + \dots - 3u - 1)(u^{80} + 13u^{79} + \dots - 5u + 2)$
$c_8$	$4096(u^2 + 2u + 2)(64u^6 + 32u^5 - 16u^4 - 16u^3 + 2u + 1) \cdot (64u^{49} + 32u^{48} + \dots + 2u - 2)(u^{80} - u^{79} + \dots - 801912u + 50408)$
$c_{10}, c_{12}$	$((u-1)^6)(u^2 + 1)(u^{49} - 6u^{48} + \dots - 3u - 1)(u^{80} + 13u^{79} + \dots - 5u + 2)$
$c_{11}$	$4096(u^2 - 2u + 2)(64u^6 - 32u^5 - 16u^4 + 16u^3 - 2u + 1) \cdot (64u^{49} + 32u^{48} + \dots + 2u - 2)(u^{80} - u^{79} + \dots - 801912u + 50408)$

## VI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$((y-1)^2)(y^6 + y^5 + \dots + 3y + 1)(y^{40} + 5y^{39} + \dots + 4y + 1)^2$ $\cdot (y^{49} + 4y^{48} + \dots + 19265y - 256)$
$c_2, c_5$	$(y-1)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)$ $\cdot ((y^{40} - 19y^{39} + \dots + 2y^2 + 1)^2)(y^{49} - 24y^{48} + \dots + 209y - 16)$
$c_3$	$(y-1)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)$ $\cdot (y^{40} - 11y^{39} + \dots - 11300y + 625)^2$ $\cdot (y^{49} - 16y^{48} + \dots - 79033007y - 1817104)$
$c_4$	$y^6(y+1)^2(y^{40} + 13y^{39} + \dots - 2y^2 + 1)^2$ $\cdot (y^{49} + 15y^{48} + \dots - 1312817152y - 67108864)$
$c_6$	$y^2(y^6 + y^5 + \dots + 3y + 1)(y^{40} + 9y^{39} + \dots + 4695y + 256)^2$ $\cdot (y^{49} + 10y^{48} + \dots + 2659584y - 495616)$
$c_7, c_9, c_{10}$ $c_{12}$	$((y-1)^6)(y+1)^2(y^{49} + 20y^{48} + \dots - 3y - 1)$ $\cdot (y^{80} + 51y^{79} + \dots - 165y + 4)$
$c_8, c_{11}$	$16777216(y^2 + 4)$ $\cdot (4096y^6 - 3072y^5 + 1280y^4 - 256y^3 + 32y^2 - 4y + 1)$ $\cdot (4096y^{49} + 13312y^{48} + \dots + 92y - 4)$ $\cdot (y^{80} + 35y^{79} + \dots + 31771018144y + 2540966464)$