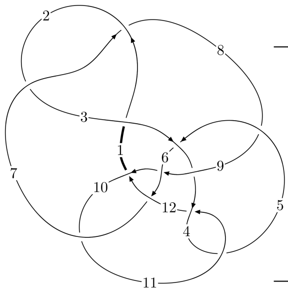
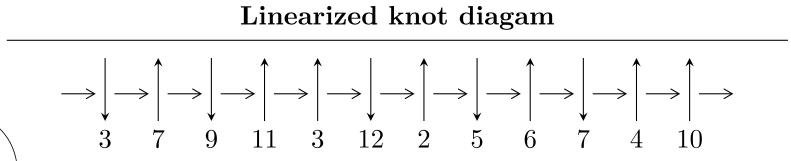
$12n_{0628}$ ($K12n_{0628}$)



A knot diagram[1]



Solving Sequence

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

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

$$I_1^u = \langle 4.23039\times10^{40}u^{36} + 1.59605\times10^{41}u^{35} + \cdots + 6.26742\times10^{42}b - 2.10116\times10^{42},$$
$$7.35912\times10^{41}u^{36} + 3.34060\times10^{42}u^{35} + \cdots + 5.64068\times10^{43}a + 1.24742\times10^{44},$$
$$u^{37} + 5u^{36} + \cdots + 135u + 216\rangle$$

$$I_2^u = \langle -287727135u^{24}a - 4296024791u^{24} + \cdots + 46372736648a - 5064132100,$$
$$203474647775u^{24}a + 191008518002u^{24} + \cdots + 1275756399988a + 9676139674612,$$
$$u^{25} - 2u^{24} + \cdots - 30u + 28\rangle$$

$$I_3^u = \langle -31u^{15}a - 25u^{15} + \cdots + 35a + 221,\ 344u^{15}a + 659u^{15} + \cdots + 206a + 177,\ u^{16} + u^{15} + \cdots - 3u + 1\rangle$$

$$I_4^u = \langle u^4 - 2u^3 + 2u^2 + b - 2u,\ u^4 - u^3 + a + u - 2,\ u^5 - 2u^4 + 3u^3 - 3u^2 + u - 1\rangle$$

$$I_1^v = \langle a,\ b^2 - b + 1,\ v + 1\rangle$$

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 126 representations.

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

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

I. $\boldsymbol{I_1^u =}$
$\boldsymbol{\langle 4.23\times 10^{40}u^{36}+1.60\times 10^{41}u^{35}+\cdots+6.27\times 10^{42}b-2.10\times 10^{42},\ 7.36\times 10^{41}u^{36}+ 3.34\times 10^{42}u^{35}+\cdots+5.64\times 10^{43}a+1.25\times 10^{44},\ u^{37}+5u^{36}+\cdots+135u+216\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_5 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.0130465u^{36}-0.0592234u^{35}+\cdots-1.66509u-2.21148\\-0.00674980u^{36}-0.0254658u^{35}+\cdots-1.22229u+0.335251\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u\\u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.0169497u^{36}+0.0766729u^{35}+\cdots+6.01317u+1.90994\\-0.00354995u^{36}-0.0254904u^{35}+\cdots+1.41026u-3.00175\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.00382624u^{36}-0.0152232u^{35}+\cdots-1.03783u-0.0717343\\-0.00227415u^{36}-0.000712979u^{35}+\cdots-1.69668u+1.36009\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0.00445702u^{36}+0.0266027u^{35}+\cdots+0.208643u+1.38622\\0.00600911u^{36}+0.0411129u^{35}+\cdots-0.450201u+2.81805\end{pmatrix}$$
$$a_2 = \begin{pmatrix}0.00558813u^{36}+0.0233426u^{35}+\cdots+2.98092u-0.130169\\0.00451436u^{36}+0.0186563u^{35}+\cdots+1.47087u+0.213858\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.00112681u^{36}+0.000820182u^{35}+\cdots-0.872767u-1.09599\\0.00351553u^{36}+0.0148665u^{35}+\cdots-0.874777u+0.624270\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-0.00872893u^{36}-0.0448289u^{35}+\cdots-0.880563u-3.17420\\-0.00335736u^{36}-0.0222397u^{35}+\cdots-1.26079u-1.21851\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.00135818u^{36}-0.00996207u^{35}+\cdots-0.442769u-1.34439\\0.00446321u^{36}+0.0123465u^{35}+\cdots+1.74499u-1.71917\end{pmatrix}$$

(ii) Obstruction class $=-1$

(iii) Cusp Shapes $=0.00136317u^{36}-0.00172311u^{35}+\cdots+2.61553u-10.2082$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} + 44u^{36} + \cdots - 9216u - 4096$
c_2, c_7	$u^{37} - 4u^{36} + \cdots + 288u - 64$
c_3, c_6	$u^{37} - u^{36} + \cdots - 4u - 1$
c_4, c_{11}	$u^{37} - 5u^{36} + \cdots + 135u - 216$
c_5, c_{12}	$u^{37} + 2u^{36} + \cdots + 55u - 13$
c_8, c_{10}	$u^{37} - 3u^{36} + \cdots + 2158u - 419$
c_9	$u^{37} - 9u^{36} + \cdots + 352u + 128$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} - 92y^{36} + \cdots + 5631901696y - 16777216$
c_2, c_7	$y^{37} + 44y^{36} + \cdots - 9216y - 4096$
c_3, c_6	$y^{37} - 3y^{36} + \cdots + 26y - 1$
c_4, c_{11}	$y^{37} + 25y^{36} + \cdots - 40095y - 46656$
c_5, c_{12}	$y^{37} + 30y^{36} + \cdots - 4593y - 169$
c_8, c_{10}	$y^{37} - 47y^{36} + \cdots + 2060002y - 175561$
c_9	$y^{37} + y^{36} + \cdots - 232448y - 16384$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.269152 + 0.903541I$ $a = -1.77650 - 0.73834I$ $b = -0.896333 + 0.889708I$	$-1.23041 + 6.04986I$	$-1.10927 - 5.75372I$
$u = 0.269152 - 0.903541I$ $a = -1.77650 + 0.73834I$ $b = -0.896333 - 0.889708I$	$-1.23041 - 6.04986I$	$-1.10927 + 5.75372I$
$u = 0.872271 + 0.100098I$ $a = 0.030203 - 0.658754I$ $b = -0.818627 + 0.925714I$	$0.32389 + 6.56803I$	$2.05536 - 8.38131I$
$u = 0.872271 - 0.100098I$ $a = 0.030203 + 0.658754I$ $b = -0.818627 - 0.925714I$	$0.32389 - 6.56803I$	$2.05536 + 8.38131I$
$u = 0.492670 + 1.011790I$ $a = -0.724839 - 0.785958I$ $b = -0.425898 + 0.318622I$	$-3.00341 + 1.76524I$	$-6.22185 - 1.31475I$
$u = 0.492670 - 1.011790I$ $a = -0.724839 + 0.785958I$ $b = -0.425898 - 0.318622I$	$-3.00341 - 1.76524I$	$-6.22185 + 1.31475I$
$u = -0.420104 + 0.739731I$ $a = 1.169150 - 0.559343I$ $b = 0.508246 + 0.930731I$	$0.59435 - 2.34473I$	$4.94040 + 1.97464I$
$u = -0.420104 - 0.739731I$ $a = 1.169150 + 0.559343I$ $b = 0.508246 - 0.930731I$	$0.59435 + 2.34473I$	$4.94040 - 1.97464I$
$u = 0.917730 + 0.731301I$ $a = -0.009924 + 0.473838I$ $b = 0.809176 + 0.515910I$	$-1.04010 - 1.96201I$	$-3.92093 + 3.59450I$
$u = 0.917730 - 0.731301I$ $a = -0.009924 - 0.473838I$ $b = 0.809176 - 0.515910I$	$-1.04010 + 1.96201I$	$-3.92093 - 3.59450I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.416470+0.699073I$ $a=\ \ 0.604746+0.012396I$ $b=-0.071559+0.795337I$	$0.73020-1.39454I$	$3.96402+4.72107I$
$u=-0.416470-0.699073I$ $a=\ \ 0.604746-0.012396I$ $b=-0.071559-0.795337I$	$0.73020+1.39454I$	$3.96402-4.72107I$
$u=-0.805868+0.098826I$ $a=-1.063250-0.356749I$ $b=-0.788565+0.577403I$	$-8.40989+1.02946I$	$-2.28755-3.65982I$
$u=-0.805868-0.098826I$ $a=-1.063250+0.356749I$ $b=-0.788565-0.577403I$	$-8.40989-1.02946I$	$-2.28755+3.65982I$
$u=-1.22415$ $a=\ \ 0.225372$ $b=-0.602117$	2.30908	24.7760
$u=\ \ 0.410867+1.163200I$ $a=-1.63461-0.14310I$ $b=-1.007580+0.398227I$	$-3.67004+5.51506I$	$-8.53570-9.26676I$
$u=\ \ 0.410867-1.163200I$ $a=-1.63461+0.14310I$ $b=-1.007580-0.398227I$	$-3.67004-5.51506I$	$-8.53570+9.26676I$
$u=-0.650738+1.117350I$ $a=\ \ 0.898248-1.072900I$ $b=\ \ 0.312545-0.041809I$	$-11.29550-2.67171I$	$-5.33997+0.05553I$
$u=-0.650738-1.117350I$ $a=\ \ 0.898248+1.072900I$ $b=\ \ 0.312545+0.041809I$	$-11.29550+2.67171I$	$-5.33997-0.05553I$
$u=-0.466931+1.223260I$ $a=\ \ 2.04392-0.46693I$ $b=\ \ 0.883818+0.444424I$	$-11.81660-5.68244I$	$-7.57615+8.42428I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.466931 - 1.223260I$ $a = 2.04392 + 0.46693I$ $b = 0.883818 - 0.444424I$	$-11.81660 + 5.68244I$	$-7.57615 - 8.42428I$
$u = -0.248666 + 1.316480I$ $a = 1.212910 - 0.492241I$ $b = 0.772807 - 0.987892I$	$-12.83220 - 2.62224I$	$-2.96286 + 0.29649I$
$u = -0.248666 - 1.316480I$ $a = 1.212910 + 0.492241I$ $b = 0.772807 + 0.987892I$	$-12.83220 + 2.62224I$	$-2.96286 - 0.29649I$
$u = -0.161469 + 1.332340I$ $a = -1.50038 - 0.23483I$ $b = -0.83492 - 1.22643I$	$-4.52806 - 3.48372I$	$-2.33948 + 2.63349I$
$u = -0.161469 - 1.332340I$ $a = -1.50038 + 0.23483I$ $b = -0.83492 + 1.22643I$	$-4.52806 + 3.48372I$	$-2.33948 - 2.63349I$
$u = 0.614318 + 0.108865I$ $a = 0.175521 + 0.463933I$ $b = 0.484967 + 0.414617I$	$-0.52930 - 1.61126I$	$-1.10989 + 5.35570I$
$u = 0.614318 - 0.108865I$ $a = 0.175521 - 0.463933I$ $b = 0.484967 - 0.414617I$	$-0.52930 + 1.61126I$	$-1.10989 - 5.35570I$
$u = -0.076677 + 1.400490I$ $a = 1.080420 + 0.334648I$ $b = 1.118970 + 0.407322I$	$-4.39513 - 4.13503I$	$-4.32540 + 3.40282I$
$u = -0.076677 - 1.400490I$ $a = 1.080420 - 0.334648I$ $b = 1.118970 - 0.407322I$	$-4.39513 + 4.13503I$	$-4.32540 - 3.40282I$
$u = -1.46354 + 0.04533I$ $a = 0.232820 + 0.196289I$ $b = 0.974356 - 0.901856I$	$-7.90935 + 10.21460I$	$-0.56188 - 6.56611I$

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.46354 - 0.04533I$ $a = 0.232820 - 0.196289I$ $b = 0.974356 + 0.901856I$	$-7.90935 - 10.21460I$	$-0.56188 + 6.56611I$
$u = 0.42524 + 1.40381I$ $a = 1.52208 + 0.03579I$ $b = 0.99008 - 1.24001I$	$-4.48931 + 11.38620I$	$-0.95014 - 7.32093I$
$u = 0.42524 - 1.40381I$ $a = 1.52208 - 0.03579I$ $b = 0.99008 + 1.24001I$	$-4.48931 - 11.38620I$	$-0.95014 + 7.32093I$
$u = -0.65785 + 1.48194I$ $a = -1.43080 + 0.21430I$ $b = -1.05752 - 1.16840I$	$-12.5004 - 17.5192I$	$-1.31148 + 7.96520I$
$u = -0.65785 - 1.48194I$ $a = -1.43080 - 0.21430I$ $b = -1.05752 + 1.16840I$	$-12.5004 + 17.5192I$	$-1.31148 - 7.96520I$
$u = -0.52186 + 1.81589I$ $a = -0.629899 + 0.337579I$ $b = -1.152920 + 0.434503I$	$-13.84930 + 2.33793I$	0
$u = -0.52186 - 1.81589I$ $a = -0.629899 - 0.337579I$ $b = -1.152920 - 0.434503I$	$-13.84930 - 2.33793I$	0

II. $\boldsymbol{I_2^u = \langle -2.88 \times 10^8 au^{24} - 4.30 \times 10^9 u^{24} + \cdots + 4.64 \times 10^{10} a - 5.06 \times 10^9,\ 2.03 \times 10^{11} au^{24} + 1.91 \times 10^{11} u^{24} + \cdots + 1.28 \times 10^{12} a + 9.68 \times 10^{12},\ u^{25} - 2u^{24} + \cdots - 30u + 28 \rangle}$

(i) Arc colorings

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

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

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

$$a_9 = \begin{pmatrix} a \\ 0.0888371au^{24} + 1.32642u^{24} + \cdots - 14.3178a + 1.56357 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1.14416au^{24} + 0.500026u^{24} + \cdots + 5.09968a + 90.8069 \\ 0.371315au^{24} + 0.682157u^{24} + \cdots - 1.83371a + 39.0764 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.790302au^{24} - 0.0000829280u^{24} + \cdots - 18.4541a - 47.8678 \\ -0.278952au^{24} - 0.182215u^{24} + \cdots - 2.48744a + 3.86283 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.511350au^{24} + 0.219023u^{24} + \cdots - 15.9667a - 15.8313 \\ 0.0368918u^{24} + 0.431609u^{23} + \cdots - 46.5022u + 35.8993 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.548179au^{24} - 0.887679u^{24} + \cdots + 8.28779a + 12.4597 \\ 0.393575au^{24} + 0.443170u^{24} + \cdots - 14.2099a + 11.1167 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.227457au^{24} + 1.49200u^{24} + \cdots - 50.7667a - 36.5596 \\ -0.109588au^{24} + 0.713764u^{24} + \cdots - 43.9560a - 29.8354 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0888371au^{24} + 1.32642u^{24} + \cdots - 13.3178a + 1.56357 \\ -0.0290318au^{24} + 2.10466u^{24} + \cdots - 22.1285a - 5.16064 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.330051au^{24} + 2.09033u^{24} + \cdots - 28.2218a + 68.6377 \\ -0.176435au^{24} + 2.12604u^{24} + \cdots - 17.8855a + 67.5663 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= \frac{919833563}{809704132}u^{24} - \frac{3264468405}{809704132}u^{23} + \cdots + \frac{98309380939}{404852066}u - \frac{28748753193}{202426033}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{25}+30u^{24}+\cdots+180u-81)^2$
c_2, c_7	$(u^{25}+15u^{23}+\cdots+60u-9)^2$
c_3, c_6	$u^{50}-u^{49}+\cdots-3u+1$
c_4, c_{11}	$(u^{25}+2u^{24}+\cdots-30u-28)^2$
c_5, c_{12}	$u^{50}+10u^{49}+\cdots-20945u+3023$
c_8, c_{10}	$u^{50}+2u^{49}+\cdots-14284u+311$
c_9	$(u^{25}+5u^{24}+\cdots-12u+8)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{25} - 62y^{24} + \cdots + 1407132y - 6561)^2$
c_2, c_7	$(y^{25} + 30y^{24} + \cdots + 180y - 81)^2$
c_3, c_6	$y^{50} + 21y^{49} + \cdots - 13y + 1$
c_4, c_{11}	$(y^{25} + 24y^{24} + \cdots - 12596y - 784)^2$
c_5, c_{12}	$y^{50} - 8y^{49} + \cdots - 156235997y + 9138529$
c_8, c_{10}	$y^{50} + 12y^{49} + \cdots - 46687804y + 96721$
c_9	$(y^{25} + 13y^{24} + \cdots - 752y - 64)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.449283 + 0.973936I$ $a = 0.217764 + 1.043870I$ $b = 0.244229 - 0.814938I$	$0.34821 + 5.88006I$	$4.30099 - 9.81968I$
$u = 0.449283 + 0.973936I$ $a = -2.24809 - 0.13074I$ $b = -1.26226 + 0.93873I$	$0.34821 + 5.88006I$	$4.30099 - 9.81968I$
$u = 0.449283 - 0.973936I$ $a = 0.217764 - 1.043870I$ $b = 0.244229 + 0.814938I$	$0.34821 - 5.88006I$	$4.30099 + 9.81968I$
$u = 0.449283 - 0.973936I$ $a = -2.24809 + 0.13074I$ $b = -1.26226 - 0.93873I$	$0.34821 - 5.88006I$	$4.30099 + 9.81968I$
$u = -0.399469 + 0.829102I$ $a = 0.700444 + 0.414029I$ $b = 0.040945 + 0.712613I$	$0.78426 - 1.36586I$	$3.84923 + 4.03900I$
$u = -0.399469 + 0.829102I$ $a = 0.433443 - 0.136431I$ $b = -0.109234 + 1.113410I$	$0.78426 - 1.36586I$	$3.84923 + 4.03900I$
$u = -0.399469 - 0.829102I$ $a = 0.700444 - 0.414029I$ $b = 0.040945 - 0.712613I$	$0.78426 + 1.36586I$	$3.84923 - 4.03900I$
$u = -0.399469 - 0.829102I$ $a = 0.433443 + 0.136431I$ $b = -0.109234 - 1.113410I$	$0.78426 + 1.36586I$	$3.84923 - 4.03900I$
$u = 0.369340 + 0.770969I$ $a = 1.213080 - 0.407998I$ $b = -0.205521 - 0.180923I$	$0.95824 - 2.12068I$	$4.21040 + 2.51534I$
$u = 0.369340 + 0.770969I$ $a = 0.227728 + 0.451157I$ $b = 0.671745 + 1.189840I$	$0.95824 - 2.12068I$	$4.21040 + 2.51534I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.369340 - 0.770969I$ $a = 1.213080 + 0.407998I$ $b = -0.205521 + 0.180923I$	$0.95824 + 2.12068I$	$4.21040 - 2.51534I$
$u = 0.369340 - 0.770969I$ $a = 0.227728 - 0.451157I$ $b = 0.671745 - 1.189840I$	$0.95824 + 2.12068I$	$4.21040 - 2.51534I$
$u = 1.095450 + 0.502626I$ $a = 0.017947 - 1.161590I$ $b = 0.618295 + 1.048920I$	$-7.16565 + 3.70405I$	$2.35407 - 4.32771I$
$u = 1.095450 + 0.502626I$ $a = -0.470827 + 0.084074I$ $b = -0.488587 + 0.835280I$	$-7.16565 + 3.70405I$	$2.35407 - 4.32771I$
$u = 1.095450 - 0.502626I$ $a = 0.017947 + 1.161590I$ $b = 0.618295 - 1.048920I$	$-7.16565 - 3.70405I$	$2.35407 + 4.32771I$
$u = 1.095450 - 0.502626I$ $a = -0.470827 - 0.084074I$ $b = -0.488587 - 0.835280I$	$-7.16565 - 3.70405I$	$2.35407 + 4.32771I$
$u = -0.142250 + 0.744211I$ $a = 0.09725 + 1.93007I$ $b = 0.049028 - 0.916961I$	$3.43402 + 2.58613I$	$11.44299 + 4.06566I$
$u = -0.142250 + 0.744211I$ $a = -0.61783 + 2.45056I$ $b = -0.58927 + 1.78427I$	$3.43402 + 2.58613I$	$11.44299 + 4.06566I$
$u = -0.142250 - 0.744211I$ $a = 0.09725 - 1.93007I$ $b = 0.049028 + 0.916961I$	$3.43402 - 2.58613I$	$11.44299 - 4.06566I$
$u = -0.142250 - 0.744211I$ $a = -0.61783 - 2.45056I$ $b = -0.58927 - 1.78427I$	$3.43402 - 2.58613I$	$11.44299 - 4.06566I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.090470+1.253630I$ $a=-0.06412+1.46745I$ $b=-0.115968-0.899494I$	$-8.29442-4.34943I$	$0.89531+3.74757I$
$u=-0.090470+1.253630I$ $a=\ \ 1.74640+0.64289I$ $b=\ \ 1.18233+1.13631I$	$-8.29442-4.34943I$	$0.89531+3.74757I$
$u=-0.090470-1.253630I$ $a=-0.06412-1.46745I$ $b=-0.115968+0.899494I$	$-8.29442+4.34943I$	$0.89531-3.74757I$
$u=-0.090470-1.253630I$ $a=\ \ 1.74640-0.64289I$ $b=\ \ 1.18233-1.13631I$	$-8.29442+4.34943I$	$0.89531-3.74757I$
$u=-1.26849$ $a=\ \ 0.230653$ $b=-0.852852$	2.30693	28.4360
$u=-1.26849$ $a=\ \ 0.196338$ $b=-0.385079$	2.30693	28.4360
$u=-0.677112+1.125090I$ $a=-0.764175+0.376765I$ $b=-0.377246-0.617872I$	$-0.52839-6.36999I$	$1.14515+6.74051I$
$u=-0.677112+1.125090I$ $a=\ \ 1.60738-0.40721I$ $b=\ \ 1.21405+1.07055I$	$-0.52839-6.36999I$	$1.14515+6.74051I$
$u=-0.677112-1.125090I$ $a=-0.764175-0.376765I$ $b=-0.377246+0.617872I$	$-0.52839+6.36999I$	$1.14515-6.74051I$
$u=-0.677112-1.125090I$ $a=\ \ 1.60738+0.40721I$ $b=\ \ 1.21405-1.07055I$	$-0.52839+6.36999I$	$1.14515-6.74051I$

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.049518 + 0.613513I$ $a = -0.907524 + 0.658486I$ $b = -0.87857 + 1.19281I$	$-5.67553 + 3.93539I$	$-9.4979 + 11.8109I$
$u = 0.049518 + 0.613513I$ $a = -1.64771 - 5.89429I$ $b = 0.227048 - 0.081503I$	$-5.67553 + 3.93539I$	$-9.4979 + 11.8109I$
$u = 0.049518 - 0.613513I$ $a = -0.907524 - 0.658486I$ $b = -0.87857 - 1.19281I$	$-5.67553 - 3.93539I$	$-9.4979 - 11.8109I$
$u = 0.049518 - 0.613513I$ $a = -1.64771 + 5.89429I$ $b = 0.227048 + 0.081503I$	$-5.67553 - 3.93539I$	$-9.4979 - 11.8109I$
$u = -0.16128 + 1.41870I$ $a = 1.180970 - 0.553333I$ $b = 1.32141 - 0.71293I$	$-6.12566 - 3.25269I$	$-3.16655 + 3.11297I$
$u = -0.16128 + 1.41870I$ $a = -1.37512 - 0.36081I$ $b = -0.971370 - 0.717911I$	$-6.12566 - 3.25269I$	$-3.16655 + 3.11297I$
$u = -0.16128 - 1.41870I$ $a = 1.180970 + 0.553333I$ $b = 1.32141 + 0.71293I$	$-6.12566 + 3.25269I$	$-3.16655 - 3.11297I$
$u = -0.16128 - 1.41870I$ $a = -1.37512 + 0.36081I$ $b = -0.971370 + 0.717911I$	$-6.12566 + 3.25269I$	$-3.16655 - 3.11297I$
$u = 0.05510 + 1.46225I$ $a = 0.472581 + 0.499684I$ $b = 0.70443 + 2.04752I$	$1.07479 - 2.86382I$	$-12.3628 + 23.0516I$
$u = 0.05510 + 1.46225I$ $a = -0.189090 - 0.602766I$ $b = -0.162985 - 0.304673I$	$1.07479 - 2.86382I$	$-12.3628 + 23.0516I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.05510 - 1.46225I$ $a = 0.472581 - 0.499684I$ $b = 0.70443 - 2.04752I$	$1.07479 + 2.86382I$	$-12.3628 - 23.0516I$
$u = 0.05510 - 1.46225I$ $a = -0.189090 + 0.602766I$ $b = -0.162985 + 0.304673I$	$1.07479 + 2.86382I$	$-12.3628 - 23.0516I$
$u = 0.44488 + 1.48430I$ $a = -0.867276 - 0.593478I$ $b = -1.32121 - 1.02142I$	$-13.2038 + 9.0749I$	$-2.66244 - 5.61588I$
$u = 0.44488 + 1.48430I$ $a = 1.43997 - 0.08489I$ $b = 0.924432 - 0.900718I$	$-13.2038 + 9.0749I$	$-2.66244 - 5.61588I$
$u = 0.44488 - 1.48430I$ $a = -0.867276 + 0.593478I$ $b = -1.32121 + 1.02142I$	$-13.2038 - 9.0749I$	$-2.66244 + 5.61588I$
$u = 0.44488 - 1.48430I$ $a = 1.43997 + 0.08489I$ $b = 0.924432 + 0.900718I$	$-13.2038 - 9.0749I$	$-2.66244 + 5.61588I$
$u = 0.64125 + 1.73933I$ $a = -1.024150 - 0.259987I$ $b = -1.07899 + 1.46931I$	$-10.35020 + 5.69632I$	$-2.22637 - 12.15089I$
$u = 0.64125 + 1.73933I$ $a = 0.571747 - 0.130860I$ $b = 0.482247 - 0.430599I$	$-10.35020 + 5.69632I$	$-2.22637 - 12.15089I$
$u = 0.64125 - 1.73933I$ $a = -1.024150 + 0.259987I$ $b = -1.07899 - 1.46931I$	$-10.35020 - 5.69632I$	$-2.22637 + 12.15089I$
$u = 0.64125 - 1.73933I$ $a = 0.571747 + 0.130860I$ $b = 0.482247 + 0.430599I$	$-10.35020 - 5.69632I$	$-2.22637 + 12.15089I$

III. $\boldsymbol{I^u_3 = \langle -31u^{15}a - 25u^{15} + \cdots + 35a + 221,\ 344u^{15}a + 659u^{15} + \cdots + 206a + 177,\ u^{16} + u^{15} + \cdots - 3u + 1\rangle}$

(i) Arc colorings

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

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

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

$$a_9 = \begin{pmatrix} a \\ 0.373494au^{15} + 0.301205u^{15} + \cdots - 0.421687a - 2.66265 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} 1.07229au^{15} + 2.83133u^{15} + \cdots + 0.240964a - 2.22892 \\ 0.385542au^{15} + 2.15663u^{15} + \cdots + 0.951807a - 0.144578 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.433735au^{15} - 0.337349u^{15} + \cdots + 0.554217a + 4.54217 \\ -0.0120482au^{15} - 0.578313u^{15} + \cdots - 0.373494a + 3.07229 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.421687au^{15} - 0.915663u^{15} + \cdots + 0.927711a + 5.61446 \\ -1.15663u^{15} + 0.590361u^{14} + \cdots - 14.9157u + 4.14458 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.590361au^{15} - 2.83133u^{15} + \cdots - 1.69880a - 1.77108 \\ 0.493976au^{15} - 3.09639u^{15} + \cdots + 0.313253a - 0.987952 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.108434au^{15} - 4.97590u^{15} + \cdots - 1.36145a - 0.253012 \\ -0.0120482au^{15} - 5.25301u^{15} + \cdots - 0.373494a - 0.843373 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.373494au^{15} + 0.301205u^{15} + \cdots + 0.578313a - 2.66265 \\ 0.469880au^{15} + 0.0240964u^{15} + \cdots - 0.433735a - 3.25301 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.771084au^{15} + 4.68675u^{15} + \cdots + 1.09639a + 4.28916 \\ -0.397590au^{15} + 4.10843u^{15} + \cdots + 0.674699a + 6.36145 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1698}{83}u^{15} - \frac{1338}{83}u^{14} + \cdots - \frac{7092}{83}u + \frac{1810}{83}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$(u^{16} - 18u^{15} + \cdots - 1341u + 137)^2$
c_2, c_7	$u^{32} + 18u^{30} + \cdots + 1341u^2 + 137$
c_3, c_6	$u^{32} + 10u^{30} + \cdots - 5u + 1$
c_4	$(u^{16} + u^{15} + \cdots - 3u + 1)^2$
c_5, c_{12}	$u^{32} + 3u^{31} + \cdots - 5u + 1$
c_8, c_{10}	$u^{32} - u^{31} + \cdots + 6u + 1$
c_9	$(u^{16} + 3u^{15} + \cdots + 6u + 1)^2$
c_{11}	$(u^{16} - u^{15} + \cdots + 3u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$(y^{16} - 22y^{15} + \cdots - 119209y + 18769)^2$
c_2, c_7	$(y^{16} + 18y^{15} + \cdots + 1341y + 137)^2$
c_3, c_6	$y^{32} + 20y^{31} + \cdots + 7y + 1$
c_4, c_{11}	$(y^{16} + 13y^{15} + \cdots + 3y + 1)^2$
c_5, c_{12}	$y^{32} - 15y^{31} + \cdots - 7y + 1$
c_8, c_{10}	$y^{32} + 23y^{31} + \cdots + 88y + 1$
c_9	$(y^{16} + 3y^{15} + \cdots - 34y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.556603 + 0.962832I$ $a = -0.921213 + 0.873113I$ $b = -0.556179 - 0.810448I$	$-0.34455 - 7.61065I$	$2.72263 + 12.25164I$
$u = -0.556603 + 0.962832I$ $a = 1.99886 - 0.42635I$ $b = 1.33582 + 0.99706I$	$-0.34455 - 7.61065I$	$2.72263 + 12.25164I$
$u = -0.556603 - 0.962832I$ $a = -0.921213 - 0.873113I$ $b = -0.556179 + 0.810448I$	$-0.34455 + 7.61065I$	$2.72263 - 12.25164I$
$u = -0.556603 - 0.962832I$ $a = 1.99886 + 0.42635I$ $b = 1.33582 - 0.99706I$	$-0.34455 + 7.61065I$	$2.72263 - 12.25164I$
$u = -0.032016 + 0.840954I$ $a = -0.23090 - 1.77242I$ $b = 0.027959 + 0.915232I$	$3.19292 - 2.96309I$	$1.98102 + 10.21006I$
$u = -0.032016 + 0.840954I$ $a = 0.92188 + 2.20234I$ $b = 0.56258 + 1.78858I$	$3.19292 - 2.96309I$	$1.98102 + 10.21006I$
$u = -0.032016 - 0.840954I$ $a = -0.23090 + 1.77242I$ $b = 0.027959 - 0.915232I$	$3.19292 + 2.96309I$	$1.98102 - 10.21006I$
$u = -0.032016 - 0.840954I$ $a = 0.92188 - 2.20234I$ $b = 0.56258 - 1.78858I$	$3.19292 + 2.96309I$	$1.98102 - 10.21006I$
$u = 0.544906 + 1.049820I$ $a = 0.287957 + 0.363174I$ $b = 0.006775 - 0.889582I$	$-0.05029 + 4.99288I$	$0.71952 - 1.67343I$
$u = 0.544906 + 1.049820I$ $a = -1.97600 - 0.24657I$ $b = -1.10287 + 1.01226I$	$-0.05029 + 4.99288I$	$0.71952 - 1.67343I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.544906 - 1.049820I$ $a = 0.287957 - 0.363174I$ $b = 0.006775 + 0.889582I$	$-0.05029 - 4.99288I$	$0.71952 + 1.67343I$
$u = 0.544906 - 1.049820I$ $a = -1.97600 + 0.24657I$ $b = -1.10287 - 1.01226I$	$-0.05029 - 4.99288I$	$0.71952 + 1.67343I$
$u = -0.738779 + 0.964356I$ $a = -0.161973 + 0.577107I$ $b = -1.07374 + 1.16087I$	$0.01374 + 2.63681I$	$-0.70539 - 8.14668I$
$u = -0.738779 + 0.964356I$ $a = 0.023043 - 0.296668I$ $b = 0.534888 - 0.314296I$	$0.01374 + 2.63681I$	$-0.70539 - 8.14668I$
$u = -0.738779 - 0.964356I$ $a = -0.161973 - 0.577107I$ $b = -1.07374 - 1.16087I$	$0.01374 - 2.63681I$	$-0.70539 + 8.14668I$
$u = -0.738779 - 0.964356I$ $a = 0.023043 + 0.296668I$ $b = 0.534888 + 0.314296I$	$0.01374 - 2.63681I$	$-0.70539 + 8.14668I$
$u = 0.722184$ $a = -0.487742 + 0.463178I$ $b = 0.449383 - 0.847051I$	1.92817	3.78580
$u = 0.722184$ $a = -0.487742 - 0.463178I$ $b = 0.449383 + 0.847051I$	1.92817	3.78580
$u = 0.136011 + 0.607857I$ $a = -1.36599 + 0.53681I$ $b = -0.93420 + 1.21513I$	$-5.56489 + 4.12492I$	$9.2470 - 19.2793I$
$u = 0.136011 + 0.607857I$ $a = -1.06074 - 6.14319I$ $b = -0.257378 + 0.378958I$	$-5.56489 + 4.12492I$	$9.2470 - 19.2793I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ \ 0.136011-0.607857I$ $a=-1.36599-0.53681I$ $b=-0.93420-1.21513I$	$-5.56489-4.12492I$	$9.2470+19.2793I$
$u=\ \ 0.136011-0.607857I$ $a=-1.06074+6.14319I$ $b=-0.257378-0.378958I$	$-5.56489-4.12492I$	$9.2470+19.2793I$
$u=\ \ 0.05735+1.46100I$ $a=-0.545524+0.413626I$ $b=-0.58434+2.07725I$	$1.19502+2.75460I$	$23.2685+8.6216I$
$u=\ \ 0.05735+1.46100I$ $a=-0.291458+0.552110I$ $b=-0.069545+0.362058I$	$1.19502+2.75460I$	$23.2685+8.6216I$
$u=\ \ 0.05735-1.46100I$ $a=-0.545524-0.413626I$ $b=-0.58434-2.07725I$	$1.19502-2.75460I$	$23.2685-8.6216I$
$u=\ \ 0.05735-1.46100I$ $a=-0.291458-0.552110I$ $b=-0.069545-0.362058I$	$1.19502-2.75460I$	$23.2685-8.6216I$
$u=-0.47311+1.43893I$ $a=\ \ 0.915192+0.209522I$ $b=\ \ 0.341050+0.024825I$	$-10.24790-4.86155I$	$-1.48108+2.42981I$
$u=-0.47311+1.43893I$ $a=\ \ 1.43526-0.27129I$ $b=\ \ 1.00180+1.04133I$	$-10.24790-4.86155I$	$-1.48108+2.42981I$
$u=-0.47311-1.43893I$ $a=\ \ 0.915192-0.209522I$ $b=\ \ 0.341050-0.024825I$	$-10.24790+4.86155I$	$-1.48108-2.42981I$
$u=-0.47311-1.43893I$ $a=\ \ 1.43526+0.27129I$ $b=\ \ 1.00180-1.04133I$	$-10.24790+4.86155I$	$-1.48108-2.42981I$

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.402310$ $a = -1.54065 + 1.12231I$ $b = 0.318004 - 0.977732I$	1.94453	5.70980
$u = 0.402310$ $a = -1.54065 - 1.12231I$ $b = 0.318004 + 0.977732I$	1.94453	5.70980

IV.

$$\boldsymbol{I_4^u = \langle u^4 - 2u^3 + 2u^2 + b - 2u,\ u^4 - u^3 + a + u - 2,\ u^5 - 2u^4 + 3u^3 - 3u^2 + u - 1\rangle}$$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -7u^4 + 13u^3 - 25u^2 + 15u - 9$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_7	y^5
c_3, c_6	$y^5 - 2y^4 + 3y^3 - 3y^2 + 3y - 1$
c_4, c_{11}	$y^5 + 2y^4 - y^3 - 7y^2 - 5y - 1$
c_5, c_{12}	$y^5 - 3y^4 + 3y^3 - 3y^2 + 2y - 1$
c_8, c_{10}	$y^5 + 2y^4 + 3y^3 + 5y^2 + 3y - 1$
c_9	$y^5 + y^4 + 7y^3 + 8y^2 + y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.372466 + 1.263920I$ $a = -1.347300 - 0.010044I$ $b = -1.045750 + 0.405588I$	$-3.01018 + 5.17259I$	$1.83188 - 4.76077I$
$u = 0.372466 - 1.263920I$ $a = -1.347300 + 0.010044I$ $b = -1.045750 - 0.405588I$	$-3.01018 - 5.17259I$	$1.83188 + 4.76077I$
$u = 1.33263$ $a = -0.119827$ $b = 0.692872$	2.14584	−24.7190
$u = -0.038780 + 0.656277I$ $a = 1.90721 - 0.97967I$ $b = 0.699311 + 0.811268I$	$0.29233 - 3.70382I$	$0.52749 + 7.17476I$
$u = -0.038780 - 0.656277I$ $a = 1.90721 + 0.97967I$ $b = 0.699311 - 0.811268I$	$0.29233 + 3.70382I$	$0.52749 - 7.17476I$

V. $I_1^v = \langle a,\ b^2 - b + 1,\ v + 1 \rangle$

(i) Arc colorings

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

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

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

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

$$a_{12} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} b \\ b \end{pmatrix}$$

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

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

$$a_1 = \begin{pmatrix} b \\ b \end{pmatrix}$$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4b - 2$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v = -1.00000$ $a = 0$ $b = 0.500000 + 0.866025I$	$-2.02988I$	$0. + 3.46410I$
$v = -1.00000$ $a = 0$ $b = 0.500000 - 0.866025I$	$2.02988I$	$0. - 3.46410I$

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^5(u^2+u+1)(u^{16}-18u^{15}+\cdots-1341u+137)^2$ $\cdot((u^{25}+30u^{24}+\cdots+180u-81)^2)(u^{37}+44u^{36}+\cdots-9216u-4096)$
c_2, c_7	$u^5(u^2+u+1)(u^{25}+15u^{23}+\cdots+60u-9)^2$ $\cdot(u^{32}+18u^{30}+\cdots+1341u^2+137)(u^{37}-4u^{36}+\cdots+288u-64)$
c_3, c_6	$(u^2+u+1)(u^5-u^3+u^2+u-1)(u^{32}+10u^{30}+\cdots-5u+1)$ $\cdot(u^{37}-u^{36}+\cdots-4u-1)(u^{50}-u^{49}+\cdots-3u+1)$
c_4	$u^2(u^5-2u^4+\cdots+u-1)(u^{16}+u^{15}+\cdots-3u+1)^2$ $\cdot((u^{25}+2u^{24}+\cdots-30u-28)^2)(u^{37}-5u^{36}+\cdots+135u-216)$
c_5, c_{12}	$(u^2-u+1)(u^5-u^4-u^3+u^2-1)(u^{32}+3u^{31}+\cdots-5u+1)$ $\cdot(u^{37}+2u^{36}+\cdots+55u-13)(u^{50}+10u^{49}+\cdots-20945u+3023)$
c_8, c_{10}	$(u^2+u+1)(u^5+2u^4+\cdots+3u+1)(u^{32}-u^{31}+\cdots+6u+1)$ $\cdot(u^{37}-3u^{36}+\cdots+2158u-419)(u^{50}+2u^{49}+\cdots-14284u+311)$
c_9	$(u^2-u+1)(u^5-3u^4+\cdots+3u-1)(u^{16}+3u^{15}+\cdots+6u+1)^2$ $\cdot((u^{25}+5u^{24}+\cdots-12u+8)^2)(u^{37}-9u^{36}+\cdots+352u+128)$
c_{11}	$u^2(u^5+2u^4+\cdots+u+1)(u^{16}-u^{15}+\cdots+3u+1)^2$ $\cdot((u^{25}+2u^{24}+\cdots-30u-28)^2)(u^{37}-5u^{36}+\cdots+135u-216)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^5(y^2+y+1)(y^{16}-22y^{15}+\cdots-119209y+18769)^2$ $\cdot(y^{25}-62y^{24}+\cdots+1407132y-6561)^2$ $\cdot(y^{37}-92y^{36}+\cdots+5631901696y-16777216)$
c_2, c_7	$y^5(y^2+y+1)(y^{16}+18y^{15}+\cdots+1341y+137)^2$ $\cdot((y^{25}+30y^{24}+\cdots+180y-81)^2)(y^{37}+44y^{36}+\cdots-9216y-4096)$
c_3, c_6	$(y^2+y+1)(y^5-2y^4+\cdots+3y-1)(y^{32}+20y^{31}+\cdots+7y+1)$ $\cdot(y^{37}-3y^{36}+\cdots+26y-1)(y^{50}+21y^{49}+\cdots-13y+1)$
c_4, c_{11}	$y^2(y^5+2y^4+\cdots-5y-1)(y^{16}+13y^{15}+\cdots+3y+1)^2$ $\cdot(y^{25}+24y^{24}+\cdots-12596y-784)^2$ $\cdot(y^{37}+25y^{36}+\cdots-40095y-46656)$
c_5, c_{12}	$(y^2+y+1)(y^5-3y^4+\cdots+2y-1)(y^{32}-15y^{31}+\cdots-7y+1)$ $\cdot(y^{37}+30y^{36}+\cdots-4593y-169)$ $\cdot(y^{50}-8y^{49}+\cdots-156235997y+9138529)$
c_8, c_{10}	$(y^2+y+1)(y^5+2y^4+\cdots+3y-1)(y^{32}+23y^{31}+\cdots+88y+1)$ $\cdot(y^{37}-47y^{36}+\cdots+2060002y-175561)$ $\cdot(y^{50}+12y^{49}+\cdots-46687804y+96721)$
c_9	$(y^2+y+1)(y^5+y^4+\cdots+y-1)(y^{16}+3y^{15}+\cdots-34y+1)^2$ $\cdot(y^{25}+13y^{24}+\cdots-752y-64)^2$ $\cdot(y^{37}+y^{36}+\cdots-232448y-16384)$