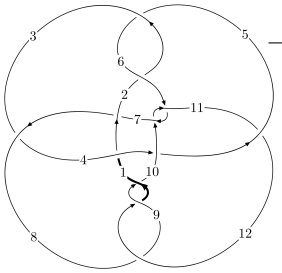
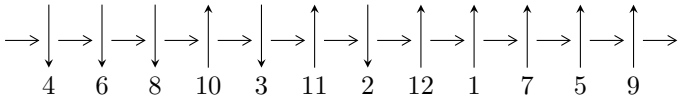
$12a_{0901}$ $(K12a_{0901})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -1.80223 \times 10^{659} u^{147} + 7.88927 \times 10^{658} u^{146} + \cdots + 2.16053 \times 10^{660} b + 7.13368 \times 10^{662}, \\ & 6.57936 \times 10^{661} u^{147} - 2.69304 \times 10^{662} u^{146} + \cdots + 3.71827 \times 10^{663} a - 6.79021 \times 10^{665}, \\ & u^{148} + u^{147} + \cdots - 6495u + 1721 \rangle \\ I_2^u = \langle & -9.31264 \times 10^{23} u^{36} + 1.92347 \times 10^{24} u^{35} + \cdots + 9.65197 \times 10^{22} b + 1.26463 \times 10^{23}, \\ & 1.43280 \times 10^{22} u^{36} - 2.47582 \times 10^{22} u^{35} + \cdots + 1.08449 \times 10^{21} a + 6.16688 \times 10^{21}, \ u^{37} - 2u^{36} + \cdots + 3u + 1 \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 185 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. $\boldsymbol{I_1^u = \langle -1.80 \times 10^{659} u^{147} + 7.89 \times 10^{658} u^{146} + \cdots + 2.16 \times 10^{660} b + 7.13 \times 10^{662},\ 6.58 \times 10^{661} u^{147} - 2.69 \times 10^{662} u^{146} + \cdots + 3.72 \times 10^{663} a - 6.79 \times 10^{665},\ u^{148} + u^{147} + \cdots - 6495u + 1721 \rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix} -0.0176947u^{147} + 0.0724273u^{146} + \cdots - 739.713u + 182.618 \\ 0.0834164u^{147} - 0.0365155u^{146} + \cdots + 1469.93u - 330.182 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.0657217u^{147} + 0.0359118u^{146} + \cdots + 730.221u - 147.565 \\ 0.0834164u^{147} - 0.0365155u^{146} + \cdots + 1469.93u - 330.182 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.167819u^{147} - 0.0717975u^{146} + \cdots - 1138.17u + 149.328 \\ 0.0645371u^{147} + 0.0948585u^{146} + \cdots - 144.196u + 109.063 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.200183u^{147} + 0.155669u^{146} + \cdots + 1087.71u - 96.3337 \\ 0.118155u^{147} - 0.0337847u^{146} + \cdots + 1968.03u - 447.161 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.0143625u^{147} - 0.0354754u^{146} + \cdots + 556.773u - 175.302 \\ 0.149382u^{147} + 0.188926u^{146} + \cdots + 345.006u + 29.2898 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.188215u^{147} + 0.109692u^{146} + \cdots + 1921.96u - 364.047 \\ 0.0686318u^{147} + 0.260485u^{146} + \cdots - 1563.94u + 503.517 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.334417u^{147} + 0.195378u^{146} + \cdots + 2524.10u - 375.552 \\ 0.0677481u^{147} - 0.0426861u^{146} + \cdots + 1376.60u - 330.620 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.288356u^{147} - 0.308685u^{146} + \cdots - 861.573u - 42.3570 \\ 0.109464u^{147} - 0.0239180u^{146} + \cdots + 1782.76u - 397.651 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.133986u^{147} + 0.651620u^{146} + \cdots - 4898.94u + 1490.55$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{148} - 10u^{147} + \cdots + 297636u + 230161$
c_2, c_5	$u^{148} + 8u^{147} + \cdots + 10382u - 651$
c_3	$u^{148} - 2u^{147} + \cdots - 127745u - 3703$
c_4	$u^{148} - u^{147} + \cdots - 634458u + 118991$
c_6, c_{10}	$u^{148} + u^{147} + \cdots - 6495u + 1721$
c_7	$u^{148} + 8u^{147} + \cdots + 435567u - 34657$
c_8, c_9, c_{12}	$u^{148} - 4u^{147} + \cdots + u - 3$
c_{11}	$u^{148} + u^{147} + \cdots - 5763627u + 246787$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{148} + 32y^{147} + \cdots - 198487685030y + 52974085921$
c_2, c_5	$y^{148} + 82y^{147} + \cdots - 3620716y + 423801$
c_3	$y^{148} + 46y^{147} + \cdots - 8748186675y + 13712209$
c_4	$y^{148} - 23y^{147} + \cdots - 475017227648y + 14158858081$
c_6, c_{10}	$y^{148} + 79y^{147} + \cdots + 91860223y + 2961841$
c_7	$y^{148} - 2y^{147} + \cdots + 94156598255y + 1201107649$
c_8, c_9, c_{12}	$y^{148} - 148y^{147} + \cdots + 59y + 9$
c_{11}	$y^{148} - 17y^{147} + \cdots - 5010577456011y + 60903823369$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.327460 + 0.945815I$ $a = -0.424503 - 0.934062I$ $b = -1.249480 - 0.056347I$	$0.09824 + 2.48499I$	0
$u = 0.327460 - 0.945815I$ $a = -0.424503 + 0.934062I$ $b = -1.249480 + 0.056347I$	$0.09824 - 2.48499I$	0
$u = -0.094013 + 0.985581I$ $a = -0.571976 - 0.332766I$ $b = -1.33432 + 0.60637I$	$0.339153 + 1.231260I$	0
$u = -0.094013 - 0.985581I$ $a = -0.571976 + 0.332766I$ $b = -1.33432 - 0.60637I$	$0.339153 - 1.231260I$	0
$u = 0.589433 + 0.782592I$ $a = 1.29592 + 0.96263I$ $b = 0.600291 - 0.988967I$	$2.86588 + 3.78944I$	0
$u = 0.589433 - 0.782592I$ $a = 1.29592 - 0.96263I$ $b = 0.600291 + 0.988967I$	$2.86588 - 3.78944I$	0
$u = -0.278249 + 0.983136I$ $a = -0.217765 + 0.534064I$ $b = -1.262320 + 0.324588I$	$-4.02629 - 0.91346I$	0
$u = -0.278249 - 0.983136I$ $a = -0.217765 - 0.534064I$ $b = -1.262320 - 0.324588I$	$-4.02629 + 0.91346I$	0
$u = -0.487982 + 0.836232I$ $a = 1.36847 - 0.69366I$ $b = 0.444592 + 1.147830I$	$3.74967 + 0.43326I$	0
$u = -0.487982 - 0.836232I$ $a = 1.36847 + 0.69366I$ $b = 0.444592 - 1.147830I$	$3.74967 - 0.43326I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.164652 + 1.026380I$ $a = -0.361772 + 0.085181I$ $b = -1.289270 - 0.367995I$	$-4.07475 + 0.43112I$	0
$u = \quad 0.164652 - 1.026380I$ $a = -0.361772 - 0.085181I$ $b = -1.289270 + 0.367995I$	$-4.07475 - 0.43112I$	0
$u = \quad 0.295084 + 1.004880I$ $a = \quad 0.154047 - 0.527586I$ $b = -1.34334 - 0.54776I$	$0.067072 - 0.445090I$	0
$u = \quad 0.295084 - 1.004880I$ $a = \quad 0.154047 + 0.527586I$ $b = -1.34334 + 0.54776I$	$0.067072 + 0.445090I$	0
$u = \quad 0.384958 + 0.973999I$ $a = \quad 0.708825 + 0.134760I$ $b = -0.542792 - 0.945498I$	$3.40456 - 2.60781I$	0
$u = \quad 0.384958 - 0.973999I$ $a = \quad 0.708825 - 0.134760I$ $b = -0.542792 + 0.945498I$	$3.40456 + 2.60781I$	0
$u = \quad 0.641730 + 0.703519I$ $a = -0.051852 - 0.878032I$ $b = \quad 0.301283 + 1.169620I$	$3.08692 + 1.00320I$	0
$u = \quad 0.641730 - 0.703519I$ $a = -0.051852 + 0.878032I$ $b = \quad 0.301283 - 1.169620I$	$3.08692 - 1.00320I$	0
$u = -0.910928 + 0.260198I$ $a = \quad 0.58412 + 1.57362I$ $b = -0.310722 - 1.237560I$	$8.43877 - 3.99877I$	0
$u = -0.910928 - 0.260198I$ $a = \quad 0.58412 - 1.57362I$ $b = -0.310722 + 1.237560I$	$8.43877 + 3.99877I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.360455 + 0.992408I$ $a = -2.39258 - 0.57626I$ $b = -0.214584 + 1.208210I$	$9.44112 + 7.46951I$	0
$u = 0.360455 - 0.992408I$ $a = -2.39258 + 0.57626I$ $b = -0.214584 - 1.208210I$	$9.44112 - 7.46951I$	0
$u = 0.940800 + 0.531582I$ $a = -0.07235 - 1.69572I$ $b = -0.096258 + 0.659335I$	$1.42971 + 0.62135I$	0
$u = 0.940800 - 0.531582I$ $a = -0.07235 + 1.69572I$ $b = -0.096258 - 0.659335I$	$1.42971 - 0.62135I$	0
$u = 0.436596 + 0.808160I$ $a = 1.53151 + 0.60269I$ $b = 0.486679 - 1.327630I$	$10.41880 - 3.18813I$	0
$u = 0.436596 - 0.808160I$ $a = 1.53151 - 0.60269I$ $b = 0.486679 + 1.327630I$	$10.41880 + 3.18813I$	0
$u = -0.633780 + 0.895314I$ $a = -0.168635 + 0.729388I$ $b = 0.552232 - 1.237510I$	$8.08822 + 3.02099I$	0
$u = -0.633780 - 0.895314I$ $a = -0.168635 - 0.729388I$ $b = 0.552232 + 1.237510I$	$8.08822 - 3.02099I$	0
$u = 0.376727 + 0.816834I$ $a = -0.442021 - 1.032740I$ $b = 0.20958 + 1.69246I$	$10.46090 + 6.68852I$	0
$u = 0.376727 - 0.816834I$ $a = -0.442021 + 1.032740I$ $b = 0.20958 - 1.69246I$	$10.46090 - 6.68852I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.357345+1.062200I$ $a=\ \ 0.300376-0.114141I$ $b=-0.710634+0.548246I$	$-2.16423+0.32704I$	0
$u=-0.357345-1.062200I$ $a=\ \ 0.300376+0.114141I$ $b=-0.710634-0.548246I$	$-2.16423-0.32704I$	0
$u=-0.558380+0.676481I$ $a=\ \ 1.49050-1.15744I$ $b=\ \ 0.754469+1.006200I$	$8.72604-7.73878I$	0
$u=-0.558380-0.676481I$ $a=\ \ 1.49050+1.15744I$ $b=\ \ 0.754469-1.006200I$	$8.72604+7.73878I$	0
$u=-0.568964+0.974866I$ $a=\ \ 1.072640-0.334460I$ $b=\ \ 0.101197+0.386061I$	$5.08559-2.03296I$	0
$u=-0.568964-0.974866I$ $a=\ \ 1.072640+0.334460I$ $b=\ \ 0.101197-0.386061I$	$5.08559+2.03296I$	0
$u=-0.173815+1.115360I$ $a=-0.135469-0.135598I$ $b=-1.351720+0.094448I$	$-0.35342-1.74728I$	0
$u=-0.173815-1.115360I$ $a=-0.135469+0.135598I$ $b=-1.351720-0.094448I$	$-0.35342+1.74728I$	0
$u=\ \ 1.064050+0.382095I$ $a=\ \ 0.510064+1.269440I$ $b=-0.229169-1.050720I$	$3.47846-0.61329I$	0
$u=\ \ 1.064050-0.382095I$ $a=\ \ 0.510064-1.269440I$ $b=-0.229169+1.050720I$	$3.47846+0.61329I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.318147+1.091070I$ $a=\ \ 1.46398-2.21000I$ $b=\ \ 0.301222+1.133490I$	$5.33680-9.02823I$	0
$u=-0.318147-1.091070I$ $a=\ \ 1.46398+2.21000I$ $b=\ \ 0.301222-1.133490I$	$5.33680+9.02823I$	0
$u=-0.718234+0.473069I$ $a=\ \ 0.595603+1.039350I$ $b=-0.200419-0.919433I$	$6.50030-2.96119I$	0
$u=-0.718234-0.473069I$ $a=\ \ 0.595603-1.039350I$ $b=-0.200419+0.919433I$	$6.50030+2.96119I$	0
$u=-0.719010+0.915478I$ $a=-0.49043+1.55291I$ $b=-0.544669-0.802096I$	$-1.52231-4.49225I$	0
$u=-0.719010-0.915478I$ $a=-0.49043-1.55291I$ $b=-0.544669+0.802096I$	$-1.52231+4.49225I$	0
$u=-0.335656+1.123070I$ $a=-1.344090+0.111000I$ $b=-0.451364-1.029490I$	$1.63448-5.80737I$	0
$u=-0.335656-1.123070I$ $a=-1.344090-0.111000I$ $b=-0.451364+1.029490I$	$1.63448+5.80737I$	0
$u=-0.780347+0.258301I$ $a=-0.174151-0.093894I$ $b=\ \ 0.576219-0.423570I$	$7.67165-2.75491I$	0
$u=-0.780347-0.258301I$ $a=-0.174151+0.093894I$ $b=\ \ 0.576219+0.423570I$	$7.67165+2.75491I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.393547+0.719286I$ $a=-0.300635+1.131760I$ $b=\ \ 0.10246-1.50238I$	$4.18235-4.24537I$	0
$u=-0.393547-0.719286I$ $a=-0.300635-1.131760I$ $b=\ \ 0.10246+1.50238I$	$4.18235+4.24537I$	0
$u=\ \ 0.590425+1.044130I$ $a=\ \ 1.252360+0.628263I$ $b=\ \ 0.010855-0.799871I$	$0.87555+2.04621I$	0
$u=\ \ 0.590425-1.044130I$ $a=\ \ 1.252360-0.628263I$ $b=\ \ 0.010855+0.799871I$	$0.87555-2.04621I$	0
$u=\ \ 0.526263+1.081270I$ $a=-1.25471-1.49272I$ $b=-0.64364+1.43335I$	$4.53118+9.23551I$	0
$u=\ \ 0.526263-1.081270I$ $a=-1.25471+1.49272I$ $b=-0.64364-1.43335I$	$4.53118-9.23551I$	0
$u=-0.525398+1.087220I$ $a=\ \ 0.588882-0.404454I$ $b=\ \ 0.655780+0.206219I$	$5.25910-2.05258I$	0
$u=-0.525398-1.087220I$ $a=\ \ 0.588882+0.404454I$ $b=\ \ 0.655780-0.206219I$	$5.25910+2.05258I$	0
$u=\ \ 0.292585+1.172050I$ $a=-0.104214+0.264164I$ $b=-0.653158+0.099797I$	$-2.60676+2.72781I$	0
$u=\ \ 0.292585-1.172050I$ $a=-0.104214-0.264164I$ $b=-0.653158-0.099797I$	$-2.60676-2.72781I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.594469 + 1.060700I$ $a = -0.68109 - 1.55271I$ $b = -0.817323 + 1.111410I$	$2.11853 + 6.93365I$	0
$u = 0.594469 - 1.060700I$ $a = -0.68109 + 1.55271I$ $b = -0.817323 - 1.111410I$	$2.11853 - 6.93365I$	0
$u = 0.748993 + 0.225229I$ $a = 0.49779 - 1.47171I$ $b = -0.255696 + 1.182540I$	$3.01720 + 2.97402I$	0
$u = 0.748993 - 0.225229I$ $a = 0.49779 + 1.47171I$ $b = -0.255696 - 1.182540I$	$3.01720 - 2.97402I$	0
$u = 0.015886 + 0.779672I$ $a = -1.90353 + 1.32864I$ $b = -0.457359 - 0.987780I$	$-0.40292 - 1.42468I$	0
$u = 0.015886 - 0.779672I$ $a = -1.90353 - 1.32864I$ $b = -0.457359 + 0.987780I$	$-0.40292 + 1.42468I$	0
$u = 0.062642 + 0.776437I$ $a = -0.98493 - 1.47482I$ $b = -0.49763 + 1.36575I$	$4.65483 + 4.54755I$	0
$u = 0.062642 - 0.776437I$ $a = -0.98493 + 1.47482I$ $b = -0.49763 - 1.36575I$	$4.65483 - 4.54755I$	0
$u = -0.702892 + 0.324643I$ $a = 0.78615 - 1.56821I$ $b = -0.387739 + 1.183010I$	$1.63395 + 2.90406I$	0
$u = -0.702892 - 0.324643I$ $a = 0.78615 + 1.56821I$ $b = -0.387739 - 1.183010I$	$1.63395 - 2.90406I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.199260 + 0.307222I$ $a = -0.35222 - 1.40815I$ $b = 0.487810 + 1.239100I$	$10.3367 - 12.9066I$	0
$u = 1.199260 - 0.307222I$ $a = -0.35222 + 1.40815I$ $b = 0.487810 - 1.239100I$	$10.3367 + 12.9066I$	0
$u = -0.541171 + 1.116880I$ $a = -1.00170 + 1.35768I$ $b = -0.67164 - 1.32051I$	$-0.67947 - 7.67175I$	0
$u = -0.541171 - 1.116880I$ $a = -1.00170 - 1.35768I$ $b = -0.67164 + 1.32051I$	$-0.67947 + 7.67175I$	0
$u = 0.750165 + 0.101025I$ $a = -0.444685 + 1.193580I$ $b = 0.813556 - 0.022695I$	$6.75490 - 8.13829I$	0
$u = 0.750165 - 0.101025I$ $a = -0.444685 - 1.193580I$ $b = 0.813556 + 0.022695I$	$6.75490 + 8.13829I$	0
$u = -0.324448 + 1.200440I$ $a = -0.717199 + 0.180414I$ $b = -0.705577 - 0.928721I$	$1.79424 - 5.77597I$	0
$u = -0.324448 - 1.200440I$ $a = -0.717199 - 0.180414I$ $b = -0.705577 + 0.928721I$	$1.79424 + 5.77597I$	0
$u = -0.632137 + 1.076460I$ $a = 1.39036 - 0.69993I$ $b = -0.116638 + 0.909773I$	$6.16325 - 1.53180I$	0
$u = -0.632137 - 1.076460I$ $a = 1.39036 + 0.69993I$ $b = -0.116638 - 0.909773I$	$6.16325 + 1.53180I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.209790+0.325509I$ $a=-0.271622+1.340840I$ $b=\ \ 0.456811-1.174180I$	$3.70324+8.68012I$	0
$u=-1.209790-0.325509I$ $a=-0.271622-1.340840I$ $b=\ \ 0.456811+1.174180I$	$3.70324-8.68012I$	0
$u=-0.732110+0.112013I$ $a=-0.088768-1.163110I$ $b=\ \ 0.673572+0.053842I$	$0.53327+4.42313I$	0
$u=-0.732110-0.112013I$ $a=-0.088768+1.163110I$ $b=\ \ 0.673572-0.053842I$	$0.53327-4.42313I$	0
$u=\ \ 0.348039+0.650251I$ $a=\ \ 0.44224+2.66204I$ $b=-0.13707-1.43352I$	$10.56180-4.32345I$	0
$u=\ \ 0.348039-0.650251I$ $a=\ \ 0.44224-2.66204I$ $b=-0.13707+1.43352I$	$10.56180+4.32345I$	0
$u=\ \ 0.609048+0.400273I$ $a=\ \ 0.94141+1.88076I$ $b=-0.454702-1.330260I$	$6.52915-4.71836I$	0
$u=\ \ 0.609048-0.400273I$ $a=\ \ 0.94141-1.88076I$ $b=-0.454702+1.330260I$	$6.52915+4.71836I$	0
$u=\ \ 0.480718+1.178560I$ $a=\ \ 0.219493+0.120634I$ $b=\ \ 0.911624+0.299427I$	$-1.77452+4.30774I$	0
$u=\ \ 0.480718-1.178560I$ $a=\ \ 0.219493-0.120634I$ $b=\ \ 0.911624-0.299427I$	$-1.77452-4.30774I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.386099+1.216160I$ $a=\ 0.703089-1.187430I$ $b=\ 0.396513+0.851143I$	$-3.22957+0.33726I$	0
$u=-0.386099-1.216160I$ $a=\ 0.703089+1.187430I$ $b=\ 0.396513-0.851143I$	$-3.22957-0.33726I$	0
$u=-0.498100+1.180890I$ $a=\ 0.067306-0.211132I$ $b=\ 1.131640-0.286713I$	$-2.53549-9.03517I$	0
$u=-0.498100-1.180890I$ $a=\ 0.067306+0.211132I$ $b=\ 1.131640+0.286713I$	$-2.53549+9.03517I$	0
$u=\ 0.336231+1.239100I$ $a=\ 1.28414+1.20020I$ $b=\ 0.327159-0.973623I$	$-2.22474+4.63364I$	0
$u=\ 0.336231-1.239100I$ $a=\ 1.28414-1.20020I$ $b=\ 0.327159+0.973623I$	$-2.22474-4.63364I$	0
$u=\ 0.502557+1.183730I$ $a=-0.000241+0.299146I$ $b=\ 1.261280+0.225920I$	$3.65656+12.79440I$	0
$u=\ 0.502557-1.183730I$ $a=-0.000241-0.299146I$ $b=\ 1.261280-0.225920I$	$3.65656-12.79440I$	0
$u=\ 1.249910+0.332691I$ $a=-0.123167-1.331140I$ $b=\ 0.372505+1.110110I$	$4.21736-3.03604I$	0
$u=\ 1.249910-0.332691I$ $a=-0.123167+1.331140I$ $b=\ 0.372505-1.110110I$	$4.21736+3.03604I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.272310+0.268580I$ $a=\ 0.00537+1.48522I$ $b=\ 0.181300-1.169780I$	$12.34700-0.54896I$	0
$u=-1.272310-0.268580I$ $a=\ 0.00537-1.48522I$ $b=\ 0.181300+1.169780I$	$12.34700+0.54896I$	0
$u=\ 0.019081+0.698158I$ $a=-3.48771-0.82257I$ $b=-0.159550+0.725661I$	$0.25997-3.07023I$	0
$u=\ 0.019081-0.698158I$ $a=-3.48771+0.82257I$ $b=-0.159550-0.725661I$	$0.25997+3.07023I$	0
$u=\ 0.396045+1.249290I$ $a=\ 0.391965+1.160490I$ $b=\ 0.477920-0.726603I$	$2.91771-3.95168I$	0
$u=\ 0.396045-1.249290I$ $a=\ 0.391965-1.160490I$ $b=\ 0.477920+0.726603I$	$2.91771+3.95168I$	0
$u=\ 0.459018+1.241690I$ $a=-0.732145-0.857516I$ $b=-0.69090+1.27375I$	$-1.04795+7.26322I$	0
$u=\ 0.459018-1.241690I$ $a=-0.732145+0.857516I$ $b=-0.69090-1.27375I$	$-1.04795-7.26322I$	0
$u=-0.129557+0.662291I$ $a=-4.16261+1.07662I$ $b=\ 0.069622-0.769446I$	$7.14084+6.73923I$	$7.06731+0.I$
$u=-0.129557-0.662291I$ $a=-4.16261-1.07662I$ $b=\ 0.069622+0.769446I$	$7.14084-6.73923I$	$7.06731+0.I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.103512 + 1.329150I$ $a = 0.659184 + 0.588786I$ $b = 0.190866 + 0.690935I$	$-3.26423 + 2.04583I$	0
$u = 0.103512 - 1.329150I$ $a = 0.659184 - 0.588786I$ $b = 0.190866 - 0.690935I$	$-3.26423 - 2.04583I$	0
$u = 0.647189 + 0.148271I$ $a = 0.435439 + 0.653133I$ $b = 0.399705 + 0.084061I$	$1.263080 + 0.068051I$	$6.30472 + 0.I$
$u = 0.647189 - 0.148271I$ $a = 0.435439 - 0.653133I$ $b = 0.399705 - 0.084061I$	$1.263080 - 0.068051I$	$6.30472 + 0.I$
$u = 0.489498 + 0.445306I$ $a = 1.31677 + 0.71222I$ $b = -0.595035 - 0.644305I$	$3.59416 - 2.22787I$	$4.44828 + 3.28633I$
$u = 0.489498 - 0.445306I$ $a = 1.31677 - 0.71222I$ $b = -0.595035 + 0.644305I$	$3.59416 + 2.22787I$	$4.44828 - 3.28633I$
$u = 0.287843 + 1.323100I$ $a = 1.36976 + 0.86403I$ $b = 0.313526 - 0.946520I$	$-2.24947 + 4.63510I$	0
$u = 0.287843 - 1.323100I$ $a = 1.36976 - 0.86403I$ $b = 0.313526 + 0.946520I$	$-2.24947 - 4.63510I$	0
$u = -0.291922 + 1.330630I$ $a = -0.030923 - 0.570633I$ $b = 0.218901 - 0.261061I$	$2.72975 - 6.39392I$	0
$u = -0.291922 - 1.330630I$ $a = -0.030923 + 0.570633I$ $b = 0.218901 + 0.261061I$	$2.72975 + 6.39392I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.137894 + 1.384450I$ $a = 0.473686 - 0.229744I$ $b = 0.367351 + 0.643175I$	$-3.14627 + 1.58217I$	0
$u = 0.137894 - 1.384450I$ $a = 0.473686 + 0.229744I$ $b = 0.367351 - 0.643175I$	$-3.14627 - 1.58217I$	0
$u = -0.486396 + 1.322520I$ $a = -0.541922 + 0.961637I$ $b = -0.70086 - 1.39734I$	$3.73453 - 8.87200I$	0
$u = -0.486396 - 1.322520I$ $a = -0.541922 - 0.961637I$ $b = -0.70086 + 1.39734I$	$3.73453 + 8.87200I$	0
$u = 0.712489 + 1.220210I$ $a = -0.551226 - 1.269330I$ $b = -0.492078 + 1.207440I$	$0.95408 + 7.02179I$	0
$u = 0.712489 - 1.220210I$ $a = -0.551226 + 1.269330I$ $b = -0.492078 - 1.207440I$	$0.95408 - 7.02179I$	0
$u = -0.64146 + 1.30065I$ $a = 1.02448 - 1.13137I$ $b = 0.421097 + 1.208970I$	$8.99948 - 5.98898I$	0
$u = -0.64146 - 1.30065I$ $a = 1.02448 + 1.13137I$ $b = 0.421097 - 1.208970I$	$8.99948 + 5.98898I$	0
$u = 0.67829 + 1.28800I$ $a = 0.86973 + 1.30321I$ $b = 0.66143 - 1.33954I$	$7.2150 + 19.4914I$	0
$u = 0.67829 - 1.28800I$ $a = 0.86973 - 1.30321I$ $b = 0.66143 + 1.33954I$	$7.2150 - 19.4914I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.68089+1.29131I$ $a=\ \ 0.86557-1.24754I$ $b=\ \ 0.64383+1.27373I$	$0.5978-15.3138I$	0
$u=-0.68089-1.29131I$ $a=\ \ 0.86557+1.24754I$ $b=\ \ 0.64383-1.27373I$	$0.5978+15.3138I$	0
$u=-0.200873+0.490804I$ $a=\ \ 0.13183-2.23911I$ $b=-0.208639+1.353350I$	$3.80782+3.05640I$	$9.07935+5.91717I$
$u=-0.200873-0.490804I$ $a=\ \ 0.13183+2.23911I$ $b=-0.208639-1.353350I$	$3.80782-3.05640I$	$9.07935-5.91717I$
$u=\ \ 0.68051+1.30472I$ $a=\ \ 0.89577+1.17538I$ $b=\ \ 0.578800-1.204860I$	$1.03614+9.77107I$	0
$u=\ \ 0.68051-1.30472I$ $a=\ \ 0.89577-1.17538I$ $b=\ \ 0.578800+1.204860I$	$1.03614-9.77107I$	0
$u=-0.03856+1.53327I$ $a=\ \ 0.167425+0.291661I$ $b=\ \ 0.329821-0.720392I$	$-3.70400+3.64743I$	0
$u=-0.03856-1.53327I$ $a=\ \ 0.167425-0.291661I$ $b=\ \ 0.329821+0.720392I$	$-3.70400-3.64743I$	0
$u=\ \ 0.439603$ $a=\ \ 1.26679$ $b=\ \ 0.145533$	0.935748	13.0500
$u=-0.77249+1.38255I$ $a=-0.464026+1.185570I$ $b=-0.337280-1.303550I$	$7.69546-8.42729I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.77249-1.38255I$ $a=-0.464026-1.185570I$ $b=-0.337280+1.303550I$	$7.69546+8.42729I$	0
$u=\ 0.406425$ $a=\ 1.74220$ $b=-0.870921$	2.35583	4.98770
$u=-0.223074+0.262560I$ $a=\ 1.381930-0.217888I$ $b=-0.552527+0.215524I$	$-1.221340+0.638461I$	$-4.33716-1.63874I$
$u=-0.223074-0.262560I$ $a=\ 1.381930+0.217888I$ $b=-0.552527-0.215524I$	$-1.221340-0.638461I$	$-4.33716+1.63874I$
$u=\ 0.03235+1.68857I$ $a=\ 0.006953-0.417599I$ $b=\ 0.319860+0.808000I$	$2.97787-7.45637I$	0
$u=\ 0.03235-1.68857I$ $a=\ 0.006953+0.417599I$ $b=\ 0.319860-0.808000I$	$2.97787+7.45637I$	0
$u=-1.83778+0.23088I$ $a=\ 0.180170-1.195190I$ $b=-0.074564+1.013840I$	$11.70940+0.25310I$	0
$u=-1.83778-0.23088I$ $a=\ 0.180170+1.195190I$ $b=-0.074564-1.013840I$	$11.70940-0.25310I$	0

II.

$\boldsymbol{I_2^u = \langle -9.31\times10^{23}u^{36}+1.92\times10^{24}u^{35}+\cdots+9.65\times10^{22}b+1.26\times10^{23},\ 1.43\times10^{22}u^{36}-2.48\times10^{22}u^{35}+\cdots+1.08\times10^{21}a+6.17\times10^{21},\ u^{37}-2u^{36}+\cdots+3u+1\rangle}$

(i) Arc colorings

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

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

$$a_3 = \begin{pmatrix}-13.2117u^{36}+22.8294u^{35}+\cdots-51.4266u-5.68643\\9.64844u^{36}-19.9282u^{35}+\cdots+24.5522u-1.31023\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}-3.56329u^{36}+2.90115u^{35}+\cdots-26.8744u-6.99666\\9.64844u^{36}-19.9282u^{35}+\cdots+24.5522u-1.31023\end{pmatrix}$$

$$a_8 = \begin{pmatrix}19.1799u^{36}-35.4981u^{35}+\cdots+60.9662u+5.42398\\-6.74584u^{36}+15.9390u^{35}+\cdots-5.86285u+2.68433\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-17.3058u^{36}+34.6487u^{35}+\cdots-41.7469u+0.347274\\1.84255u^{36}-8.92859u^{35}+\cdots-25.2197u-7.89077\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}14.2880u^{36}-42.1875u^{35}+\cdots-93.3907u-40.4480\\2.49478u^{36}+6.71053u^{35}+\cdots+101.225u+30.7885\end{pmatrix}$$

$$a_9 = \begin{pmatrix}-14.1097u^{36}+43.3499u^{35}+\cdots+100.678u+44.3118\\-3.45784u^{36}-7.32685u^{35}+\cdots-124.470u-34.4750\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-18.9127u^{36}+35.8283u^{35}+\cdots-63.3892u-4.26487\\3.51876u^{36}-10.7539u^{35}+\cdots-11.2868u-5.31278\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-16.9025u^{36}+38.5063u^{35}+\cdots+14.7456u+15.8298\\-5.28954u^{36}+5.11532u^{35}+\cdots-35.7792u-6.93395\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{432716604269815519797 1534}{9651968197363122181 7333}u^{36}+\frac{704150376904954223871 1757}{9651968197363122181 7333}u^{35}+\cdots-\frac{257648319980938704454 36137}{9651968197363122181 7333}u-\frac{356865056241430589851 1193}{9651968197363122181 7333}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} - 3u^{36} + \cdots + 2u - 1$
c_2	$u^{37} - 15u^{36} + \cdots + 122u - 11$
c_3	$u^{37} - u^{36} + \cdots - 3u - 1$
c_4	$u^{37} + 7u^{35} + \cdots + 6u - 1$
c_5	$u^{37} + 15u^{36} + \cdots + 122u + 11$
c_6	$u^{37} - 2u^{36} + \cdots + 3u + 1$
c_7	$u^{37} - 7u^{36} + \cdots - 23u + 11$
c_8, c_9	$u^{37} - 3u^{36} + \cdots - 3u + 1$
c_{10}	$u^{37} + 2u^{36} + \cdots + 3u - 1$
c_{11}	$u^{37} - 8u^{35} + \cdots + 113u + 11$
c_{12}	$u^{37} + 3u^{36} + \cdots - 3u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} - 7y^{36} + \cdots - 6y - 1$
c_2, c_5	$y^{37} + 19y^{36} + \cdots - 1968y - 121$
c_3	$y^{37} + 31y^{36} + \cdots - 13y - 1$
c_4	$y^{37} + 14y^{36} + \cdots + 32y - 1$
c_6, c_{10}	$y^{37} + 20y^{36} + \cdots - 11y - 1$
c_7	$y^{37} - 21y^{36} + \cdots - 131y - 121$
c_8, c_9, c_{12}	$y^{37} - 39y^{36} + \cdots + 13y - 1$
c_{11}	$y^{37} - 16y^{36} + \cdots + 7951y - 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.228269+0.972015I$ $a=-0.312517+0.293728I$ $b=-1.273360+0.251375I$	$-3.63313-0.89930I$	$5.53992+6.04664I$
$u=-0.228269-0.972015I$ $a=-0.312517-0.293728I$ $b=-1.273360-0.251375I$	$-3.63313+0.89930I$	$5.53992-6.04664I$
$u=\ \ 0.287893+0.968457I$ $a=-0.060595-0.342713I$ $b=-1.45473-0.53345I$	$0.588458-0.123251I$	$7.13012-5.25813I$
$u=\ \ 0.287893-0.968457I$ $a=-0.060595+0.342713I$ $b=-1.45473+0.53345I$	$0.588458+0.123251I$	$7.13012+5.25813I$
$u=-1.031340+0.044232I$ $a=\ \ 0.192006-1.264000I$ $b=-0.265315+1.094270I$	$3.26821+1.90573I$	$7.36980-1.60523I$
$u=-1.031340-0.044232I$ $a=\ \ 0.192006+1.264000I$ $b=-0.265315-1.094270I$	$3.26821-1.90573I$	$7.36980+1.60523I$
$u=-0.874710+0.590451I$ $a=\ \ 0.67042-1.71902I$ $b=-0.090125+0.720042I$	$1.61545-0.08236I$	$7.43055-4.31546I$
$u=-0.874710-0.590451I$ $a=\ \ 0.67042+1.71902I$ $b=-0.090125-0.720042I$	$1.61545+0.08236I$	$7.43055+4.31546I$
$u=\ \ 0.252798+0.884161I$ $a=-0.533573-0.538051I$ $b=-1.367950+0.095533I$	$0.93519+2.40188I$	$7.76863-6.15289I$
$u=\ \ 0.252798-0.884161I$ $a=-0.533573+0.538051I$ $b=-1.367950-0.095533I$	$0.93519-2.40188I$	$7.76863+6.15289I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.349386 + 0.741107I$ $a = 2.71835 + 1.41552I$ $b = 0.176109 - 0.722893I$	$0.38143 + 3.90532I$	$3.52562 - 9.73284I$
$u = 0.349386 - 0.741107I$ $a = 2.71835 - 1.41552I$ $b = 0.176109 + 0.722893I$	$0.38143 - 3.90532I$	$3.52562 + 9.73284I$
$u = 0.504590 + 1.139670I$ $a = -0.826244 - 1.132200I$ $b = -0.76922 + 1.35116I$	$3.55732 + 7.62088I$	$4.76855 - 5.78854I$
$u = 0.504590 - 1.139670I$ $a = -0.826244 + 1.132200I$ $b = -0.76922 - 1.35116I$	$3.55732 - 7.62088I$	$4.76855 + 5.78854I$
$u = -0.191270 + 0.723197I$ $a = 3.48718 - 1.35344I$ $b = 0.372061 + 0.818530I$	$6.95975 - 7.51210I$	$4.20294 + 9.63619I$
$u = -0.191270 - 0.723197I$ $a = 3.48718 + 1.35344I$ $b = 0.372061 - 0.818530I$	$6.95975 + 7.51210I$	$4.20294 - 9.63619I$
$u = -0.180345 + 1.264300I$ $a = -0.387275 - 0.073167I$ $b = -0.637391 + 0.389419I$	$-3.70426 - 1.84766I$	$-4.53622 + 0.I$
$u = -0.180345 - 1.264300I$ $a = -0.387275 + 0.073167I$ $b = -0.637391 - 0.389419I$	$-3.70426 + 1.84766I$	$-4.53622 + 0.I$
$u = 0.478697 + 0.510660I$ $a = 0.688966 + 0.889393I$ $b = -0.45698 - 1.35011I$	$5.71669 - 3.59980I$	$7.13623 + 0.63245I$
$u = 0.478697 - 0.510660I$ $a = 0.688966 - 0.889393I$ $b = -0.45698 + 1.35011I$	$5.71669 + 3.59980I$	$7.13623 - 0.63245I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.538875+1.194820I$ $a=-0.86428+1.12401I$ $b=-0.602036-1.255360I$	$-0.21013-7.03477I$	0
$u=-0.538875-1.194820I$ $a=-0.86428-1.12401I$ $b=-0.602036+1.255360I$	$-0.21013+7.03477I$	0
$u=\ \ 0.501657+1.227510I$ $a=-0.87595-1.24896I$ $b=-0.318545+1.299050I$	$6.75947+7.54157I$	0
$u=\ \ 0.501657-1.227510I$ $a=-0.87595+1.24896I$ $b=-0.318545-1.299050I$	$6.75947-7.54157I$	0
$u=\ \ 0.071334+0.630120I$ $a=\ \ 1.81498+1.52115I$ $b=\ \ 0.03753-1.47901I$	$10.04490-5.12848I$	$6.58278+5.07152I$
$u=\ \ 0.071334-0.630120I$ $a=\ \ 1.81498-1.52115I$ $b=\ \ 0.03753+1.47901I$	$10.04490+5.12848I$	$6.58278-5.07152I$
$u=-0.062660+1.390740I$ $a=-0.775777+0.186352I$ $b=-0.169689+0.735196I$	$-3.04268-2.20819I$	0
$u=-0.062660-1.390740I$ $a=-0.775777-0.186352I$ $b=-0.169689-0.735196I$	$-3.04268+2.20819I$	0
$u=-0.25822+1.39168I$ $a=-1.31365+0.69602I$ $b=-0.302359-0.958218I$	$-2.05555-4.68016I$	0
$u=-0.25822-1.39168I$ $a=-1.31365-0.69602I$ $b=-0.302359+0.958218I$	$-2.05555+4.68016I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.17024 + 1.47875I$ $a = -0.225405 + 0.017552I$ $b = \ 0.087635 - 0.688908I$	$3.46280 + 6.68402I$	0
$u = \ 0.17024 - 1.47875I$ $a = -0.225405 - 0.017552I$ $b = \ 0.087635 + 0.688908I$	$3.46280 - 6.68402I$	0
$u = -0.005091 + 0.479638I$ $a = \ 1.15729 - 1.65554I$ $b = -0.121496 + 1.371280I$	$3.60849 + 3.40020I$	$-0.43408 - 10.19463I$
$u = -0.005091 - 0.479638I$ $a = \ 1.15729 + 1.65554I$ $b = -0.121496 - 1.371280I$	$3.60849 - 3.40020I$	$-0.43408 + 10.19463I$
$u = -0.245280$ $a = -3.32195$ $b = -0.455606$	0.424676	-4.93760
$u = \ 1.87682 + 0.19337I$ $a = \ 0.107045 + 1.194810I$ $b = -0.116346 - 0.979250I$	$11.59340 - 0.47661I$	0
$u = \ 1.87682 - 0.19337I$ $a = \ 0.107045 - 1.194810I$ $b = -0.116346 + 0.979250I$	$11.59340 + 0.47661I$	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{37}-3u^{36}+\cdots+2u-1)(u^{148}-10u^{147}+\cdots+297636u+230161)$
c_2	$(u^{37}-15u^{36}+\cdots+122u-11)(u^{148}+8u^{147}+\cdots+10382u-651)$
c_3	$(u^{37}-u^{36}+\cdots-3u-1)(u^{148}-2u^{147}+\cdots-127745u-3703)$
c_4	$(u^{37}+7u^{35}+\cdots+6u-1)(u^{148}-u^{147}+\cdots-634458u+118991)$
c_5	$(u^{37}+15u^{36}+\cdots+122u+11)(u^{148}+8u^{147}+\cdots+10382u-651)$
c_6	$(u^{37}-2u^{36}+\cdots+3u+1)(u^{148}+u^{147}+\cdots-6495u+1721)$
c_7	$(u^{37}-7u^{36}+\cdots-23u+11)(u^{148}+8u^{147}+\cdots+435567u-34657)$
c_8, c_9	$(u^{37}-3u^{36}+\cdots-3u+1)(u^{148}-4u^{147}+\cdots+u-3)$
c_{10}	$(u^{37}+2u^{36}+\cdots+3u-1)(u^{148}+u^{147}+\cdots-6495u+1721)$
c_{11}	$(u^{37}-8u^{35}+\cdots+113u+11)$ $\cdot(u^{148}+u^{147}+\cdots-5763627u+246787)$
c_{12}	$(u^{37}+3u^{36}+\cdots-3u-1)(u^{148}-4u^{147}+\cdots+u-3)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{37} - 7y^{36} + \cdots - 6y - 1)$ $\cdot (y^{148} + 32y^{147} + \cdots - 198487685030y + 52974085921)$
c_2, c_5	$(y^{37} + 19y^{36} + \cdots - 1968y - 121)$ $\cdot (y^{148} + 82y^{147} + \cdots - 3620716y + 423801)$
c_3	$(y^{37} + 31y^{36} + \cdots - 13y - 1)$ $\cdot (y^{148} + 46y^{147} + \cdots - 8748186675y + 13712209)$
c_4	$(y^{37} + 14y^{36} + \cdots + 32y - 1)$ $\cdot (y^{148} - 23y^{147} + \cdots - 475017227648y + 14158858081)$
c_6, c_{10}	$(y^{37} + 20y^{36} + \cdots - 11y - 1)$ $\cdot (y^{148} + 79y^{147} + \cdots + 91860223y + 2961841)$
c_7	$(y^{37} - 21y^{36} + \cdots - 131y - 121)$ $\cdot (y^{148} - 2y^{147} + \cdots + 94156598255y + 1201107649)$
c_8, c_9, c_{12}	$(y^{37} - 39y^{36} + \cdots + 13y - 1)(y^{148} - 148y^{147} + \cdots + 59y + 9)$
c_{11}	$(y^{37} - 16y^{36} + \cdots + 7951y - 121)$ $\cdot (y^{148} - 17y^{147} + \cdots - 5010577456011y + 60903823369)$