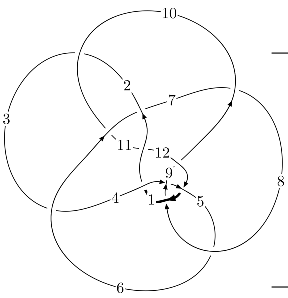
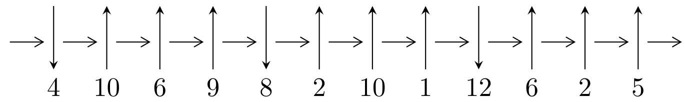
$12n_{0839}$ ($K12n_{0839}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle b-u,\ a-1,\ u^9-5u^8+12u^7-16u^6+13u^5-6u^4+2u^3-u^2+2u-1\rangle$$
$$I_2^u = \langle b+u,\ a+1,\ u^9-3u^8+4u^7-2u^6+u^5-2u^4+2u^3-u^2-1\rangle$$
$$I_3^u = \langle b-u,\ 4u^{17}+8u^{16}+\cdots+2a-5,\ u^{18}+5u^{17}+\cdots+5u+1\rangle$$
$$I_4^u = \langle -12u^{17}-44u^{16}+\cdots+2b-4,\ a-1,\ u^{18}+5u^{17}+\cdots+5u+1\rangle$$
$$I_5^u = \langle -582u^{17}+8001u^{16}+\cdots+6236b+10944,\ -342u^{17}+5232u^{16}+\cdots+6236a-30,$$
$$u^{18}-17u^{17}+\cdots-176u+32\rangle$$
$$I_6^u = \langle b+u,\ -2u^7-5u^6-8u^5-9u^4-10u^3-7u^2+a-7u-3,$$
$$u^8+3u^7+5u^6+6u^5+7u^4+6u^3+5u^2+3u+1\rangle$$
$$I_7^u = \langle u^7+2u^6+3u^5+4u^4+5u^3+3u^2+b+3u+2,\ a+1,\ u^8+3u^7+5u^6+6u^5+7u^4+6u^3+5u^2+3u+1\rangle$$
$$I_8^u = \langle -au+b,\ -u^3+a^2+au+4u^2-2a-6u+4,\ u^4-3u^3+3u^2-u-1\rangle$$
$$I_9^u = \langle -14u^{14}-57u^{13}+\cdots+4b-4,\ 4u^{14}a-24u^{14}+\cdots+5a-25,$$
$$u^{15}+5u^{14}+11u^{13}+10u^{12}-9u^{11}-36u^{10}-42u^9-10u^8+31u^7+50u^6+38u^5+7u^4-11u^3-6u^2+u+$$

* 9 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. $I_1^u = \langle b - u,\ a - 1,\ u^9 - 5u^8 + \cdots + 2u - 1\rangle$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} u^2 - u + 1 \\ u^4 - u^3 + u \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u^2 + u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} u^3 - u^2 + 1 \\ u^4 - 2u^3 + u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -u^8 + 3u^7 - 4u^6 + u^5 + 2u^4 - 2u^3 + 1 \\ -u^8 + 5u^7 - 10u^6 + 11u^5 - 6u^4 + 2u^3 + 2u - 1 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u + 1 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u^3 + 2u^2 - u \\ u^3 - u^2 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u^8 - 4u^7 + 7u^6 - 6u^5 + 2u^4 - u \\ -u^8 + 3u^7 - 5u^6 + 4u^5 - 2u^4 - u^2 + u \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -u^7 + 3u^6 - 5u^5 + 4u^4 - 2u^3 - u + 1 \\ -2u^8 + 8u^7 - 15u^6 + 15u^5 - 8u^4 + 2u^3 - u^2 + 3u - 1 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 3u^8 - 15u^7 + 36u^6 - 45u^5 + 33u^4 - 15u^3 + 9u^2 - 3u + 12$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_9	$u^9 - 4u^8 + 10u^7 - 15u^6 + 16u^5 - 14u^4 + 12u^3 - 10u^2 + 6u - 1$
c_2, c_6, c_{10}	$u^9 - 7u^8 + 18u^7 - 19u^6 + 4u^5 + 5u^4 - 2u^3 - u^2 + 3u - 1$
c_3, c_7, c_{11}	$u^9 + 6u^8 + 15u^7 + 16u^6 + 2u^5 - 9u^4 - 2u^3 + 6u^2 + 3u - 1$
c_4, c_8, c_{12}	$u^9 - 5u^8 + 12u^7 - 16u^6 + 13u^5 - 6u^4 + 2u^3 - u^2 + 2u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_9	$y^9 + 4y^8 + 12y^7 + 7y^6 + 8y^5 + 26y^3 + 16y^2 + 16y - 1$
c_2, c_6, c_{10}	$y^9 - 13y^8 + 66y^7 - 151y^6 + 126y^5 + 15y^4 - 3y^2 + 7y - 1$
c_3, c_7, c_{11}	$y^9 - 6y^8 + 37y^7 - 92y^6 + 166y^5 - 179y^4 + 156y^3 - 66y^2 + 21y - 1$
c_4, c_8, c_{12}	$y^9 - y^8 + 10y^7 + 19y^5 + 22y^4 + 12y^3 - 5y^2 + 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.286198 + 0.902700I$ $a = 1.00000$ $b = 0.286198 + 0.902700I$	$3.22071 - 2.28420I$	$3.39173 + 1.61517I$
$u = 0.286198 - 0.902700I$ $a = 1.00000$ $b = 0.286198 - 0.902700I$	$3.22071 + 2.28420I$	$3.39173 - 1.61517I$
$u = -0.447949 + 0.409095I$ $a = 1.00000$ $b = -0.447949 + 0.409095I$	$0.58147 + 2.13776I$	$3.86167 - 3.88522I$
$u = -0.447949 - 0.409095I$ $a = 1.00000$ $b = -0.447949 - 0.409095I$	$0.58147 - 2.13776I$	$3.86167 + 3.88522I$
$u = 1.128820 + 0.825655I$ $a = 1.00000$ $b = 1.128820 + 0.825655I$	$4.45533 + 4.10271I$	$9.59034 - 1.40424I$
$u = 1.128820 - 0.825655I$ $a = 1.00000$ $b = 1.128820 - 0.825655I$	$4.45533 - 4.10271I$	$9.59034 + 1.40424I$
$u = 0.587597$ $a = 1.00000$ $b = 0.587597$	0.838784	12.2450
$u = 1.23914 + 1.04927I$ $a = 1.00000$ $b = 1.23914 + 1.04927I$	$12.7072 + 17.7651I$	$10.03383 - 8.20740I$
$u = 1.23914 - 1.04927I$ $a = 1.00000$ $b = 1.23914 - 1.04927I$	$12.7072 - 17.7651I$	$10.03383 + 8.20740I$

II. $\boldsymbol{I_2^u = \langle b+u,\ a+1,\ u^9 - 3u^8 + 4u^7 - 2u^6 + u^5 - 2u^4 + 2u^3 - u^2 - 1\rangle}$

(i) Arc colorings

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

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

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

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

$$a_2 = \begin{pmatrix} -u^2 + u - 1 \\ -u^4 + u^3 - u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ -u^2 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^3 - u^2 + 1 \\ u^4 - 2u^3 + u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^8 + 3u^7 - 4u^6 + u^5 + 2u^4 - 2u^3 + 1 \\ u^8 - 3u^7 + 4u^6 - u^5 - 2u^4 + 2u^3 - 1 \end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix} -u^3 + 2u^2 - u \\ u^3 - u^2 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^8 - 4u^7 + 7u^6 - 6u^5 + 2u^4 - u \\ -u^8 + 3u^7 - 5u^6 + 4u^5 - 2u^4 - u^2 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^7 - 3u^6 + 5u^5 - 4u^4 + 2u^3 + u - 1 \\ u^6 - 3u^5 + 4u^4 - 2u^3 + u^2 - u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -3u^8 + 15u^7 - 24u^6 + 15u^5 + 3u^4 + 3u^3 - 9u^2 + 3u + 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_9	$u^9 - 2u^8 + 4u^7 - 5u^6 + 8u^5 - 10u^4 + 8u^3 - 6u^2 + 2u + 1$
c_2, c_6, c_{10}	$u^9 + 5u^8 + 8u^7 + 5u^6 + 4u^5 + 3u^4 + 3u^2 - u + 1$
c_3, c_7, c_{11}	$u^9 + 4u^8 + 5u^7 - 2u^5 + u^4 + 4u^2 + u + 5$
c_4, c_8, c_{12}	$u^9 - 3u^8 + 4u^7 - 2u^6 + u^5 - 2u^4 + 2u^3 - u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_9	$y^9 + 4y^8 + 12y^7 + 15y^6 + 8y^5 - 12y^4 - 14y^3 + 16y^2 + 16y - 1$
c_2, c_6, c_{10}	$y^9 - 9y^8 + 22y^7 + 9y^6 - 46y^5 - 65y^4 - 36y^3 - 15y^2 - 5y - 1$
c_3, c_7, c_{11}	$y^9 - 6y^8 + 21y^7 - 28y^6 - 26y^5 - 31y^4 - 12y^3 - 26y^2 - 39y - 25$
c_4, c_8, c_{12}	$y^9 - y^8 + 6y^7 - 4y^6 + 3y^5 - 10y^4 - 4y^3 - 5y^2 - 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.640457 + 0.839014I$ $a = -1.00000$ $b = -0.640457 - 0.839014I$	$-3.41503 + 2.80054I$	$-2.62634 - 4.93597I$
$u = 0.640457 - 0.839014I$ $a = -1.00000$ $b = -0.640457 + 0.839014I$	$-3.41503 - 2.80054I$	$-2.62634 + 4.93597I$
$u = -0.611257 + 0.526811I$ $a = -1.00000$ $b = 0.611257 - 0.526811I$	$10.77880 + 7.66911I$	$9.14267 - 3.23917I$
$u = -0.611257 - 0.526811I$ $a = -1.00000$ $b = 0.611257 + 0.526811I$	$10.77880 - 7.66911I$	$9.14267 + 3.23917I$
$u = 1.20234$ $a = -1.00000$ $b = -1.20234$	11.2685	14.6480
$u = -0.274779 + 0.650965I$ $a = -1.00000$ $b = 0.274779 - 0.650965I$	$1.42494 - 3.44509I$	$5.30781 + 7.71847I$
$u = -0.274779 - 0.650965I$ $a = -1.00000$ $b = 0.274779 + 0.650965I$	$1.42494 + 3.44509I$	$5.30781 - 7.71847I$
$u = 1.14441 + 0.99327I$ $a = -1.00000$ $b = -1.14441 - 0.99327I$	$2.02642 + 11.00000I$	$4.85190 - 8.60523I$
$u = 1.14441 - 0.99327I$ $a = -1.00000$ $b = -1.14441 + 0.99327I$	$2.02642 - 11.00000I$	$4.85190 + 8.60523I$

III. $\boldsymbol{I_3^u = \langle b - u,\ 4u^{17} + 8u^{16} + \cdots + 2a - 5,\ u^{18} + 5u^{17} + \cdots + 5u + 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} -2u^{17} - 4u^{16} + \cdots + 8u + \frac{5}{2} \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -10u^{17} - 36u^{16} + \cdots - 21u - \frac{7}{2} \\ -\frac{13}{2}u^{17} - 28u^{16} + \cdots - 31u - 8 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -3u^{17} - 31u^{16} + \cdots - 98u - 36 \\ 8u^{17} + 32u^{16} + \cdots + 29u + 6 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{2}u^{17} - \frac{21}{2}u^{16} + \cdots - \frac{75}{2}u - \frac{37}{2} \\ \frac{11}{2}u^{17} + 24u^{16} + \cdots + \frac{57}{2}u + \frac{13}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -10.5000u^{17} - 46.5000u^{16} + \cdots - 59.5000u - 21.5000 \\ 6u^{17} + 25u^{16} + \cdots + \frac{57}{2}u + \frac{15}{2} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -2u^{17} - 4u^{16} + \cdots + 7u + \frac{5}{2} \\ u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -19u^{17} - 95u^{16} + \cdots - 154u - 48 \\ 8u^{17} + 32u^{16} + \cdots + 29u + 6 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{77}{2}u^{17} - \frac{327}{2}u^{16} + \cdots - 181u - \frac{85}{2} \\ -\frac{27}{2}u^{17} - \frac{121}{2}u^{16} + \cdots - 78u - \frac{43}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 48u^{17} + \frac{413}{2}u^{16} + \cdots + 234u + 60 \\ 7u^{17} + \frac{65}{2}u^{16} + \cdots + \frac{91}{2}u + 13 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 37u^{17} + 174u^{16} + 393u^{15} + 512u^{14} + 582u^{13} + 849u^{12} + 1180u^{11} + 897u^{10} + 226u^9 - 106u^8 - 125u^7 - 507u^6 - 919u^5 - 725u^4 - 89u^3 + 317u^2 + 285u + 100$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{18} + 2u^{17} + \cdots + 11u + 7$
c_2, c_{10}	$u^{18} + 6u^{17} + \cdots + 2u + 1$
c_3	$u^{18} + 18u^{17} + \cdots + 5632u + 1024$
c_4, c_{12}	$u^{18} + 5u^{17} + \cdots + 5u + 1$
c_6	$u^{18} - 12u^{17} + \cdots - 1552u + 352$
c_7, c_{11}	$u^{18} - 7u^{17} + \cdots - 40u + 7$
c_8	$u^{18} - 17u^{17} + \cdots - 176u + 32$
c_9	$u^{18} - 16u^{17} + \cdots - 240u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{18} + 10y^{17} + \cdots + 313y + 49$
c_2, c_{10}	$y^{18} - 30y^{17} + \cdots - 8y + 1$
c_3	$y^{18} - 10y^{17} + \cdots + 1572864y + 1048576$
c_4, c_{12}	$y^{18} - y^{17} + \cdots - 5y + 1$
c_6	$y^{18} - 12y^{17} + \cdots + 401664y + 123904$
c_7, c_{11}	$y^{18} - 15y^{17} + \cdots - 634y + 49$
c_8	$y^{18} - 7y^{17} + \cdots - 1792y + 1024$
c_9	$y^{18} + 2y^{17} + \cdots + 15616y + 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.768042 + 0.719269I$ $a = -0.875237 + 0.270339I$ $b = -0.768042 + 0.719269I$	$-2.27200 - 2.57043I$	$6.54941 + 3.50069I$
$u = -0.768042 - 0.719269I$ $a = -0.875237 - 0.270339I$ $b = -0.768042 - 0.719269I$	$-2.27200 + 2.57043I$	$6.54941 - 3.50069I$
$u = 0.535137 + 0.962955I$ $a = 1.40580 - 0.92249I$ $b = 0.535137 + 0.962955I$	$7.73898 + 8.44090I$	$7.63933 - 9.24995I$
$u = 0.535137 - 0.962955I$ $a = 1.40580 + 0.92249I$ $b = 0.535137 - 0.962955I$	$7.73898 - 8.44090I$	$7.63933 + 9.24995I$
$u = 0.782103 + 0.053724I$ $a = 1.91617 + 1.26164I$ $b = 0.782103 + 0.053724I$	$3.58305 - 1.24938I$	$17.0632 + 1.0174I$
$u = 0.782103 - 0.053724I$ $a = 1.91617 - 1.26164I$ $b = 0.782103 - 0.053724I$	$3.58305 + 1.24938I$	$17.0632 - 1.0174I$
$u = -0.262844 + 0.715699I$ $a = 0.165375 + 0.643986I$ $b = -0.262844 + 0.715699I$	$0.72242 + 2.18469I$	$2.93233 - 4.07670I$
$u = -0.262844 - 0.715699I$ $a = 0.165375 - 0.643986I$ $b = -0.262844 - 0.715699I$	$0.72242 - 2.18469I$	$2.93233 + 4.07670I$
$u = 0.777809 + 0.987076I$ $a = 0.288479 + 0.024311I$ $b = 0.777809 + 0.987076I$	$5.99338 + 3.58170I$	$6.02957 - 2.59118I$
$u = 0.777809 - 0.987076I$ $a = 0.288479 - 0.024311I$ $b = 0.777809 - 0.987076I$	$5.99338 - 3.58170I$	$6.02957 + 2.59118I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.695734 + 0.191789I$ $a = -1.21725 - 2.62700I$ $b = -0.695734 + 0.191789I$	$11.7749 - 8.5337I$	$15.3206 + 8.5140I$
$u = -0.695734 - 0.191789I$ $a = -1.21725 + 2.62700I$ $b = -0.695734 - 0.191789I$	$11.7749 + 8.5337I$	$15.3206 - 8.5140I$
$u = -0.594298 + 0.360810I$ $a = -2.76005 + 0.70415I$ $b = -0.594298 + 0.360810I$	$2.40603 - 4.20864I$	$12.3347 + 11.0008I$
$u = -0.594298 - 0.360810I$ $a = -2.76005 - 0.70415I$ $b = -0.594298 - 0.360810I$	$2.40603 + 4.20864I$	$12.3347 - 11.0008I$
$u = -1.18514 + 0.90997I$ $a = -1.051240 + 0.105286I$ $b = -1.18514 + 0.90997I$	$3.54942 - 10.06710I$	$10.59088 + 5.55087I$
$u = -1.18514 - 0.90997I$ $a = -1.051240 - 0.105286I$ $b = -1.18514 - 0.90997I$	$3.54942 + 10.06710I$	$10.59088 - 5.55087I$
$u = -1.08899 + 1.07733I$ $a = -0.872048 - 0.388084I$ $b = -1.08899 + 1.07733I$	$10.91700 - 4.65632I$	$14.5399 + 2.8811I$
$u = -1.08899 - 1.07733I$ $a = -0.872048 + 0.388084I$ $b = -1.08899 - 1.07733I$	$10.91700 + 4.65632I$	$14.5399 - 2.8811I$

IV. $\boldsymbol{I_4^u = \langle -12u^{17} - 44u^{16} + \cdots + 2b - 4,\ a - 1,\ u^{18} + 5u^{17} + \cdots + 5u + 1 \rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 1 \\ 6u^{17} + 22u^{16} + \cdots + \frac{25}{2}u + 2 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -6u^{17} - 22u^{16} + \cdots - \frac{25}{2}u - 1 \\ -2u^{17} - \frac{23}{2}u^{16} + \cdots - \frac{43}{2}u - 6 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u \\ 8u^{17} + 32u^{16} + \cdots + 29u + 6 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 8u^{17} + \frac{67}{2}u^{16} + \cdots + 34u + 9 \\ \frac{11}{2}u^{17} + 24u^{16} + \cdots + \frac{57}{2}u + \frac{13}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -13u^{17} - 58u^{16} + \cdots - 72u - \frac{39}{2} \\ -\frac{25}{2}u^{17} - 54u^{16} + \cdots - 65u - 17 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -6u^{17} - 22u^{16} + \cdots - \frac{25}{2}u - 1 \\ 6u^{17} + 22u^{16} + \cdots + \frac{25}{2}u + 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} \frac{13}{2}u^{17} + 27u^{16} + \cdots + 26u + 4 \\ -\frac{29}{2}u^{17} - 59u^{16} + \cdots - 54u - 10 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} \frac{15}{2}u^{17} + \frac{63}{2}u^{16} + \cdots + 38u + 9 \\ -24u^{17} - 105u^{16} + \cdots - \frac{255}{2}u - \frac{65}{2} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{43}{2}u^{17} + 94u^{16} + \cdots + 112u + \frac{59}{2} \\ -\frac{11}{2}u^{17} - 24u^{16} + \cdots - 28u - 7 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 37u^{17} + 174u^{16} + 393u^{15} + 512u^{14} + 582u^{13} + 849u^{12} + 1180u^{11} + 897u^{10} + 226u^9 - 106u^8 - 125u^7 - 507u^6 - 919u^5 - 725u^4 - 89u^3 + 317u^2 + 285u + 100$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{18} - 16u^{17} + \cdots - 240u + 32$
c_2, c_6	$u^{18} + 6u^{17} + \cdots + 2u + 1$
c_3, c_{11}	$u^{18} - 7u^{17} + \cdots - 40u + 7$
c_4, c_8	$u^{18} + 5u^{17} + \cdots + 5u + 1$
c_5, c_9	$u^{18} + 2u^{17} + \cdots + 11u + 7$
c_7	$u^{18} + 18u^{17} + \cdots + 5632u + 1024$
c_{10}	$u^{18} - 12u^{17} + \cdots - 1552u + 352$
c_{12}	$u^{18} - 17u^{17} + \cdots - 176u + 32$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{18} + 2y^{17} + \cdots + 15616y + 1024$
c_2, c_6	$y^{18} - 30y^{17} + \cdots - 8y + 1$
c_3, c_{11}	$y^{18} - 15y^{17} + \cdots - 634y + 49$
c_4, c_8	$y^{18} - y^{17} + \cdots - 5y + 1$
c_5, c_9	$y^{18} + 10y^{17} + \cdots + 313y + 49$
c_7	$y^{18} - 10y^{17} + \cdots + 1572864y + 1048576$
c_{10}	$y^{18} - 12y^{17} + \cdots + 401664y + 123904$
c_{12}	$y^{18} - 7y^{17} + \cdots - 1792y + 1024$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.768042 + 0.719269I$ $a = 1.00000$ $b = 0.477772 - 0.837163I$	$-2.27200 - 2.57043I$	$6.54941 + 3.50069I$
$u = -0.768042 - 0.719269I$ $a = 1.00000$ $b = 0.477772 + 0.837163I$	$-2.27200 + 2.57043I$	$6.54941 - 3.50069I$
$u = 0.535137 + 0.962955I$ $a = 1.00000$ $b = 1.64061 + 0.86007I$	$7.73898 + 8.44090I$	$7.63933 - 9.24995I$
$u = 0.535137 - 0.962955I$ $a = 1.00000$ $b = 1.64061 - 0.86007I$	$7.73898 - 8.44090I$	$7.63933 + 9.24995I$
$u = 0.782103 + 0.053724I$ $a = 1.00000$ $b = 1.43086 + 1.08968I$	$3.58305 - 1.24938I$	$17.0632 + 1.0174I$
$u = 0.782103 - 0.053724I$ $a = 1.00000$ $b = 1.43086 - 1.08968I$	$3.58305 + 1.24938I$	$17.0632 - 1.0174I$
$u = -0.262844 + 0.715699I$ $a = 1.00000$ $b = -0.504368 - 0.050909I$	$0.72242 + 2.18469I$	$2.93233 - 4.07670I$
$u = -0.262844 - 0.715699I$ $a = 1.00000$ $b = -0.504368 + 0.050909I$	$0.72242 - 2.18469I$	$2.93233 + 4.07670I$
$u = 0.777809 + 0.987076I$ $a = 1.00000$ $b = 0.200384 + 0.303660I$	$5.99338 + 3.58170I$	$6.02957 - 2.59118I$
$u = 0.777809 - 0.987076I$ $a = 1.00000$ $b = 0.200384 - 0.303660I$	$5.99338 - 3.58170I$	$6.02957 + 2.59118I$

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.695734+0.191789I$ $a=\ 1.00000$ $b=\ 1.35071+1.59423I$	$11.7749-8.5337I$	$15.3206+8.5140I$
$u=-0.695734-0.191789I$ $a=\ 1.00000$ $b=\ 1.35071-1.59423I$	$11.7749+8.5337I$	$15.3206-8.5140I$
$u=-0.594298+0.360810I$ $a=\ 1.00000$ $b=\ 1.38623-1.41433I$	$2.40603-4.20864I$	$12.3347+11.0008I$
$u=-0.594298-0.360810I$ $a=\ 1.00000$ $b=\ 1.38623+1.41433I$	$2.40603+4.20864I$	$12.3347-11.0008I$
$u=-1.18514+0.90997I$ $a=\ 1.00000$ $b=\ 1.15005-1.08137I$	$3.54942-10.06710I$	$10.59088+5.55087I$
$u=-1.18514-0.90997I$ $a=\ 1.00000$ $b=\ 1.15005+1.08137I$	$3.54942+10.06710I$	$10.59088-5.55087I$
$u=-1.08899+1.07733I$ $a=\ 1.00000$ $b=\ 1.36775-0.51686I$	$10.91700-4.65632I$	$14.5399+2.8811I$
$u=-1.08899-1.07733I$ $a=\ 1.00000$ $b=\ 1.36775+0.51686I$	$10.91700+4.65632I$	$14.5399-2.8811I$

V. $\boldsymbol{I^u_5 = \langle -582u^{17} + 8001u^{16} + \cdots + 6236b + 10944,\ -342u^{17} + 5232u^{16} + \cdots + 6236a - 30,\ u^{18} - 17u^{17} + \cdots - 176u + 32\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 0.0548428u^{17} - 0.838999u^{16} + \cdots + 14.0253u + 0.00481078 \\ 0.0933291u^{17} - 1.28303u^{16} + \cdots + 9.65715u - 1.75497 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0.265074u^{17} - 4.05516u^{16} + \cdots + 19.0391u - 1.22675 \\ 0.381976u^{17} - 6.48829u^{16} + \cdots + 65.8958u - 13.2033 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.0831462u^{17} + 1.44524u^{16} + \cdots - 38.8754u + 6.77999 \\ 0.0317511u^{17} - 0.472579u^{16} + \cdots - 6.85375u + 2.66068 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0383659u^{17} - 0.560616u^{16} + \cdots + 2.67672u - 5.61835 \\ 0.158796u^{17} - 2.55320u^{16} + \cdots + 8.38294u - 2.24375 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0.377205u^{17} - 6.21685u^{16} + \cdots + 81.8435u - 10.5930 \\ 0.0953335u^{17} - 1.67335u^{16} + \cdots + 37.2421u - 9.11225 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -0.0384862u^{17} + 0.444035u^{16} + \cdots + 4.36818u + 1.75978 \\ 0.0933291u^{17} - 1.28303u^{16} + \cdots + 9.65715u - 1.75497 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.0794580u^{17} + 1.18706u^{16} + \cdots - 14.9190u + 0.442591 \\ -0.0354394u^{17} + 0.730757u^{16} + \cdots - 15.1026u + 3.67672 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0.121572u^{17} - 2.10381u^{16} + \cdots + 19.2797u - 3.21905 \\ -0.435014u^{17} + 6.63851u^{16} + \cdots - 28.5946u + 5.07697 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0.690186u^{17} - 10.8130u^{16} + \cdots + 61.6639u - 7.15876 \\ 0.967768u^{17} - 15.7437u^{16} + \cdots + 140.533u - 28.0949 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{741}{3118}u^{17} + \frac{7227}{1559}u^{16} + \cdots - \frac{161008}{1559}u + \frac{45958}{1559}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_9	$u^{18} + 2u^{17} + \cdots + 11u + 7$
c_2	$u^{18} - 12u^{17} + \cdots - 1552u + 352$
c_3, c_7	$u^{18} - 7u^{17} + \cdots - 40u + 7$
c_4	$u^{18} - 17u^{17} + \cdots - 176u + 32$
c_5	$u^{18} - 16u^{17} + \cdots - 240u + 32$
c_6, c_{10}	$u^{18} + 6u^{17} + \cdots + 2u + 1$
c_8, c_{12}	$u^{18} + 5u^{17} + \cdots + 5u + 1$
c_{11}	$u^{18} + 18u^{17} + \cdots + 5632u + 1024$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9	$y^{18} + 10y^{17} + \cdots + 313y + 49$
c_2	$y^{18} - 12y^{17} + \cdots + 401664y + 123904$
c_3, c_7	$y^{18} - 15y^{17} + \cdots - 634y + 49$
c_4	$y^{18} - 7y^{17} + \cdots - 1792y + 1024$
c_5	$y^{18} + 2y^{17} + \cdots + 15616y + 1024$
c_6, c_{10}	$y^{18} - 30y^{17} + \cdots - 8y + 1$
c_8, c_{12}	$y^{18} - y^{17} + \cdots - 5y + 1$
c_{11}	$y^{18} - 10y^{17} + \cdots + 1572864y + 1048576$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_5^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.477772 + 0.837163I$ $a = -1.043040 + 0.322168I$ $b = -0.768042 - 0.719269I$	$-2.27200 + 2.57043I$	$6.54941 - 3.50069I$
$u = 0.477772 - 0.837163I$ $a = -1.043040 - 0.322168I$ $b = -0.768042 + 0.719269I$	$-2.27200 - 2.57043I$	$6.54941 + 3.50069I$
$u = 1.36775 + 0.51686I$ $a = -0.957162 - 0.425962I$ $b = -1.08899 - 1.07733I$	$10.91700 + 4.65632I$	$14.5399 - 2.8811I$
$u = 1.36775 - 0.51686I$ $a = -0.957162 + 0.425962I$ $b = -1.08899 + 1.07733I$	$10.91700 - 4.65632I$	$14.5399 + 2.8811I$
$u = -0.504368 + 0.050909I$ $a = 0.37410 + 1.45676I$ $b = -0.262844 - 0.715699I$	$0.72242 - 2.18469I$	$2.93233 + 4.07670I$
$u = -0.504368 - 0.050909I$ $a = 0.37410 - 1.45676I$ $b = -0.262844 + 0.715699I$	$0.72242 + 2.18469I$	$2.93233 - 4.07670I$
$u = 1.15005 + 1.08137I$ $a = -0.941815 + 0.094327I$ $b = -1.18514 - 0.90997I$	$3.54942 + 10.06710I$	$10.59088 - 5.55087I$
$u = 1.15005 - 1.08137I$ $a = -0.941815 - 0.094327I$ $b = -1.18514 + 0.90997I$	$3.54942 - 10.06710I$	$10.59088 + 5.55087I$
$u = 0.200384 + 0.303660I$ $a = 3.44201 - 0.29007I$ $b = 0.777809 + 0.987076I$	$5.99338 + 3.58170I$	$6.02957 - 2.59118I$
$u = 0.200384 - 0.303660I$ $a = 3.44201 + 0.29007I$ $b = 0.777809 - 0.987076I$	$5.99338 - 3.58170I$	$6.02957 + 2.59118I$

Solutions to I_5^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.43086 + 1.08968I$ $a = 0.364052 - 0.239699I$ $b = 0.782103 + 0.053724I$	$3.58305 - 1.24938I$	$17.0632 + 1.0174I$
$u = 1.43086 - 1.08968I$ $a = 0.364052 + 0.239699I$ $b = 0.782103 - 0.053724I$	$3.58305 + 1.24938I$	$17.0632 - 1.0174I$
$u = 1.64061 + 0.86007I$ $a = 0.497231 + 0.326283I$ $b = 0.535137 + 0.962955I$	$7.73898 + 8.44090I$	$7.63933 - 9.24995I$
$u = 1.64061 - 0.86007I$ $a = 0.497231 - 0.326283I$ $b = 0.535137 - 0.962955I$	$7.73898 - 8.44090I$	$7.63933 + 9.24995I$
$u = 1.38623 + 1.41433I$ $a = -0.340171 + 0.086786I$ $b = -0.594298 - 0.360810I$	$2.40603 + 4.20864I$	$12.3347 - 11.0008I$
$u = 1.38623 - 1.41433I$ $a = -0.340171 - 0.086786I$ $b = -0.594298 + 0.360810I$	$2.40603 - 4.20864I$	$12.3347 + 11.0008I$
$u = 1.35071 + 1.59423I$ $a = -0.145208 + 0.313379I$ $b = -0.695734 + 0.191789I$	$11.7749 - 8.5337I$	$15.3206 + 8.5140I$
$u = 1.35071 - 1.59423I$ $a = -0.145208 - 0.313379I$ $b = -0.695734 - 0.191789I$	$11.7749 + 8.5337I$	$15.3206 - 8.5140I$

VI. $\boldsymbol{I_6^u = \langle b + u,\ -2u^7 - 5u^6 + \cdots + a - 3,\ u^8 + 3u^7 + \cdots + 3u + 1\rangle}$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} 2u^7 + 5u^6 + 8u^5 + 9u^4 + 10u^3 + 7u^2 + 7u + 3 \\ -u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 3u^7 + 7u^6 + 10u^5 + 11u^4 + 13u^3 + 9u^2 + 9u + 4 \\ u^6 + 2u^5 + 3u^4 + 3u^3 + 3u^2 + u + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^7 + 2u^6 + 4u^5 + 5u^4 + 5u^3 + 3u^2 + 5u + 1 \\ u^7 + 2u^6 + 2u^5 + 2u^4 + 3u^3 + 2u^2 + 2u + 1 \end{pmatrix}$$

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

$$a_3 = \begin{pmatrix} -4u^7 - 12u^6 - 16u^5 - 13u^4 - 15u^3 - 14u^2 - 7u \\ u^7 + 3u^6 + 4u^5 + 4u^4 + 4u^3 + 4u^2 + u \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2u^7 + 5u^6 + 8u^5 + 9u^4 + 10u^3 + 7u^2 + 8u + 3 \\ -u \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} -3u^7 - 8u^6 - 11u^5 - 10u^4 - 12u^3 - 9u^2 - 7u - 2 \\ -u^5 - 2u^4 - 2u^3 - 2u^2 - u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u^6 - u^5 - u^4 - 2u^3 - 3u^2 - 2 \\ u^7 + 2u^6 + 2u^5 + 2u^4 + 3u^3 + 2u^2 + 2u + 1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 15u^7 + 35u^6 + 47u^5 + 47u^4 + 60u^3 + 37u^2 + 32u + 19$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^8 + 2u^6 + u^5 + 4u^4 - u^3 + 4u^2 - u + 1$
c_2, c_{10}	$u^8 - 4u^7 + 8u^6 - 14u^5 + 19u^4 - 17u^3 + 11u^2 - 4u + 1$
c_3	$u^8 - 3u^7 - 2u^6 + 3u^5 + 22u^4 + 24u^3 + 18u^2 + 3u + 1$
c_4, c_{12}	$u^8 + 3u^7 + 5u^6 + 6u^5 + 7u^4 + 6u^3 + 5u^2 + 3u + 1$
c_6	$u^8 + 3u^7 + u^6 + 8u^4 + 6u^3 - 2u^2 - u + 1$
c_7, c_{11}	$u^8 + u^7 - 2u^6 - 5u^5 - u^4 + 6u^3 + 8u^2 + 4u + 1$
c_8	$(u^4 - 3u^3 + 3u^2 - u - 1)^2$
c_9	$u^8 - 7u^7 + 20u^6 - 37u^5 + 52u^4 - 48u^3 + 44u^2 - 19u + 11$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^8 + 4y^7 + 12y^6 + 23y^5 + 36y^4 + 37y^3 + 22y^2 + 7y + 1$
c_2, c_{10}	$y^8 - 10y^6 - 6y^5 + 31y^4 + 33y^3 + 23y^2 + 6y + 1$
c_3	$y^8 - 13y^7 + 66y^6 + 83y^5 + 288y^4 + 194y^3 + 224y^2 + 27y + 1$
c_4, c_{12}	$y^8 + y^7 + 3y^6 + 8y^5 + 11y^4 + 8y^3 + 3y^2 + y + 1$
c_6	$y^8 - 7y^7 + 17y^6 - 24y^5 + 68y^4 - 66y^3 + 32y^2 - 5y + 1$
c_7, c_{11}	$y^8 - 5y^7 + 12y^6 - 17y^5 + 23y^4 - 16y^3 + 14y^2 + 1$
c_8	$(y^4 - 3y^3 + y^2 - 7y + 1)^2$
c_9	$y^8 - 9y^7 - 14y^6 + 127y^5 + 668y^4 + 1306y^3 + 1256y^2 + 607y + 121$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_6^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.164478 + 0.986381I$ $a = 0.29921 + 1.79440I$ $b = 0.164478 - 0.986381I$	$-0.891430 + 0.808282I$	$4.38747 - 7.84089I$
$u = -0.164478 - 0.986381I$ $a = 0.29921 - 1.79440I$ $b = 0.164478 + 0.986381I$	$-0.891430 - 0.808282I$	$4.38747 + 7.84089I$
$u = 0.452583 + 0.891722I$ $a = 0.172107 - 0.339102I$ $b = -0.452583 - 0.891722I$	$1.13995 - 1.35977I$	$7.04382 - 3.05706I$
$u = 0.452583 - 0.891722I$ $a = 0.172107 + 0.339102I$ $b = -0.452583 + 0.891722I$	$1.13995 + 1.35977I$	$7.04382 + 3.05706I$
$u = -0.584796 + 0.379478I$ $a = 0.22519 + 1.70988I$ $b = 0.584796 - 0.379478I$	$1.15941 - 3.26530I$	$7.76010 + 9.86097I$
$u = -0.584796 - 0.379478I$ $a = 0.22519 - 1.70988I$ $b = 0.584796 + 0.379478I$	$1.15941 + 3.26530I$	$7.76010 - 9.86097I$
$u = -1.20331 + 0.78084I$ $a = 0.803486 - 0.238578I$ $b = 1.20331 - 0.78084I$	$8.46167 - 5.22804I$	$9.80861 + 4.92233I$
$u = -1.20331 - 0.78084I$ $a = 0.803486 + 0.238578I$ $b = 1.20331 + 0.78084I$	$8.46167 + 5.22804I$	$9.80861 - 4.92233I$

VII.

$\boldsymbol{I^u_7 = \langle u^7+2u^6+3u^5+4u^4+5u^3+3u^2+b+3u+2,\ a+1,\ u^8+3u^7+\cdots+3u+1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1\\-u^7-2u^6-3u^5-4u^4-5u^3-3u^2-3u-2\end{pmatrix}$$
$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}u^7+2u^6+3u^5+4u^4+5u^3+2u^2+3u+1\\u^6+u^5-u^4-u^3+u^2-u-1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u\\u^7+2u^6+2u^5+2u^4+3u^3+2u^2+2u+1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}u^7+3u^6+4u^5+4u^4+4u^3+3u^2+2u+2\\u^3+u^2+u\end{pmatrix}$$
$$a_3 = \begin{pmatrix}u^7+2u^6+3u^5+4u^4+5u^3+3u^2+3u+1\\-u^7-2u^6-3u^5-4u^4-5u^3-3u^2-3u-1\end{pmatrix}$$
$$a_{12} = \begin{pmatrix}u^7+2u^6+3u^5+4u^4+5u^3+3u^2+3u+1\\-u^7-2u^6-3u^5-4u^4-5u^3-3u^2-3u-2\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-u^2-u-1\\-u^7-2u^6-2u^5-2u^4-3u^3-u^2\end{pmatrix}$$
$$a_7 = \begin{pmatrix}-u^6-3u^5-4u^4-4u^3-4u^2-4u-1\\u^7+5u^6+10u^5+12u^4+11u^3+12u^2+10u+4\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-u^7-3u^6-5u^5-5u^4-5u^3-4u^2-3u-2\\-u^7-u^6-u^3\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 15u^7+35u^6+47u^5+47u^4+60u^3+37u^2+32u+19$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^8 - 7u^7 + 20u^6 - 37u^5 + 52u^4 - 48u^3 + 44u^2 - 19u + 11$
c_2, c_6	$u^8 - 4u^7 + 8u^6 - 14u^5 + 19u^4 - 17u^3 + 11u^2 - 4u + 1$
c_3, c_{11}	$u^8 + u^7 - 2u^6 - 5u^5 - u^4 + 6u^3 + 8u^2 + 4u + 1$
c_4, c_8	$u^8 + 3u^7 + 5u^6 + 6u^5 + 7u^4 + 6u^3 + 5u^2 + 3u + 1$
c_5, c_9	$u^8 + 2u^6 + u^5 + 4u^4 - u^3 + 4u^2 - u + 1$
c_7	$u^8 - 3u^7 - 2u^6 + 3u^5 + 22u^4 + 24u^3 + 18u^2 + 3u + 1$
c_{10}	$u^8 + 3u^7 + u^6 + 8u^4 + 6u^3 - 2u^2 - u + 1$
c_{12}	$(u^4 - 3u^3 + 3u^2 - u - 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^8 - 9y^7 - 14y^6 + 127y^5 + 668y^4 + 1306y^3 + 1256y^2 + 607y + 121$
c_2, c_6	$y^8 - 10y^6 - 6y^5 + 31y^4 + 33y^3 + 23y^2 + 6y + 1$
c_3, c_{11}	$y^8 - 5y^7 + 12y^6 - 17y^5 + 23y^4 - 16y^3 + 14y^2 + 1$
c_4, c_8	$y^8 + y^7 + 3y^6 + 8y^5 + 11y^4 + 8y^3 + 3y^2 + y + 1$
c_5, c_9	$y^8 + 4y^7 + 12y^6 + 23y^5 + 36y^4 + 37y^3 + 22y^2 + 7y + 1$
c_7	$y^8 - 13y^7 + 66y^6 + 83y^5 + 288y^4 + 194y^3 + 224y^2 + 27y + 1$
c_{10}	$y^8 - 7y^7 + 17y^6 - 24y^5 + 68y^4 - 66y^3 + 32y^2 - 5y + 1$
c_{12}	$(y^4 - 3y^3 + y^2 - 7y + 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.164478 + 0.986381I$ $a = -1.00000$ $b = -1.81917$	$-0.891430 + 0.808282I$	$4.38747 - 7.84089I$
$u = -0.164478 - 0.986381I$ $a = -1.00000$ $b = -1.81917$	$-0.891430 - 0.808282I$	$4.38747 + 7.84089I$
$u = \quad 0.452583 + 0.891722I$ $a = -1.00000$ $b = \quad 0.380278$	$1.13995 - 1.35977I$	$7.04382 - 3.05706I$
$u = \quad 0.452583 - 0.891722I$ $a = -1.00000$ $b = \quad 0.380278$	$1.13995 + 1.35977I$	$7.04382 + 3.05706I$
$u = -0.584796 + 0.379478I$ $a = -1.00000$ $b = -0.780553 - 0.914474I$	$1.15941 - 3.26530I$	$7.76010 + 9.86097I$
$u = -0.584796 - 0.379478I$ $a = -1.00000$ $b = -0.780553 + 0.914474I$	$1.15941 + 3.26530I$	$7.76010 - 9.86097I$
$u = -1.20331 + 0.78084I$ $a = -1.00000$ $b = -0.780553 + 0.914474I$	$8.46167 - 5.22804I$	$9.80861 + 4.92233I$
$u = -1.20331 - 0.78084I$ $a = -1.00000$ $b = -0.780553 - 0.914474I$	$8.46167 + 5.22804I$	$9.80861 - 4.92233I$

VIII.

$\boldsymbol{I_8^u = \langle -au + b,\ -u^3 + a^2 + au + 4u^2 - 2a - 6u + 4,\ u^4 - 3u^3 + 3u^2 - u - 1 \rangle}$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 11u^3a - 21u^2a - 7u^3 + 7au + 11u^2 + 5a + u + 7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_9	$u^8 + 2u^6 + u^5 + 4u^4 - u^3 + 4u^2 - u + 1$
c_2	$u^8 + 3u^7 + u^6 + 8u^4 + 6u^3 - 2u^2 - u + 1$
c_3, c_7	$u^8 + u^7 - 2u^6 - 5u^5 - u^4 + 6u^3 + 8u^2 + 4u + 1$
c_4	$(u^4 - 3u^3 + 3u^2 - u - 1)^2$
c_5	$u^8 - 7u^7 + 20u^6 - 37u^5 + 52u^4 - 48u^3 + 44u^2 - 19u + 11$
c_6, c_{10}	$u^8 - 4u^7 + 8u^6 - 14u^5 + 19u^4 - 17u^3 + 11u^2 - 4u + 1$
c_8, c_{12}	$u^8 + 3u^7 + 5u^6 + 6u^5 + 7u^4 + 6u^3 + 5u^2 + 3u + 1$
c_{11}	$u^8 - 3u^7 - 2u^6 + 3u^5 + 22u^4 + 24u^3 + 18u^2 + 3u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_9	$y^8 + 4y^7 + 12y^6 + 23y^5 + 36y^4 + 37y^3 + 22y^2 + 7y + 1$
c_2	$y^8 - 7y^7 + 17y^6 - 24y^5 + 68y^4 - 66y^3 + 32y^2 - 5y + 1$
c_3, c_7	$y^8 - 5y^7 + 12y^6 - 17y^5 + 23y^4 - 16y^3 + 14y^2 + 1$
c_4	$(y^4 - 3y^3 + y^2 - 7y + 1)^2$
c_5	$y^8 - 9y^7 - 14y^6 + 127y^5 + 668y^4 + 1306y^3 + 1256y^2 + 607y + 121$
c_6, c_{10}	$y^8 - 10y^6 - 6y^5 + 31y^4 + 33y^3 + 23y^2 + 6y + 1$
c_8, c_{12}	$y^8 + y^7 + 3y^6 + 8y^5 + 11y^4 + 8y^3 + 3y^2 + y + 1$
c_{11}	$y^8 - 13y^7 + 66y^6 + 83y^5 + 288y^4 + 194y^3 + 224y^2 + 27y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_8^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.780553 + 0.914474I$ $a = 1.143740 - 0.339608I$ $b = 1.20331 + 0.78084I$	$8.46167 + 5.22804I$	$9.80861 - 4.92233I$
$u = 0.780553 + 0.914474I$ $a = 0.075710 - 0.574866I$ $b = 0.584796 - 0.379478I$	$1.15941 - 3.26530I$	$7.76010 + 9.86097I$
$u = 0.780553 - 0.914474I$ $a = 1.143740 + 0.339608I$ $b = 1.20331 - 0.78084I$	$8.46167 - 5.22804I$	$9.80861 + 4.92233I$
$u = 0.780553 - 0.914474I$ $a = 0.075710 + 0.574866I$ $b = 0.584796 + 0.379478I$	$1.15941 + 3.26530I$	$7.76010 - 9.86097I$
$u = -0.380278$ $a = 1.19014 + 2.34492I$ $b = -0.452583 - 0.891722I$	$1.13995 - 1.35977I$	$7.04382 - 3.05706I$
$u = -0.380278$ $a = 1.19014 - 2.34492I$ $b = -0.452583 + 0.891722I$	$1.13995 + 1.35977I$	$7.04382 + 3.05706I$
$u = 1.81917$ $a = 0.090414 + 0.542214I$ $b = 0.164478 + 0.986381I$	$-0.891430 - 0.808282I$	$4.38747 + 7.84089I$
$u = 1.81917$ $a = 0.090414 - 0.542214I$ $b = 0.164478 - 0.986381I$	$-0.891430 + 0.808282I$	$4.38747 - 7.84089I$

IX. $I_9^u = \langle -14u^{14} - 57u^{13} + \cdots + 4b - 4,\ 4u^{14}a - 24u^{14} + \cdots + 5a - 25,\ u^{15} + 5u^{14} + \cdots + u + 1\rangle$

(i) Arc colorings

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

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

$$a_1 = \begin{pmatrix} a \\ \frac{7}{2}u^{14} + \frac{57}{4}u^{13} + \cdots - \frac{1}{4}u + 1 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -\frac{7}{2}u^{14} - \frac{57}{4}u^{13} + \cdots + a - 1 \\ \frac{1}{2}u^{14} + \frac{3}{2}u^{13} + \cdots - au - \frac{9}{4} \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{7}{2}u^{14}a + u^{14} + \cdots - a + 6 \\ \frac{5}{4}u^{13} + \frac{19}{4}u^{12} + \cdots - 4u + 1 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^{14}a - \frac{3}{2}u^{14} + \cdots - \frac{5}{2}a - \frac{7}{2}u \\ -\frac{7}{4}u^{14} - \frac{29}{4}u^{13} + \cdots + \frac{1}{2}u - \frac{3}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} \frac{3}{4}u^{14}a - \frac{13}{4}u^{14} + \cdots + \frac{5}{4}a - \frac{19}{4} \\ -\frac{3}{2}u^{14}a + \frac{7}{4}u^{14} + \cdots - a + \frac{7}{4} \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -\frac{7}{2}u^{14} - \frac{57}{4}u^{13} + \cdots + a - 1 \\ \frac{7}{2}u^{14} + \frac{57}{4}u^{13} + \cdots - \frac{1}{4}u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -\frac{1}{2}u^{14}a + \frac{3}{4}u^{14} + \cdots + \frac{9}{4}a + \frac{19}{4} \\ -3u^{14}a + \frac{1}{4}u^{14} + \cdots - \frac{13}{4}a + \frac{1}{4} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{7}{4}u^{14}a + \frac{13}{2}u^{14} + \cdots - \frac{3}{2}a + \frac{19}{2} \\ \frac{1}{4}u^{14}a + 2u^{14} + \cdots + \frac{1}{2}a + \frac{13}{4} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^{14}a + 7u^{14} + \cdots + a + \frac{41}{4} \\ u^{14}a - \frac{9}{4}u^{14} + \cdots + a - 3 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 4u^{14} + 18u^{13} + 34u^{12} + 18u^{11} - 56u^{10} - 126u^9 - 96u^8 + 44u^7 + 144u^6 + 138u^5 + 52u^4 - 46u^3 - 56u^2 - 2u + 24$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5, c_9	$(u^{15} + 3u^{14} + \cdots + 13u + 11)^2$
c_2, c_6, c_{10}	$(u^{15} + 3u^{14} + \cdots + 23u + 1)^2$
c_3, c_7, c_{11}	$(u^{15} - 5u^{14} + \cdots - 205u + 61)^2$
c_4, c_8, c_{12}	$(u^{15} + 5u^{14} + \cdots + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_9	$(y^{15} + 5y^{14} + \cdots - 1107y - 121)^2$
c_2, c_6, c_{10}	$(y^{15} - 15y^{14} + \cdots + 201y - 1)^2$
c_3, c_7, c_{11}	$(y^{15} - 19y^{14} + \cdots + 9085y - 3721)^2$
c_4, c_8, c_{12}	$(y^{15} - 3y^{14} + \cdots + 13y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.046733+1.000910I$ $a=-0.995650+0.093177I$ $b=-1.81124$	-0.882183	$4.39116+0.I$
$u=-0.046733+1.000910I$ $a=\ \ 0.08431+1.80566I$ $b=-0.046733-1.000910I$	-0.882183	$4.39116+0.I$
$u=-0.046733-1.000910I$ $a=-0.995650-0.093177I$ $b=-1.81124$	-0.882183	$4.39116+0.I$
$u=-0.046733-1.000910I$ $a=\ \ 0.08431-1.80566I$ $b=-0.046733+1.000910I$	-0.882183	$4.39116+0.I$
$u=\ \ 1.217660+0.183120I$ $a=-0.751696+0.987223I$ $b=-0.738859+0.190472I$	$10.95830-3.33174I$	$13.91874+2.36228I$
$u=\ \ 1.217660+0.183120I$ $a=-0.570362+0.242199I$ $b=-1.09609+1.06445I$	$10.95830-3.33174I$	$13.91874+2.36228I$
$u=\ \ 1.217660-0.183120I$ $a=-0.751696-0.987223I$ $b=-0.738859-0.190472I$	$10.95830+3.33174I$	$13.91874-2.36228I$
$u=\ \ 1.217660-0.183120I$ $a=-0.570362-0.242199I$ $b=-1.09609-1.06445I$	$10.95830+3.33174I$	$13.91874-2.36228I$
$u=-0.738859+0.190472I$ $a=-1.48542-0.63077I$ $b=-1.09609+1.06445I$	$10.95830-3.33174I$	$13.91874+2.36228I$
$u=-0.738859+0.190472I$ $a=\ \ 1.73930-0.99229I$ $b=\ \ 1.217660+0.183120I$	$10.95830-3.33174I$	$13.91874+2.36228I$

Solutions to I_9^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.738859 - 0.190472I$ $a = -1.48542 + 0.63077I$ $b = -1.09609 - 1.06445I$	$10.95830 + 3.33174I$	$13.91874 - 2.36228I$
$u = -0.738859 - 0.190472I$ $a = 1.73930 + 0.99229I$ $b = 1.217660 - 0.183120I$	$10.95830 + 3.33174I$	$13.91874 - 2.36228I$
$u = -0.652116 + 0.353801I$ $a = -0.571565 - 0.118668I$ $b = -0.69295 - 1.45068I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = -0.652116 + 0.353801I$ $a = -0.11149 + 2.16409I$ $b = 0.414711 - 0.124835I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = -0.652116 - 0.353801I$ $a = -0.571565 + 0.118668I$ $b = -0.69295 + 1.45068I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = -0.652116 - 0.353801I$ $a = -0.11149 - 2.16409I$ $b = 0.414711 + 0.124835I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = -1.09609 + 1.06445I$ $a = -0.488224 - 0.641197I$ $b = -0.738859 + 0.190472I$	$10.95830 - 3.33174I$	$13.91874 + 2.36228I$
$u = -1.09609 + 1.06445I$ $a = 0.433762 + 0.247467I$ $b = 1.217660 + 0.183120I$	$10.95830 - 3.33174I$	$13.91874 + 2.36228I$
$u = -1.09609 - 1.06445I$ $a = -0.488224 + 0.641197I$ $b = -0.738859 - 0.190472I$	$10.95830 + 3.33174I$	$13.91874 - 2.36228I$
$u = -1.09609 - 1.06445I$ $a = 0.433762 - 0.247467I$ $b = 1.217660 - 0.183120I$	$10.95830 + 3.33174I$	$13.91874 - 2.36228I$

Solutions to I_9^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.414711 + 0.124835I$ $a = -1.67728 - 0.34824I$ $b = -0.69295 + 1.45068I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = 0.414711 + 0.124835I$ $a = -0.56662 + 3.66862I$ $b = -0.652116 - 0.353801I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = 0.414711 - 0.124835I$ $a = -1.67728 + 0.34824I$ $b = -0.69295 - 1.45068I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = 0.414711 - 0.124835I$ $a = -0.56662 - 3.66862I$ $b = -0.652116 + 0.353801I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = -0.69295 + 1.45068I$ $a = -0.023743 + 0.460864I$ $b = 0.414711 + 0.124835I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = -0.69295 + 1.45068I$ $a = -0.041119 - 0.266231I$ $b = -0.652116 - 0.353801I$	$1.81981 + 2.21397I$	$12.88568 - 4.22289I$
$u = -0.69295 - 1.45068I$ $a = -0.023743 - 0.460864I$ $b = 0.414711 - 0.124835I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = -0.69295 - 1.45068I$ $a = -0.041119 + 0.266231I$ $b = -0.652116 + 0.353801I$	$1.81981 - 2.21397I$	$12.88568 + 4.22289I$
$u = -1.81124$ $a = 0.025801 + 0.552610I$ $b = -0.046733 + 1.000910I$	-0.882183	4.39120
$u = -1.81124$ $a = 0.025801 - 0.552610I$ $b = -0.046733 - 1.000910I$	-0.882183	4.39120

X. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1, c_5, c_9	$(u^8+2u^6+u^5+4u^4-u^3+4u^2-u+1)^2$ $\cdot(u^8-7u^7+20u^6-37u^5+52u^4-48u^3+44u^2-19u+11)$ $\cdot(u^9-4u^8+10u^7-15u^6+16u^5-14u^4+12u^3-10u^2+6u-1)$ $\cdot(u^9-2u^8+4u^7-5u^6+8u^5-10u^4+8u^3-6u^2+2u+1)$ $\cdot((u^{15}+3u^{14}+\cdots+13u+11)^2)(u^{18}-16u^{17}+\cdots-240u+32)$ $\cdot(u^{18}+2u^{17}+\cdots+11u+7)^2$
c_2, c_6, c_{10}	$(u^8-4u^7+8u^6-14u^5+19u^4-17u^3+11u^2-4u+1)^2$ $\cdot(u^8+3u^7+u^6+8u^4+6u^3-2u^2-u+1)$ $\cdot(u^9-7u^8+18u^7-19u^6+4u^5+5u^4-2u^3-u^2+3u-1)$ $\cdot(u^9+5u^8+8u^7+5u^6+4u^5+3u^4+3u^2-u+1)$ $\cdot((u^{15}+3u^{14}+\cdots+23u+1)^2)(u^{18}-12u^{17}+\cdots-1552u+352)$ $\cdot(u^{18}+6u^{17}+\cdots+2u+1)^2$
c_3, c_7, c_{11}	$(u^8-3u^7-2u^6+3u^5+22u^4+24u^3+18u^2+3u+1)$ $\cdot(u^8+u^7-2u^6-5u^5-u^4+6u^3+8u^2+4u+1)^2$ $\cdot(u^9+4u^8+5u^7-2u^5+u^4+4u^2+u+5)$ $\cdot(u^9+6u^8+15u^7+16u^6+2u^5-9u^4-2u^3+6u^2+3u-1)$ $\cdot((u^{15}-5u^{14}+\cdots-205u+61)^2)(u^{18}-7u^{17}+\cdots-40u+7)^2$ $\cdot(u^{18}+18u^{17}+\cdots+5632u+1024)$
c_4, c_8, c_{12}	$(u^4-3u^3+3u^2-u-1)^2$ $\cdot(u^8+3u^7+5u^6+6u^5+7u^4+6u^3+5u^2+3u+1)^2$ $\cdot(u^9-5u^8+12u^7-16u^6+13u^5-6u^4+2u^3-u^2+2u-1)$ $\cdot(u^9-3u^8+4u^7-2u^6+u^5-2u^4+2u^3-u^2-1)$ $\cdot((u^{15}+5u^{14}+\cdots+u+1)^2)(u^{18}-17u^{17}+\cdots-176u+32)$ $\cdot(u^{18}+5u^{17}+\cdots+5u+1)^2$

XI. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5, c_9	$(y^8 - 9y^7 - 14y^6 + 127y^5 + 668y^4 + 1306y^3 + 1256y^2 + 607y + 121)$ $\cdot (y^8 + 4y^7 + 12y^6 + 23y^5 + 36y^4 + 37y^3 + 22y^2 + 7y + 1)^2$ $\cdot (y^9 + 4y^8 + 12y^7 + 7y^6 + 8y^5 + 26y^3 + 16y^2 + 16y - 1)$ $\cdot (y^9 + 4y^8 + 12y^7 + 15y^6 + 8y^5 - 12y^4 - 14y^3 + 16y^2 + 16y - 1)$ $\cdot (y^{15} + 5y^{14} + \cdots - 1107y - 121)^2$ $\cdot (y^{18} + 2y^{17} + \cdots + 15616y + 1024)(y^{18} + 10y^{17} + \cdots + 313y + 49)^2$
c_2, c_6, c_{10}	$(y^8 - 10y^6 - 6y^5 + 31y^4 + 33y^3 + 23y^2 + 6y + 1)^2$ $\cdot (y^8 - 7y^7 + 17y^6 - 24y^5 + 68y^4 - 66y^3 + 32y^2 - 5y + 1)$ $\cdot (y^9 - 13y^8 + 66y^7 - 151y^6 + 126y^5 + 15y^4 - 3y^2 + 7y - 1)$ $\cdot (y^9 - 9y^8 + 22y^7 + 9y^6 - 46y^5 - 65y^4 - 36y^3 - 15y^2 - 5y - 1)$ $\cdot ((y^{15} - 15y^{14} + \cdots + 201y - 1)^2)(y^{18} - 30y^{17} + \cdots - 8y + 1)^2$ $\cdot (y^{18} - 12y^{17} + \cdots + 401664y + 123904)$
c_3, c_7, c_{11}	$(y^8 - 13y^7 + 66y^6 + 83y^5 + 288y^4 + 194y^3 + 224y^2 + 27y + 1)$ $\cdot (y^8 - 5y^7 + 12y^6 - 17y^5 + 23y^4 - 16y^3 + 14y^2 + 1)^2$ $\cdot (y^9 - 6y^8 + 21y^7 - 28y^6 - 26y^5 - 31y^4 - 12y^3 - 26y^2 - 39y - 25)$ $\cdot (y^9 - 6y^8 + 37y^7 - 92y^6 + 166y^5 - 179y^4 + 156y^3 - 66y^2 + 21y - 1)$ $\cdot (y^{15} - 19y^{14} + \cdots + 9085y - 3721)^2$ $\cdot (y^{18} - 15y^{17} + \cdots - 634y + 49)^2$ $\cdot (y^{18} - 10y^{17} + \cdots + 1572864y + 1048576)$
c_4, c_8, c_{12}	$(y^4 - 3y^3 + y^2 - 7y + 1)^2$ $\cdot (y^8 + y^7 + 3y^6 + 8y^5 + 11y^4 + 8y^3 + 3y^2 + y + 1)^2$ $\cdot (y^9 - y^8 + 6y^7 - 4y^6 + 3y^5 - 10y^4 - 4y^3 - 5y^2 - 2y - 1)$ $\cdot (y^9 - y^8 + 10y^7 + 19y^5 + 22y^4 + 12y^3 - 5y^2 + 2y - 1)$ $\cdot ((y^{15} - 3y^{14} + \cdots + 13y - 1)^2)(y^{18} - 7y^{17} + \cdots - 1792y + 1024)$ $\cdot (y^{18} - y^{17} + \cdots - 5y + 1)^2$