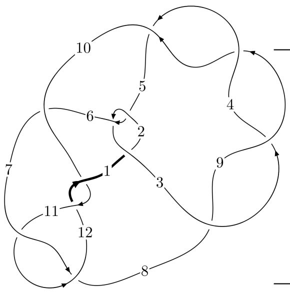
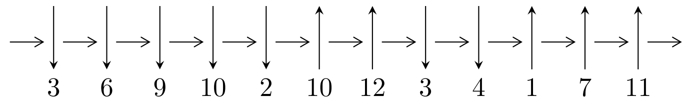
$12n_{0339}$ ($K12n_{0339}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle 1.66975 \times 10^{42} u^{55} - 3.16547 \times 10^{41} u^{54} + \cdots + 4.47134 \times 10^{42} b - 8.10923 \times 10^{42},$$
$$- 1.22687 \times 10^{42} u^{55} - 2.29862 \times 10^{42} u^{54} + \cdots + 1.78854 \times 10^{43} a - 5.42549 \times 10^{43},\ u^{56} + u^{55} + \cdots - 24u -$$
$$I_2^u = \langle b+1,\ 4a^3 + 2a^2u + 12a^2 + 4au + 16a + 3u + 8,\ u^2 - 2\rangle$$

$$I_1^v = \langle a,\ b-1,\ v^3 - v^2 + 2v - 1\rangle$$

* 3 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 65 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.

$$\boldsymbol{I_1^u = \langle 1.67\times10^{42}u^{55} - 3.17\times10^{41}u^{54} + \cdots + 4.47\times10^{42}b - 8.11\times10^{42},\ -1.23\times10^{42}u^{55} - 2.30\times10^{42}u^{54} + \cdots + 1.79\times10^{43}a - 5.43\times10^{43},\ u^{56} + u^{55} + \cdots - 24u - 8\rangle}$$

(i) Arc colorings

$$a_3 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0.0685965u^{55} + 0.128520u^{54} + \cdots + 1.30791u + 3.03348 \\ -0.373433u^{55} + 0.0707946u^{54} + \cdots + 4.21694u + 1.81360 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -0.405753u^{55} + 0.122299u^{54} + \cdots + 7.07171u + 5.59685 \\ -0.513211u^{55} + 0.0509245u^{54} + \cdots + 5.89345u + 2.99527 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} -0.240787u^{55} + 0.0796338u^{54} + \cdots + 3.53793u + 4.36769 \\ -0.164966u^{55} + 0.0426655u^{54} + \cdots + 3.53379u + 1.22915 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -0.405753u^{55} + 0.122299u^{54} + \cdots + 7.07171u + 5.59685 \\ -0.164966u^{55} + 0.0426655u^{54} + \cdots + 3.53379u + 1.22915 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.221862u^{55} - 0.235942u^{54} + \cdots + 14.8907u + 4.16689 \\ -0.206006u^{55} + 0.0316302u^{54} + \cdots + 0.697720u + 0.830810 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u^2 + 1 \\ -u^4 + 2u^2 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -1.04226u^{55} - 0.0828767u^{54} + \cdots + 18.0314u + 6.34714 \\ -0.876806u^{55} + 0.0149551u^{54} + \cdots + 11.0477u + 5.43910 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -u \\ -u \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.91247u^{55} - 0.0651102u^{54} + \cdots - 36.7295u - 19.6145$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{56} + 22u^{55} + \cdots + 6193u + 529$
c_2, c_5	$u^{56} + 4u^{55} + \cdots - 35u - 23$
c_3, c_4, c_8 c_9	$u^{56} + u^{55} + \cdots - 24u - 8$
c_6	$u^{56} - 2u^{55} + \cdots - 144u - 52$
c_7, c_{11}	$u^{56} + 2u^{55} + \cdots - 12u - 1$
c_{10}, c_{12}	$u^{56} - 20u^{55} + \cdots - 70u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{56} + 34y^{55} + \cdots - 4251793y + 279841$
c_2, c_5	$y^{56} - 22y^{55} + \cdots - 6193y + 529$
c_3, c_4, c_8 c_9	$y^{56} - 49y^{55} + \cdots + 320y + 64$
c_6	$y^{56} - 36y^{55} + \cdots - 244856y + 2704$
c_7, c_{11}	$y^{56} - 20y^{55} + \cdots - 70y + 1$
c_{10}, c_{12}	$y^{56} + 36y^{55} + \cdots - 2910y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.006180 + 0.341220I$ $a = -0.289797 - 0.354743I$ $b = 0.753588 + 0.708565I$	$-1.067960 - 0.006602I$	$-5.64848 + 0.I$
$u = -1.006180 - 0.341220I$ $a = -0.289797 + 0.354743I$ $b = 0.753588 - 0.708565I$	$-1.067960 + 0.006602I$	$-5.64848 + 0.I$
$u = 0.229845 + 0.885092I$ $a = 0.23373 + 1.60210I$ $b = -1.066080 - 0.785797I$	$2.82839 - 10.02440I$	$-1.48494 + 7.67479I$
$u = 0.229845 - 0.885092I$ $a = 0.23373 - 1.60210I$ $b = -1.066080 + 0.785797I$	$2.82839 + 10.02440I$	$-1.48494 - 7.67479I$
$u = 0.095889 + 0.905571I$ $a = 0.41943 + 1.46050I$ $b = -0.910114 - 0.875500I$	$7.54385 - 3.22762I$	$3.27833 + 3.06176I$
$u = 0.095889 - 0.905571I$ $a = 0.41943 - 1.46050I$ $b = -0.910114 + 0.875500I$	$7.54385 + 3.22762I$	$3.27833 - 3.06176I$
$u = 0.987650 + 0.502370I$ $a = -0.286230 + 0.250539I$ $b = 0.881358 - 0.804502I$	$0.47314 + 5.10436I$	0
$u = 0.987650 - 0.502370I$ $a = -0.286230 - 0.250539I$ $b = 0.881358 + 0.804502I$	$0.47314 - 5.10436I$	0
$u = -0.062857 + 0.881765I$ $a = 0.58725 + 1.29532I$ $b = -0.690478 - 0.924886I$	$3.98324 + 3.71635I$	$0.54832 - 2.83161I$
$u = -0.062857 - 0.881765I$ $a = 0.58725 - 1.29532I$ $b = -0.690478 + 0.924886I$	$3.98324 - 3.71635I$	$0.54832 + 2.83161I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.786679 + 0.359198I$ $a = 0.432713 - 0.772670I$ $b = 0.471201 + 0.699941I$	$-0.08460 - 3.96138I$	$-1.83399 + 7.39744I$
$u = 0.786679 - 0.359198I$ $a = 0.432713 + 0.772670I$ $b = 0.471201 - 0.699941I$	$-0.08460 + 3.96138I$	$-1.83399 - 7.39744I$
$u = -0.202973 + 0.835141I$ $a = 0.31939 - 1.67631I$ $b = -1.011030 + 0.737718I$	$1.39627 + 4.40461I$	$-3.28369 - 3.30771I$
$u = -0.202973 - 0.835141I$ $a = 0.31939 + 1.67631I$ $b = -1.011030 - 0.737718I$	$1.39627 - 4.40461I$	$-3.28369 + 3.30771I$
$u = -1.15688$ $a = -1.40454$ $b = -1.29717$	-3.09499	0
$u = 0.002274 + 0.798617I$ $a = 0.67122 - 1.43784I$ $b = -0.729713 + 0.782717I$	$2.26056 + 1.36637I$	$-1.86008 - 2.59968I$
$u = 0.002274 - 0.798617I$ $a = 0.67122 + 1.43784I$ $b = -0.729713 - 0.782717I$	$2.26056 - 1.36637I$	$-1.86008 + 2.59968I$
$u = -1.230490 + 0.202314I$ $a = -1.221100 - 0.322026I$ $b = -1.341000 - 0.107492I$	$-6.99348 + 5.20308I$	0
$u = -1.230490 - 0.202314I$ $a = -1.221100 + 0.322026I$ $b = -1.341000 + 0.107492I$	$-6.99348 - 5.20308I$	0
$u = -1.253730 + 0.113458I$ $a = -0.29240 + 1.67063I$ $b = 0.798165 - 0.447170I$	$-7.89052 - 1.16203I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.253730 - 0.113458I$ $a = -0.29240 - 1.67063I$ $b = 0.798165 + 0.447170I$	$-7.89052 + 1.16203I$	0
$u = 1.183640 + 0.457210I$ $a = -0.399011 + 0.254230I$ $b = 0.686195 - 0.927663I$	$4.20004 - 1.62927I$	0
$u = 1.183640 - 0.457210I$ $a = -0.399011 - 0.254230I$ $b = 0.686195 + 0.927663I$	$4.20004 + 1.62927I$	0
$u = 1.265580 + 0.146299I$ $a = -0.06646 - 1.75568I$ $b = 0.843815 + 0.469241I$	$-8.04174 - 4.90764I$	0
$u = 1.265580 - 0.146299I$ $a = -0.06646 + 1.75568I$ $b = 0.843815 - 0.469241I$	$-8.04174 + 4.90764I$	0
$u = -1.208550 + 0.422798I$ $a = 0.571547 + 1.151150I$ $b = 0.889236 - 0.816585I$	$0.452903 + 0.953294I$	0
$u = -1.208550 - 0.422798I$ $a = 0.571547 - 1.151150I$ $b = 0.889236 + 0.816585I$	$0.452903 - 0.953294I$	0
$u = -0.686053 + 0.086131I$ $a = 0.079007 - 0.372551I$ $b = 0.701986 + 0.419047I$	$-1.231800 - 0.090410I$	$-7.02973 - 0.67945I$
$u = -0.686053 - 0.086131I$ $a = 0.079007 + 0.372551I$ $b = 0.701986 - 0.419047I$	$-1.231800 + 0.090410I$	$-7.02973 + 0.67945I$
$u = 1.302460 + 0.169792I$ $a = -1.133380 + 0.246466I$ $b = -1.285030 + 0.150211I$	$-7.79470 - 0.02282I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.302460 - 0.169792I$ $a = -1.133380 - 0.246466I$ $b = -1.285030 - 0.150211I$	$-7.79470 + 0.02282I$	0
$u = 1.283110 + 0.353977I$ $a = 0.62422 - 1.32590I$ $b = 0.971987 + 0.717214I$	$-1.73554 - 5.51211I$	0
$u = 1.283110 - 0.353977I$ $a = 0.62422 + 1.32590I$ $b = 0.971987 - 0.717214I$	$-1.73554 + 5.51211I$	0
$u = -1.284720 + 0.360060I$ $a = -0.496822 - 0.268927I$ $b = 0.497181 + 0.900810I$	$-1.75826 + 2.80506I$	0
$u = -1.284720 - 0.360060I$ $a = -0.496822 + 0.268927I$ $b = 0.497181 - 0.900810I$	$-1.75826 - 2.80506I$	0
$u = 1.317840 + 0.407750I$ $a = -0.487396 + 0.226625I$ $b = 0.496076 - 0.988968I$	$-0.32844 - 8.33898I$	0
$u = 1.317840 - 0.407750I$ $a = -0.487396 - 0.226625I$ $b = 0.496076 + 0.988968I$	$-0.32844 + 8.33898I$	0
$u = 1.38998$ $a = -1.03411$ $b = -1.06011$	-6.53389	0
$u = -1.346720 + 0.418450I$ $a = 0.78256 + 1.22776I$ $b = 1.071450 - 0.792956I$	$3.02423 + 7.97264I$	0
$u = -1.346720 - 0.418450I$ $a = 0.78256 - 1.22776I$ $b = 1.071450 + 0.792956I$	$3.02423 - 7.97264I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=\ 1.39916+0.36081I$ $a=\ 0.90858-1.34750I$ $b=\ 1.137040+0.699212I$	$-3.68128-8.73528I$	0
$u=\ 1.39916-0.36081I$ $a=\ 0.90858+1.34750I$ $b=\ 1.137040-0.699212I$	$-3.68128+8.73528I$	0
$u=-0.071746+0.541437I$ $a=-0.0956064-0.0169262I$ $b=\ 1.239380+0.055514I$	$-3.47352-2.49924I$	$-1.84511+2.12132I$
$u=-0.071746-0.541437I$ $a=-0.0956064+0.0169262I$ $b=\ 1.239380-0.055514I$	$-3.47352+2.49924I$	$-1.84511-2.12132I$
$u=-1.41936+0.37849I$ $a=\ 0.94833+1.29184I$ $b=\ 1.171180-0.721786I$	$-2.4029+14.5849I$	0
$u=-1.41936-0.37849I$ $a=\ 0.94833-1.29184I$ $b=\ 1.171180+0.721786I$	$-2.4029-14.5849I$	0
$u=\ 0.267258+0.452591I$ $a=\ 0.981532-0.698076I$ $b=-0.137372+0.470727I$	$1.38052+0.70261I$	$3.81139-1.05801I$
$u=\ 0.267258-0.452591I$ $a=\ 0.981532+0.698076I$ $b=-0.137372-0.470727I$	$1.38052-0.70261I$	$3.81139+1.05801I$
$u=-1.47532$ $a=-0.898246$ $b=-0.558622$	-4.26438	0
$u=\ 1.51089+0.06240I$ $a=-0.880755+0.098234I$ $b=-0.890378+0.394410I$	$-8.44146-0.83388I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.51089 - 0.06240I$ $a = -0.880755 - 0.098234I$ $b = -0.890378 - 0.394410I$	$-8.44146 + 0.83388I$	0
$u = -1.52798 + 0.02835I$ $a = -0.851707 - 0.066826I$ $b = -0.756667 - 0.444461I$	$-7.94390 - 4.32216I$	0
$u = -1.52798 - 0.02835I$ $a = -0.851707 + 0.066826I$ $b = -0.756667 + 0.444461I$	$-7.94390 + 4.32216I$	0
$u = -0.014467 + 0.397572I$ $a = 4.05108 - 0.61951I$ $b = -0.737254 + 0.042361I$	$-4.09903 + 2.92617I$	$2.95211 - 3.95214I$
$u = -0.014467 - 0.397572I$ $a = 4.05108 + 0.61951I$ $b = -0.737254 - 0.042361I$	$-4.09903 - 2.92617I$	$2.95211 + 3.95214I$
$u = -0.390682$ $a = 0.117034$ $b = 0.806447$	-1.01597	-12.5900

II. $I_2^u = \langle b+1,\ 4a^3+2a^2u+12a^2+4au+16a+3u+8,\ u^2-2 \rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 8a^2+4au+16a+4u+4$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.41421$ $a = -1.40294$ $b = -1.00000$	-5.46628	-4.98050
$u = 1.41421$ $a = -1.15208 + 0.92429I$ $b = -1.00000$	$-9.60386 - 2.82812I$	$-11.50976 + 2.97945I$
$u = 1.41421$ $a = -1.15208 - 0.92429I$ $b = -1.00000$	$-9.60386 + 2.82812I$	$-11.50976 - 2.97945I$
$u = -1.41421$ $a = -0.847916 + 0.924288I$ $b = -1.00000$	$-9.60386 + 2.82812I$	$-11.50976 - 2.97945I$
$u = -1.41421$ $a = -0.847916 - 0.924288I$ $b = -1.00000$	$-9.60386 - 2.82812I$	$-11.50976 + 2.97945I$
$u = -1.41421$ $a = -0.597062$ $b = -1.00000$	-5.46628	-4.98050

III. $I_1^v = \langle a,\ b-1,\ v^3 - v^2 + 2v - 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 10v^2 - 6v + 6$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^v		$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$v=$	$0.215080+1.307140I$		
$a=$	0	$-4.66906+2.82812I$	$-11.91407-2.22005I$
$b=$	1.00000		
$v=$	$0.215080-1.307140I$		
$a=$	0	$-4.66906-2.82812I$	$-11.91407+2.22005I$
$b=$	1.00000		
$v=$	0.569840		
$a=$	0	-0.531480	5.82810
$b=$	1.00000		

IV. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u-1)^9)(u^{56}+22u^{55}+\cdots+6193u+529)$
c_2	$((u-1)^3)(u+1)^6(u^{56}+4u^{55}+\cdots-35u-23)$
c_3, c_4, c_8 c_9	$u^3(u^2-2)^3(u^{56}+u^{55}+\cdots-24u-8)$
c_5	$((u-1)^6)(u+1)^3(u^{56}+4u^{55}+\cdots-35u-23)$
c_6	$((u^3-u^2+2u-1)^2)(u^3+u^2+2u+1)(u^{56}-2u^{55}+\cdots-144u-52)$
c_7	$(u^3-u^2+1)(u^3+u^2-1)^2(u^{56}+2u^{55}+\cdots-12u-1)$
c_{10}	$((u^3+u^2+2u+1)^3)(u^{56}-20u^{55}+\cdots-70u+1)$
c_{11}	$((u^3-u^2+1)^2)(u^3+u^2-1)(u^{56}+2u^{55}+\cdots-12u-1)$
c_{12}	$((u^3-u^2+2u-1)^3)(u^{56}-20u^{55}+\cdots-70u+1)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y-1)^9)(y^{56}+34y^{55}+\cdots-4251793y+279841)$
c_2, c_5	$((y-1)^9)(y^{56}-22y^{55}+\cdots-6193y+529)$
c_3, c_4, c_8 c_9	$y^3(y-2)^6(y^{56}-49y^{55}+\cdots+320y+64)$
c_6	$((y^3+3y^2+2y-1)^3)(y^{56}-36y^{55}+\cdots-244856y+2704)$
c_7, c_{11}	$((y^3-y^2+2y-1)^3)(y^{56}-20y^{55}+\cdots-70y+1)$
c_{10}, c_{12}	$((y^3+3y^2+2y-1)^3)(y^{56}+36y^{55}+\cdots-2910y+1)$