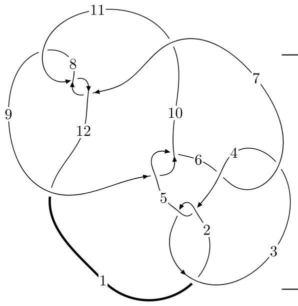
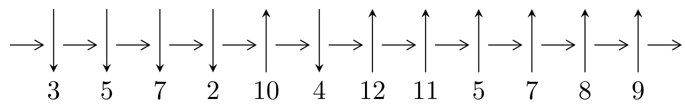
# $12n_{0118}$ ($K12n_{0118}$)




A knot diagram[1]

**Linearized knot diagam**




**Solving Sequence**

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

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

$$\begin{aligned}
I_1^u &= \langle -647u^{17} + 2375u^{16} + \cdots + 9396b - 4651,\ -6142u^{17} + 31873u^{16} + \cdots + 9396a - 63899,\\
&\quad u^{18} - 5u^{17} + \cdots + 9u + 1\rangle\\
I_2^u &= \langle au - u^2 + b + a + u + 1,\ -2u^2a + a^2 - 2au + 4u^2 - a + 8,\ u^3 + u^2 + 2u + 1\rangle\\
I_3^u &= \langle b,\ u^5 - 2u^4 + 4u^3 - 4u^2 + a + 3u - 2,\ u^6 - u^5 + 3u^4 - 2u^3 + 2u^2 - u - 1\rangle\\
I_4^u &= \langle b - u,\ u^2 + a + u + 1,\ u^3 + u^2 + 2u + 1\rangle
\end{aligned}$$

* 4 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 33 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.** $\boldsymbol{I_1^u = \langle -647u^{17} + 2375u^{16} + \cdots + 9396b - 4651,\ -6142u^{17} + 31873u^{16} + \cdots + 9396a - 63899,\ u^{18} - 5u^{17} + \cdots + 9u + 1\rangle}$

**(i) Arc colorings**

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.653682u^{17} - 3.39219u^{16} + \cdots - 10.7699u + 6.80066 \\ 0.0688591u^{17} - 0.252767u^{16} + \cdots + 0.207322u + 0.494998 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.722542u^{17} - 3.64496u^{16} + \cdots - 10.5626u + 7.29566 \\ 0.0688591u^{17} - 0.252767u^{16} + \cdots + 0.207322u + 0.494998 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.257450u^{17} - 0.780438u^{16} + \cdots - 0.469455u - 2.80502 \\ -0.357812u^{17} + 1.57620u^{16} + \cdots + 3.73297u + 0.156982 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^7 - 3u^5 - 2u^3 + u \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -0.00500213u^{17} + 0.206152u^{16} + \cdots + 1.80449u - 2.50234 \\ -0.181141u^{17} + 0.997233u^{16} + \cdots + 2.45732u - 0.00500213 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.232546u^{17} - 1.30726u^{16} + \cdots - 5.17156u + 5.55034 \\ 0.181141u^{17} - 0.997233u^{16} + \cdots - 2.45732u + 0.00500213 \end{pmatrix}$$

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

**(iii) Cusp Shapes** $= -\frac{2501}{1566}u^{17} + \frac{12545}{1566}u^{16} + \cdots + \frac{44011}{3132}u - \frac{28247}{3132}$

**(iv) u-Polynomials at the component**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $u^{18} + 10u^{17} + \cdots + 526u + 1$ |
| $c_2, c_4$ | $u^{18} - 10u^{17} + \cdots + 14u + 1$ |
| $c_3, c_6$ | $u^{18} - 4u^{17} + \cdots + 256u - 64$ |
| $c_5, c_9$ | $u^{18} + 9u^{17} + \cdots - 2048u - 512$ |
| $c_7, c_8, c_{11}$ | $u^{18} + 5u^{17} + \cdots - 9u + 1$ |
| $c_{10}, c_{12}$ | $u^{18} - 5u^{17} + \cdots - 497u + 49$ |

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $y^{18} + 134y^{17} + \cdots - 240078y + 1$ |
| $c_2, c_4$ | $y^{18} - 10y^{17} + \cdots - 526y + 1$ |
| $c_3, c_6$ | $y^{18} + 48y^{17} + \cdots - 81920y + 4096$ |
| $c_5, c_9$ | $y^{18} - 63y^{17} + \cdots - 3014656y + 262144$ |
| $c_7, c_8, c_{11}$ | $y^{18} + 13y^{17} + \cdots - 109y + 1$ |
| $c_{10}, c_{12}$ | $y^{18} - 47y^{17} + \cdots - 257005y + 2401$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I^u_1$ | $\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = -0.405109 + 0.770998I$<br>$a = -0.291015 - 0.772728I$<br>$b = 1.202570 + 0.386446I$ | $-1.63880 - 0.39759I$ | $1.43515 + 1.37331I$ |
| $u = -0.405109 - 0.770998I$<br>$a = -0.291015 + 0.772728I$<br>$b = 1.202570 - 0.386446I$ | $-1.63880 + 0.39759I$ | $1.43515 - 1.37331I$ |
| $u = 0.725373 + 0.450694I$<br>$a = -1.51182 - 2.82088I$<br>$b = 0.43981 + 1.86757I$ | $4.14833 - 1.63757I$ | $3.60384 - 0.80616I$ |
| $u = 0.725373 - 0.450694I$<br>$a = -1.51182 + 2.82088I$<br>$b = 0.43981 - 1.86757I$ | $4.14833 + 1.63757I$ | $3.60384 + 0.80616I$ |
| $u = 1.194030 + 0.232985I$<br>$a = 1.74711 - 4.55330I$<br>$b = -1.67536 + 2.69388I$ | $-16.4086 + 6.1635I$ | $4.05351 - 2.26793I$ |
| $u = 1.194030 - 0.232985I$<br>$a = 1.74711 + 4.55330I$<br>$b = -1.67536 - 2.69388I$ | $-16.4086 - 6.1635I$ | $4.05351 + 2.26793I$ |
| $u = 0.360607 + 1.183990I$<br>$a = 0.448733 + 1.258690I$<br>$b = 0.550074 - 0.990997I$ | $1.63305 + 5.70935I$ | $3.81042 - 6.18784I$ |
| $u = 0.360607 - 1.183990I$<br>$a = 0.448733 - 1.258690I$<br>$b = 0.550074 + 0.990997I$ | $1.63305 - 5.70935I$ | $3.81042 + 6.18784I$ |
| $u = -0.110512 + 1.276710I$<br>$a = -0.353124 - 0.089950I$<br>$b = -0.038877 + 0.478514I$ | $-3.23015 - 1.96870I$ | $3.57157 + 3.68129I$ |
| $u = -0.110512 - 1.276710I$<br>$a = -0.353124 + 0.089950I$<br>$b = -0.038877 - 0.478514I$ | $-3.23015 + 1.96870I$ | $3.57157 - 3.68129I$ |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.250746+1.287460I$<br>$a=-1.43169+2.15528I$<br>$b=-0.532012-0.309792I$ | $-4.27182-2.53682I$ | $-10.79254+3.39126I$ |
| $u=-0.250746-1.287460I$<br>$a=-1.43169-2.15528I$<br>$b=-0.532012+0.309792I$ | $-4.27182+2.53682I$ | $-10.79254-3.39126I$ |
| $u=-0.456369$<br>$a=-0.475415$<br>$b=-0.212377$ | $0.789107$ | $12.7820$ |
| $u=\ \ 0.48335+1.48077I$<br>$a=-0.44539-2.81436I$<br>$b=-1.31271+2.12200I$ | $17.6239+12.0475I$ | $1.51476-4.65853I$ |
| $u=\ \ 0.48335-1.48077I$<br>$a=-0.44539+2.81436I$<br>$b=-1.31271-2.12200I$ | $17.6239-12.0475I$ | $1.51476+4.65853I$ |
| $u=\ \ 0.77938+1.42726I$<br>$a=\ \ 2.16835+3.72673I$<br>$b=-0.76484-3.84358I$ | $19.6304+0.9404I$ | $2.54501-0.81034I$ |
| $u=\ \ 0.77938-1.42726I$<br>$a=\ \ 2.16835-3.72673I$<br>$b=-0.76484+3.84358I$ | $19.6304-0.9404I$ | $2.54501+0.81034I$ |
| $u=-0.0963755$<br>$a=\ \ 7.81308$<br>$b=\ \ 0.475099$ | $-1.21816$ | $-10.2650$ |

**II.**

$$\boldsymbol{I_2^u = \langle au - u^2 + b + a + u + 1,\ -2u^2a + a^2 - 2au + 4u^2 - a + 8,\ u^3 + u^2 + 2u + 1\rangle}$$

**(i) Arc colorings**

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

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

**(iii) Cusp Shapes** $= u^2a - 10au + 11u^2 - 4a$

**(iv) u-Polynomials at the component**

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

**(v) Riley Polynomials at the component**

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

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_2^u$ | $\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.215080+1.307140I$<br>$a=-1.06984+1.06527I$<br>$b=-0.215080-1.307140I$ | $-\ 5.65624I$ | $-0.00556+4.66003I$ |
| $u=-0.215080+1.307140I$<br>$a=-1.68504+0.42445I$<br>$b=-0.569840$ | $-4.13758-2.82812I$ | $-6.5820+15.2977I$ |
| $u=-0.215080-1.307140I$<br>$a=-1.06984-1.06527I$<br>$b=-0.215080+1.307140I$ | $5.65624I$ | $-0.00556-4.66003I$ |
| $u=-0.215080-1.307140I$<br>$a=-1.68504-0.42445I$<br>$b=-0.569840$ | $-4.13758+2.82812I$ | $-6.5820-15.2977I$ |
| $u=-0.569840$<br>$a=\ \ 0.25488+3.03873I$<br>$b=-0.215080-1.307140I$ | $4.13758-2.82812I$ | $4.08755+6.14773I$ |
| $u=-0.569840$<br>$a=\ \ 0.25488-3.03873I$<br>$b=-0.215080+1.307140I$ | $4.13758+2.82812I$ | $4.08755-6.14773I$ |

**III.**

$$\boldsymbol{I_3^u = \langle b,\ u^5 - 2u^4 + 4u^3 - 4u^2 + a + 3u - 2,\ u^6 - u^5 + 3u^4 - 2u^3 + 2u^2 - u - 1\rangle}$$

**(i) Arc colorings**

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

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u^5 + 2u^4 - 4u^3 + 4u^2 - 3u + 2 \\ 0 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^5 + 2u^4 - 4u^3 + 4u^2 - 3u + 2 \\ 0 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^5 + 2u^3 + u \\ -u^5 + u^4 - 2u^3 + u^2 - u - 1 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} -u^5 - 2u^3 - u \\ u^5 - u^4 + 2u^3 - u^2 + u + 1 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^4 - 2u^3 + 4u^2 - 2u + 2 \\ -u^5 + u^4 - 2u^3 + u^2 - u - 1 \end{pmatrix}$$

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

**(iii) Cusp Shapes** $= -u^5 + 7u^4 - 13u^3 + 20u^2 - 15u + 13$

**(iv) u-Polynomials at the component**

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

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1, c_2, c_4$ | $(y-1)^6$ |
| $c_3, c_6$ | $y^6$ |
| $c_5, c_9, c_{10}$ $c_{12}$ | $y^6 - 7y^5 + 17y^4 - 16y^3 + 6y^2 - 5y + 1$ |
| $c_7, c_8, c_{11}$ | $y^6 + 5y^5 + 9y^4 + 4y^3 - 6y^2 - 5y + 1$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_3^u$ | $\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.873214$<br>$a = 0.422181$<br>$b = 0$ | $6.01515$ | $10.0580$ |
| $u = -0.138835 + 1.234450I$<br>$a = -0.26610 + 1.72116I$<br>$b = 0$ | $-4.60518 - 1.97241I$ | $-6.63014 + 2.86834I$ |
| $u = -0.138835 - 1.234450I$<br>$a = -0.26610 - 1.72116I$<br>$b = 0$ | $-4.60518 + 1.97241I$ | $-6.63014 - 2.86834I$ |
| $u = 0.408802 + 1.276380I$<br>$a = 0.417699 - 0.090629I$<br>$b = 0$ | $2.05064 + 4.59213I$ | $5.72906 - 1.01197I$ |
| $u = 0.408802 - 1.276380I$<br>$a = 0.417699 + 0.090629I$<br>$b = 0$ | $2.05064 - 4.59213I$ | $5.72906 + 1.01197I$ |
| $u = -0.413150$<br>$a = 4.27462$<br>$b = 0$ | $-0.906083$ | $23.7440$ |

## IV. $I_4^u = \langle b - u,\ u^2 + a + u + 1,\ u^3 + u^2 + 2u + 1 \rangle$

**(i) Arc colorings**

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

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

**(iii) Cusp Shapes** $= -4u^2 - 3u - 4$

**(iv) u-Polynomials at the component**

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

**(v) Riley Polynomials at the component**

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

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_4^u$ | $\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.215080+1.307140I$<br>$a=\quad 0.877439-0.744862I$<br>$b=-0.215080+1.307140I$ | 0 | $3.29468-1.67231I$ |
| $u=-0.215080-1.307140I$<br>$a=\quad 0.877439+0.744862I$<br>$b=-0.215080-1.307140I$ | 0 | $3.29468+1.67231I$ |
| $u=-0.569840$<br>$a=-0.754878$<br>$b=-0.569840$ | 0 | $-3.58940$ |

## V. u-Polynomials

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $((u-1)^6)(u^3-u^2+2u-1)^3(u^{18}+10u^{17}+\cdots+526u+1)$ |
| $c_2$ | $((u-1)^6)(u^3+u^2-1)^3(u^{18}-10u^{17}+\cdots+14u+1)$ |
| $c_3$ | $u^6(u^3-u^2+2u-1)^3(u^{18}-4u^{17}+\cdots+256u-64)$ |
| $c_4$ | $((u+1)^6)(u^3-u^2+1)^3(u^{18}-10u^{17}+\cdots+14u+1)$ |
| $c_5$ | $u^9(u^6+u^5+\cdots-u-1)(u^{18}+9u^{17}+\cdots-2048u-512)$ |
| $c_6$ | $u^6(u^3+u^2+2u+1)^3(u^{18}-4u^{17}+\cdots+256u-64)$ |
| $c_7, c_8$ | $(u^3+u^2+2u+1)^3(u^6-u^5+3u^4-2u^3+2u^2-u-1)$ $\cdot(u^{18}+5u^{17}+\cdots-9u+1)$ |
| $c_9$ | $u^9(u^6-u^5+\cdots+u-1)(u^{18}+9u^{17}+\cdots-2048u-512)$ |
| $c_{10}, c_{12}$ | $(u^3+u^2-1)^3(u^6-u^5-3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{18}-5u^{17}+\cdots-497u+49)$ |
| $c_{11}$ | $(u^3-u^2+2u-1)^3(u^6+u^5+3u^4+2u^3+2u^2+u-1)$ $\cdot(u^{18}+5u^{17}+\cdots-9u+1)$ |

## VI. Riley Polynomials

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $((y-1)^6)(y^3+3y^2+2y-1)^3(y^{18}+134y^{17}+\cdots-240078y+1)$ |
| $c_2, c_4$ | $((y-1)^6)(y^3-y^2+2y-1)^3(y^{18}-10y^{17}+\cdots-526y+1)$ |
| $c_3, c_6$ | $y^6(y^3+3y^2+2y-1)^3(y^{18}+48y^{17}+\cdots-81920y+4096)$ |
| $c_5, c_9$ | $y^9(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot(y^{18}-63y^{17}+\cdots-3014656y+262144)$ |
| $c_7, c_8, c_{11}$ | $(y^3+3y^2+2y-1)^3(y^6+5y^5+9y^4+4y^3-6y^2-5y+1)$ $\cdot(y^{18}+13y^{17}+\cdots-109y+1)$ |
| $c_{10}, c_{12}$ | $(y^3-y^2+2y-1)^3(y^6-7y^5+17y^4-16y^3+6y^2-5y+1)$ $\cdot(y^{18}-47y^{17}+\cdots-257005y+2401)$ |