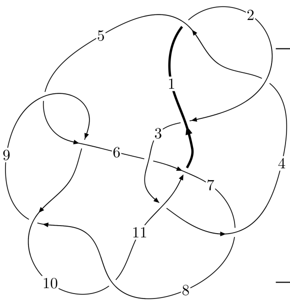
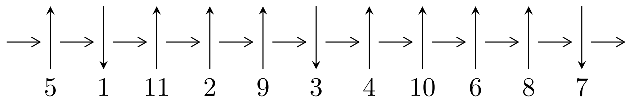
$11a_{27}$ $(K11a_{27})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & -5.81141 \times 10^{45} u^{72} - 2.55560 \times 10^{45} u^{71} + \cdots + 5.58876 \times 10^{45} b + 1.50088 \times 10^{46}, \\ & 1.50317 \times 10^{47} u^{72} + 3.46308 \times 10^{47} u^{71} + \cdots + 5.58876 \times 10^{45} a + 2.41035 \times 10^{47},\ u^{73} + 3u^{72} + \cdots + 8u + 1 \\ I_2^u = \langle & b + a + 1,\ a^2 + 3a + 3,\ u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 75 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.

$\boldsymbol{I_1^u = \langle -5.81\times10^{45}u^{72} - 2.56\times10^{45}u^{71} + \cdots + 5.59\times10^{45}b + 1.50\times10^{46},\ 1.50\times10^{47}u^{72} + 3.46\times10^{47}u^{71} + \cdots + 5.59\times10^{45}a + 2.41\times10^{47},\ u^{73} + 3u^{72} + \cdots + 8u + 1\rangle}$

(i) Arc colorings

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-26.8963u^{72} - 61.9652u^{71} + \cdots - 262.686u - 43.1285\\1.03984u^{72} + 0.457276u^{71} + \cdots - 8.76067u - 2.68554\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}u\\-u^3 + u\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-27.9361u^{72} - 62.4224u^{71} + \cdots - 253.925u - 40.4429\\1.03984u^{72} + 0.457276u^{71} + \cdots - 8.76067u - 2.68554\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-55.1885u^{72} - 128.039u^{71} + \cdots - 541.292u - 84.5791\\-0.557631u^{72} - 3.16857u^{71} + \cdots - 25.1345u - 4.27345\end{pmatrix}$$
$$a_4 = \begin{pmatrix}52.9421u^{72} + 122.525u^{71} + \cdots + 513.869u + 80.0761\\-0.291491u^{72} + 0.944537u^{71} + \cdots + 12.7180u + 2.20055\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-u^3\\u^5 - u^3 + u\end{pmatrix}$$
$$a_7 = \begin{pmatrix}54.1305u^{72} + 120.249u^{71} + \cdots + 492.164u + 73.9005\\-11.1367u^{72} - 24.4194u^{71} + \cdots - 88.7848u - 13.4461\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^5 + u\\-u^7 + u^5 - 2u^3 + u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}u^5 + u\\-u^7 + u^5 - 2u^3 + u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -73.5210u^{72} - 182.862u^{71} + \cdots - 811.040u - 125.700$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_4	$u^{73} + 2u^{72} + \cdots + 7u - 1$
c_2	$u^{73} + 32u^{72} + \cdots + 131u - 1$
c_3	$u^{73} + 7u^{72} + \cdots + 12u + 4$
c_5, c_9	$u^{73} - 3u^{72} + \cdots + 8u - 1$
c_6	$u^{73} + 34u^{71} + \cdots - 149u - 41$
c_7	$u^{73} - 2u^{72} + \cdots - 784u - 224$
c_8, c_{10}	$u^{73} - 23u^{72} + \cdots - 2u - 1$
c_{11}	$u^{73} - 7u^{72} + \cdots - u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_4	$y^{73} + 32y^{72} + \cdots + 131y - 1$
c_2	$y^{73} + 20y^{72} + \cdots + 19907y - 1$
c_3	$y^{73} + 15y^{72} + \cdots - 344y - 16$
c_5, c_9	$y^{73} - 23y^{72} + \cdots - 2y - 1$
c_6	$y^{73} + 68y^{72} + \cdots - 11173y - 1681$
c_7	$y^{73} + 84y^{72} + \cdots - 1858304y - 50176$
c_8, c_{10}	$y^{73} + 57y^{72} + \cdots + 254y - 1$
c_{11}	$y^{73} + 5y^{72} + \cdots - 2y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.872133 + 0.330890I$ $a = 0.347576 - 0.582681I$ $b = -0.093427 - 1.105170I$	$-1.56864 + 4.14463I$	$0. - 8.01358I$
$u = 0.872133 - 0.330890I$ $a = 0.347576 + 0.582681I$ $b = -0.093427 + 1.105170I$	$-1.56864 - 4.14463I$	$0. + 8.01358I$
$u = -0.827433 + 0.687248I$ $a = -0.757692 - 0.116396I$ $b = -0.903670 - 0.847810I$	$-0.261500 + 0.649592I$	0
$u = -0.827433 - 0.687248I$ $a = -0.757692 + 0.116396I$ $b = -0.903670 + 0.847810I$	$-0.261500 - 0.649592I$	0
$u = 0.917251 + 0.028799I$ $a = 0.957675 + 0.465286I$ $b = -0.899692 - 0.482863I$	$4.06916 + 1.66774I$	$17.5628 - 3.8525I$
$u = 0.917251 - 0.028799I$ $a = 0.957675 - 0.465286I$ $b = -0.899692 + 0.482863I$	$4.06916 - 1.66774I$	$17.5628 + 3.8525I$
$u = 0.744709 + 0.796357I$ $a = -0.254774 + 0.121438I$ $b = 0.525153 + 0.176233I$	$-3.74839 + 1.23253I$	0
$u = 0.744709 - 0.796357I$ $a = -0.254774 - 0.121438I$ $b = 0.525153 - 0.176233I$	$-3.74839 - 1.23253I$	0
$u = -0.797947 + 0.753369I$ $a = -0.64416 - 1.83433I$ $b = -0.572115 - 1.246620I$	$-3.09906 + 2.70236I$	0
$u = -0.797947 - 0.753369I$ $a = -0.64416 + 1.83433I$ $b = -0.572115 + 1.246620I$	$-3.09906 - 2.70236I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.077830 + 0.219114I$ $a = -0.690643 + 0.625004I$ $b = 0.817817 - 0.515578I$	$4.44539 + 5.47964I$	0
$u = 1.077830 - 0.219114I$ $a = -0.690643 - 0.625004I$ $b = 0.817817 + 0.515578I$	$4.44539 - 5.47964I$	0
$u = 0.887299 + 0.116247I$ $a = 1.69631 - 0.07268I$ $b = -0.704741 - 1.080540I$	$2.29836 + 4.22810I$	$12.1430 - 9.3439I$
$u = 0.887299 - 0.116247I$ $a = 1.69631 + 0.07268I$ $b = -0.704741 + 1.080540I$	$2.29836 - 4.22810I$	$12.1430 + 9.3439I$
$u = -0.880598 + 0.669028I$ $a = -0.700925 + 0.813755I$ $b = -0.964342 - 0.090780I$	$0.69933 - 2.58301I$	0
$u = -0.880598 - 0.669028I$ $a = -0.700925 - 0.813755I$ $b = -0.964342 + 0.090780I$	$0.69933 + 2.58301I$	0
$u = 0.875902 + 0.690173I$ $a = -0.191233 + 0.289860I$ $b = -0.386326 - 0.616731I$	$-2.40217 + 4.04097I$	0
$u = 0.875902 - 0.690173I$ $a = -0.191233 - 0.289860I$ $b = -0.386326 + 0.616731I$	$-2.40217 - 4.04097I$	0
$u = 0.668112 + 0.895781I$ $a = -0.28502 - 1.45618I$ $b = 0.465696 - 1.063540I$	$-6.08025 - 2.66865I$	0
$u = 0.668112 - 0.895781I$ $a = -0.28502 + 1.45618I$ $b = 0.465696 + 1.063540I$	$-6.08025 + 2.66865I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.720415 + 0.855626I$ $a = 0.314675 - 0.528100I$ $b = 0.910054 - 0.387571I$	$-2.75982 + 5.17856I$	0
$u = -0.720415 - 0.855626I$ $a = 0.314675 + 0.528100I$ $b = 0.910054 + 0.387571I$	$-2.75982 - 5.17856I$	0
$u = 0.876241 + 0.702164I$ $a = -0.81649 - 1.39051I$ $b = -0.484219 + 0.695912I$	$-2.39394 + 1.31325I$	0
$u = 0.876241 - 0.702164I$ $a = -0.81649 + 1.39051I$ $b = -0.484219 - 0.695912I$	$-2.39394 - 1.31325I$	0
$u = 0.846597 + 0.756952I$ $a = 0.55091 + 3.03768I$ $b = -0.468658 + 0.954426I$	$-3.36772 + 0.28806I$	0
$u = 0.846597 - 0.756952I$ $a = 0.55091 - 3.03768I$ $b = -0.468658 - 0.954426I$	$-3.36772 - 0.28806I$	0
$u = -1.070550 + 0.396975I$ $a = -1.34075 - 0.70080I$ $b = 0.606073 - 0.641390I$	$3.44487 - 1.41386I$	0
$u = -1.070550 - 0.396975I$ $a = -1.34075 + 0.70080I$ $b = 0.606073 + 0.641390I$	$3.44487 + 1.41386I$	0
$u = -0.853435$ $a = -0.672147$ $b = -0.0841487$	1.41721	6.25420
$u = -0.914329 + 0.693377I$ $a = 0.55780 + 1.40502I$ $b = -0.961681 + 0.764182I$	$0.01661 - 5.97370I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.914329-0.693377I$ $a=\ \ 0.55780-1.40502I$ $b=-0.961681-0.764182I$	$0.01661+5.97370I$	0
$u=-0.720406+0.896299I$ $a=-0.02381+1.65621I$ $b=\ \ 0.636841+1.154700I$	$-5.08354+10.84060I$	0
$u=-0.720406-0.896299I$ $a=-0.02381-1.65621I$ $b=\ \ 0.636841-1.154700I$	$-5.08354-10.84060I$	0
$u=\ \ 1.123670+0.265577I$ $a=-1.65424+0.52442I$ $b=\ \ 0.645150+1.076090I$	$2.75520+10.95230I$	0
$u=\ \ 1.123670-0.265577I$ $a=-1.65424-0.52442I$ $b=\ \ 0.645150-1.076090I$	$2.75520-10.95230I$	0
$u=-0.797794+0.839281I$ $a=-0.62268-2.20338I$ $b=\ \ 0.105796-1.302560I$	$-8.72144+2.03741I$	0
$u=-0.797794-0.839281I$ $a=-0.62268+2.20338I$ $b=\ \ 0.105796+1.302560I$	$-8.72144-2.03741I$	0
$u=-0.056905+0.832963I$ $a=-0.18731-1.57099I$ $b=\ \ 0.574495-1.065490I$	$-1.24065-7.33132I$	$0.88010+7.59105I$
$u=-0.056905-0.832963I$ $a=-0.18731+1.57099I$ $b=\ \ 0.574495+1.065490I$	$-1.24065+7.33132I$	$0.88010-7.59105I$
$u=\ \ 0.905677+0.743212I$ $a=\ \ 2.49650-3.26714I$ $b=-0.502055-0.950824I$	$-3.18426+5.39888I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.905677 - 0.743212I$ $a = 2.49650 + 3.26714I$ $b = -0.502055 + 0.950824I$	$-3.18426 - 5.39888I$	0
$u = -0.938472 + 0.730607I$ $a = 1.29738 + 2.34162I$ $b = -0.629103 + 1.251780I$	$-2.67029 - 8.34069I$	0
$u = -0.938472 - 0.730607I$ $a = 1.29738 - 2.34162I$ $b = -0.629103 - 1.251780I$	$-2.67029 + 8.34069I$	0
$u = -0.806104 + 0.030256I$ $a = 5.61862 - 2.98084I$ $b = -0.522576 + 0.858340I$	$1.30311 - 2.11076I$	$-42.0323 - 9.8539I$
$u = -0.806104 - 0.030256I$ $a = 5.61862 + 2.98084I$ $b = -0.522576 - 0.858340I$	$1.30311 + 2.11076I$	$-42.0323 + 9.8539I$
$u = -1.190620 + 0.080673I$ $a = -1.223050 - 0.005386I$ $b = 0.407136 - 0.888931I$	$1.11279 - 1.68465I$	0
$u = -1.190620 - 0.080673I$ $a = -1.223050 + 0.005386I$ $b = 0.407136 + 0.888931I$	$1.11279 + 1.68465I$	0
$u = -1.160110 + 0.331877I$ $a = -0.225821 - 0.129343I$ $b = 0.563847 + 0.978910I$	$2.41837 + 3.22713I$	0
$u = -1.160110 - 0.331877I$ $a = -0.225821 + 0.129343I$ $b = 0.563847 - 0.978910I$	$2.41837 - 3.22713I$	0
$u = 0.824162 + 0.902915I$ $a = -0.54627 + 1.78979I$ $b = 0.371133 + 1.036080I$	$-6.72947 + 4.09633I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.824162 - 0.902915I$ $a = -0.54627 - 1.78979I$ $b = 0.371133 - 1.036080I$	$-6.72947 - 4.09633I$	0
$u = 0.992368 + 0.723251I$ $a = -0.057932 + 0.453335I$ $b = 0.527464 - 0.346793I$	$-2.97910 + 4.50576I$	0
$u = 0.992368 - 0.723251I$ $a = -0.057932 - 0.453335I$ $b = 0.527464 + 0.346793I$	$-2.97910 - 4.50576I$	0
$u = -0.967923 + 0.779823I$ $a = 1.03339 + 1.85240I$ $b = 0.064735 + 1.326810I$	$-8.19243 - 8.08051I$	0
$u = -0.967923 - 0.779823I$ $a = 1.03339 - 1.85240I$ $b = 0.064735 - 1.326810I$	$-8.19243 + 8.08051I$	0
$u = -1.016430 + 0.755785I$ $a = 0.517773 - 0.711242I$ $b = 0.940848 + 0.419552I$	$-1.84899 - 11.18430I$	0
$u = -1.016430 - 0.755785I$ $a = 0.517773 + 0.711242I$ $b = 0.940848 - 0.419552I$	$-1.84899 + 11.18430I$	0
$u = -0.113221 + 0.709986I$ $a = 0.039506 + 0.618995I$ $b = 0.666738 + 0.436647I$	$0.57464 - 2.49330I$	$4.09751 + 3.36278I$
$u = -0.113221 - 0.709986I$ $a = 0.039506 - 0.618995I$ $b = 0.666738 - 0.436647I$	$0.57464 + 2.49330I$	$4.09751 - 3.36278I$
$u = 0.973348 + 0.835610I$ $a = 0.473684 - 1.300630I$ $b = 0.312134 - 1.005540I$	$-6.25965 + 2.30457I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.973348 - 0.835610I$ $a = 0.473684 + 1.300630I$ $b = 0.312134 + 1.005540I$	$-6.25965 - 2.30457I$	0
$u = 0.215926 + 0.677273I$ $a = -0.84700 + 1.57866I$ $b = 0.190301 + 1.027280I$	$-3.66692 - 0.65369I$	$-3.56200 + 0.87256I$
$u = 0.215926 - 0.677273I$ $a = -0.84700 - 1.57866I$ $b = 0.190301 - 1.027280I$	$-3.66692 + 0.65369I$	$-3.56200 - 0.87256I$
$u = -1.034210 + 0.773016I$ $a = -1.54749 - 2.00996I$ $b = 0.658496 - 1.157870I$	$-4.1062 - 17.0192I$	0
$u = -1.034210 - 0.773016I$ $a = -1.54749 + 2.00996I$ $b = 0.658496 + 1.157870I$	$-4.1062 + 17.0192I$	0
$u = 1.058980 + 0.756530I$ $a = -1.57025 + 1.58679I$ $b = 0.518936 + 1.050430I$	$-4.88061 + 8.78731I$	0
$u = 1.058980 - 0.756530I$ $a = -1.57025 - 1.58679I$ $b = 0.518936 - 1.050430I$	$-4.88061 - 8.78731I$	0
$u = -0.435959 + 0.300456I$ $a = -1.39456 + 1.09197I$ $b = -0.359968 + 0.467827I$	$0.76514 - 1.25127I$	$5.38460 + 5.06088I$
$u = -0.435959 - 0.300456I$ $a = -1.39456 - 1.09197I$ $b = -0.359968 - 0.467827I$	$0.76514 + 1.25127I$	$5.38460 - 5.06088I$
$u = -0.447418 + 0.138876I$ $a = -2.53496 - 1.47336I$ $b = -0.487905 - 0.725427I$	$0.75785 + 1.41365I$	$4.07014 - 4.97652I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.447418-0.138876I$ $a=-2.53496+1.47336I$ $b=-0.487905+0.725427I$	$0.75785-1.41365I$	$4.07014+4.97652I$
$u=-0.036644+0.286524I$ $a=-1.94866+1.84629I$ $b=-0.526291+0.983825I$	$-0.16446-2.80927I$	$2.04943+2.04126I$
$u=-0.036644-0.286524I$ $a=-1.94866-1.84629I$ $b=-0.526291-0.983825I$	$-0.16446+2.80927I$	$2.04943-2.04126I$

II. $I_2^u = \langle b + a + 1,\ a^2 + 3a + 3,\ u + 1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 4a + 15$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.50000 + 0.86603I$ $b = \quad 0.500000 - 0.866025I$	$1.64493 - 2.02988I$	$9.00000 + 3.46410I$
$u = -1.00000$ $a = -1.50000 - 0.86603I$ $b = \quad 0.500000 + 0.866025I$	$1.64493 + 2.02988I$	$9.00000 - 3.46410I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^2+u+1)(u^{73}+2u^{72}+\cdots+7u-1)$
c_2	$(u^2+u+1)(u^{73}+32u^{72}+\cdots+131u-1)$
c_3	$u^2(u^{73}+7u^{72}+\cdots+12u+4)$
c_4	$(u^2-u+1)(u^{73}+2u^{72}+\cdots+7u-1)$
c_5	$((u+1)^2)(u^{73}-3u^{72}+\cdots+8u-1)$
c_6	$(u^2-u+1)(u^{73}+34u^{71}+\cdots-149u-41)$
c_7	$(u^2-u+1)(u^{73}-2u^{72}+\cdots-784u-224)$
c_8	$((u+1)^2)(u^{73}-23u^{72}+\cdots-2u-1)$
c_9	$((u-1)^2)(u^{73}-3u^{72}+\cdots+8u-1)$
c_{10}	$((u-1)^2)(u^{73}-23u^{72}+\cdots-2u-1)$
c_{11}	$((u-1)^2)(u^{73}-7u^{72}+\cdots-u^2-1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_4	$(y^2 + y + 1)(y^{73} + 32y^{72} + \cdots + 131y - 1)$
c_2	$(y^2 + y + 1)(y^{73} + 20y^{72} + \cdots + 19907y - 1)$
c_3	$y^2(y^{73} + 15y^{72} + \cdots - 344y - 16)$
c_5, c_9	$((y - 1)^2)(y^{73} - 23y^{72} + \cdots - 2y - 1)$
c_6	$(y^2 + y + 1)(y^{73} + 68y^{72} + \cdots - 11173y - 1681)$
c_7	$(y^2 + y + 1)(y^{73} + 84y^{72} + \cdots - 1858304y - 50176)$
c_8, c_{10}	$((y - 1)^2)(y^{73} + 57y^{72} + \cdots + 254y - 1)$
c_{11}	$((y - 1)^2)(y^{73} + 5y^{72} + \cdots - 2y - 1)$