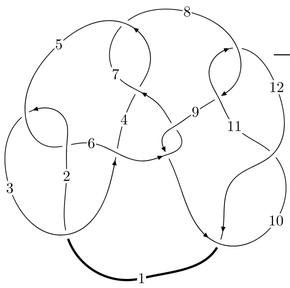
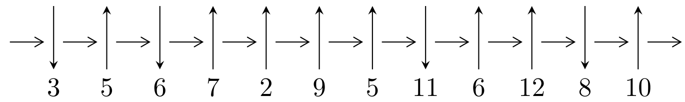
$12n_{0017}$ $(K12n_{0017})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -4.18594 \times 10^{34} u^{52} - 2.07414 \times 10^{35} u^{51} + \cdots + 1.22009 \times 10^{34} b + 4.27515 \times 10^{34},$$
$$- 5.11228 \times 10^{32} u^{52} - 1.97357 \times 10^{33} u^{51} + \cdots + 1.82103 \times 10^{32} a - 9.15657 \times 10^{32},\ u^{53} + 5u^{52} + \cdots - 9u -$$
$$I_2^u = \langle -a^3 u - a^3 - 3a^2 - au + 3b + 2a + u + 4,\ a^4 - a^3 u + 3a^3 - a^2 u + a^2 - 4a - u - 3,\ u^2 - u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 61 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.

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$\boldsymbol{I_1^u = \langle -4.19\times10^{34}u^{52} - 2.07\times10^{35}u^{51} + \cdots + 1.22\times10^{34}b + 4.28\times10^{34},\ -5.11\times10^{32}u^{52} - 1.97\times10^{33}u^{51} + \cdots + 1.82\times10^{32}a - 9.16\times10^{32},\ u^{53} + 5u^{52} + \cdots - 9u - 1\rangle}$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u \\ u^3 + u \end{pmatrix}$$
$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 2.80735u^{52} + 10.8376u^{51} + \cdots - 0.444267u + 5.02822 \\ 3.43084u^{52} + 16.9999u^{51} + \cdots - 34.1145u - 3.50395 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -0.623488u^{52} - 6.16226u^{51} + \cdots + 33.6702u + 8.53217 \\ 3.43084u^{52} + 16.9999u^{51} + \cdots - 34.1145u - 3.50395 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -1.75032u^{52} - 0.890320u^{51} + \cdots - 10.7679u - 3.13567 \\ -6.83122u^{52} - 35.1862u^{51} + \cdots + 71.7880u + 8.58154 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1.59554u^{52} + 9.62066u^{51} + \cdots - 7.98101u - 2.41540 \\ -1.76578u^{52} - 8.80291u^{51} + \cdots + 19.1693u + 2.36325 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} 4.55627u^{52} + 20.9187u^{51} + \cdots - 49.1860u - 2.25218 \\ 1.76578u^{52} + 8.80291u^{51} + \cdots - 19.1693u - 2.36325 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1.71105u^{52} + 5.75864u^{51} + \cdots - 19.5378u + 3.68527 \\ 2.74059u^{52} + 13.6878u^{51} + \cdots - 30.0115u - 3.36198 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -5.35104u^{52} - 25.5532u^{51} + \cdots + 78.3747u + 11.0743$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{53} + 15u^{52} + \cdots - 9u - 1$
c_2, c_5	$u^{53} + 5u^{52} + \cdots - 9u - 1$
c_3	$u^{53} - 5u^{52} + \cdots - 2302791u - 148289$
c_4, c_7	$u^{53} + 5u^{52} + \cdots - 1664u - 256$
c_6, c_9	$u^{53} + 3u^{52} + \cdots - 3u - 1$
c_8, c_{11}	$u^{53} - 3u^{52} + \cdots + 5u - 1$
c_{10}, c_{12}	$u^{53} - 21u^{52} + \cdots - u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{53} + 51y^{52} + \cdots - 4269y - 1$
c_2, c_5	$y^{53} + 15y^{52} + \cdots - 9y - 1$
c_3	$y^{53} + 87y^{52} + \cdots - 708900293913y - 21989627521$
c_4, c_7	$y^{53} - 45y^{52} + \cdots - 606208y - 65536$
c_6, c_9	$y^{53} + 5y^{52} + \cdots - y - 1$
c_8, c_{11}	$y^{53} + 21y^{52} + \cdots - y - 1$
c_{10}, c_{12}	$y^{53} + 25y^{52} + \cdots - 77y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.530308 + 0.891641I$ $a = -1.41610 - 2.34002I$ $b = -0.227413 + 0.365967I$	$0.156968 + 0.305979I$	$-9.1267 + 31.8061I$
$u = 0.530308 - 0.891641I$ $a = -1.41610 + 2.34002I$ $b = -0.227413 - 0.365967I$	$0.156968 - 0.305979I$	$-9.1267 - 31.8061I$
$u = 0.550027 + 0.789290I$ $a = 0.66997 + 2.28557I$ $b = 0.074147 - 0.510318I$	$0.47806 + 4.00723I$	$-10.14274 - 8.52943I$
$u = 0.550027 - 0.789290I$ $a = 0.66997 - 2.28557I$ $b = 0.074147 + 0.510318I$	$0.47806 - 4.00723I$	$-10.14274 + 8.52943I$
$u = 0.290660 + 0.872671I$ $a = -1.38678 - 1.24113I$ $b = -0.646642 + 0.233451I$	$-0.90313 + 4.01726I$	$5.20804 - 5.06978I$
$u = 0.290660 - 0.872671I$ $a = -1.38678 + 1.24113I$ $b = -0.646642 - 0.233451I$	$-0.90313 - 4.01726I$	$5.20804 + 5.06978I$
$u = 1.056180 + 0.236014I$ $a = -0.594933 - 0.033166I$ $b = -0.768107 - 0.046948I$	$3.64081 + 3.04661I$	$13.4424 - 4.7932I$
$u = 1.056180 - 0.236014I$ $a = -0.594933 + 0.033166I$ $b = -0.768107 + 0.046948I$	$3.64081 - 3.04661I$	$13.4424 + 4.7932I$
$u = 0.657790 + 0.921515I$ $a = -1.023740 + 0.420502I$ $b = -0.553170 - 0.255009I$	$0.62571 + 2.57123I$	0
$u = 0.657790 - 0.921515I$ $a = -1.023740 - 0.420502I$ $b = -0.553170 + 0.255009I$	$0.62571 - 2.57123I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.169703 + 0.847189I$ $a = -0.573410 - 1.128960I$ $b = 0.220478 + 0.766514I$	$-1.59631 + 1.76854I$	$-2.74640 - 4.48451I$
$u = 0.169703 - 0.847189I$ $a = -0.573410 + 1.128960I$ $b = 0.220478 - 0.766514I$	$-1.59631 - 1.76854I$	$-2.74640 + 4.48451I$
$u = -0.359167 + 0.783757I$ $a = -1.60327 + 0.04327I$ $b = -0.01818 + 1.50451I$	$-7.06670 + 1.57178I$	$-4.33706 - 7.74502I$
$u = -0.359167 - 0.783757I$ $a = -1.60327 - 0.04327I$ $b = -0.01818 - 1.50451I$	$-7.06670 - 1.57178I$	$-4.33706 + 7.74502I$
$u = -0.409008 + 0.741183I$ $a = 1.80767 - 0.00417I$ $b = 0.22475 - 1.53329I$	$-6.87601 - 4.70786I$	$-1.13106 - 3.85165I$
$u = -0.409008 - 0.741183I$ $a = 1.80767 + 0.00417I$ $b = 0.22475 + 1.53329I$	$-6.87601 + 4.70786I$	$-1.13106 + 3.85165I$
$u = -0.923392 + 0.708125I$ $a = 0.826229 + 0.812255I$ $b = 1.15258 + 0.92886I$	$4.90426 + 3.27952I$	0
$u = -0.923392 - 0.708125I$ $a = 0.826229 - 0.812255I$ $b = 1.15258 - 0.92886I$	$4.90426 - 3.27952I$	0
$u = -0.809353 + 0.881663I$ $a = 0.531942 + 0.908624I$ $b = 1.20306 + 1.02356I$	$4.15839 - 1.32183I$	0
$u = -0.809353 - 0.881663I$ $a = 0.531942 - 0.908624I$ $b = 1.20306 - 1.02356I$	$4.15839 + 1.32183I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.963077 + 0.716560I$ $a = 0.748110 - 0.046980I$ $b = 0.724122 + 0.163979I$	$3.13131 + 0.47040I$	0
$u = 0.963077 - 0.716560I$ $a = 0.748110 + 0.046980I$ $b = 0.724122 - 0.163979I$	$3.13131 - 0.47040I$	0
$u = -0.848949 + 0.856511I$ $a = -1.69721 - 0.38788I$ $b = -0.99863 + 1.18800I$	$6.21091 + 1.13505I$	0
$u = -0.848949 - 0.856511I$ $a = -1.69721 + 0.38788I$ $b = -0.99863 - 1.18800I$	$6.21091 - 1.13505I$	0
$u = -0.997021 + 0.686901I$ $a = -0.854814 - 0.725692I$ $b = -1.12564 - 0.93321I$	$7.01799 + 8.93611I$	0
$u = -0.997021 - 0.686901I$ $a = -0.854814 + 0.725692I$ $b = -1.12564 + 0.93321I$	$7.01799 - 8.93611I$	0
$u = -0.800905 + 0.909129I$ $a = 1.72367 + 0.46790I$ $b = 1.04239 - 1.19652I$	$4.07249 - 4.71363I$	0
$u = -0.800905 - 0.909129I$ $a = 1.72367 - 0.46790I$ $b = 1.04239 + 1.19652I$	$4.07249 + 4.71363I$	0
$u = 0.190036 + 1.206100I$ $a = -0.014657 - 0.532586I$ $b = 0.543932 + 0.735641I$	$-2.94216 + 2.73108I$	0
$u = 0.190036 - 1.206100I$ $a = -0.014657 + 0.532586I$ $b = 0.543932 - 0.735641I$	$-2.94216 - 2.73108I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.167242 + 0.748310I$ $a = 1.20707 + 1.23679I$ $b = 0.772219 - 0.132719I$	$-1.23355 - 0.85670I$	$1.99397 + 0.77147I$
$u = 0.167242 - 0.748310I$ $a = 1.20707 - 1.23679I$ $b = 0.772219 + 0.132719I$	$-1.23355 + 0.85670I$	$1.99397 - 0.77147I$
$u = 0.593122 + 1.098860I$ $a = -0.640887 + 0.592926I$ $b = -0.568895 - 0.414061I$	$0.79815 + 2.64733I$	0
$u = 0.593122 - 1.098860I$ $a = -0.640887 - 0.592926I$ $b = -0.568895 + 0.414061I$	$0.79815 - 2.64733I$	0
$u = -0.816554 + 0.945782I$ $a = -0.448825 - 0.835890I$ $b = -1.17212 - 1.05145I$	$5.93083 - 7.33894I$	0
$u = -0.816554 - 0.945782I$ $a = -0.448825 + 0.835890I$ $b = -1.17212 + 1.05145I$	$5.93083 + 7.33894I$	0
$u = -0.938500 + 0.838979I$ $a = -0.667637 - 0.761297I$ $b = -1.15180 - 0.97924I$	$11.01260 + 0.70068I$	0
$u = -0.938500 - 0.838979I$ $a = -0.667637 + 0.761297I$ $b = -1.15180 + 0.97924I$	$11.01260 - 0.70068I$	0
$u = -0.781108 + 1.058600I$ $a = 1.62355 + 0.62236I$ $b = 1.09267 - 1.11554I$	$3.80915 - 9.57151I$	0
$u = -0.781108 - 1.058600I$ $a = 1.62355 - 0.62236I$ $b = 1.09267 + 1.11554I$	$3.80915 + 9.57151I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.855619+1.002320I$ $a=-1.61140-0.52084I$ $b=-1.04937+1.13619I$	$10.48550-7.29514I$	0
$u=-0.855619-1.002320I$ $a=-1.61140+0.52084I$ $b=-1.04937-1.13619I$	$10.48550+7.29514I$	0
$u=0.276293+1.310550I$ $a=-0.145590+0.459150I$ $b=-0.617657-0.677073I$	$-1.79792+7.60628I$	0
$u=0.276293-1.310550I$ $a=-0.145590-0.459150I$ $b=-0.617657+0.677073I$	$-1.79792-7.60628I$	0
$u=0.651246$ $a=0.347416$ $b=0.701762$	1.38715	7.24480
$u=-0.797265+1.097860I$ $a=-1.57835-0.63310I$ $b=-1.08229+1.09516I$	$5.7123-15.4835I$	0
$u=-0.797265-1.097860I$ $a=-1.57835+0.63310I$ $b=-1.08229-1.09516I$	$5.7123+15.4835I$	0
$u=0.884439+1.048670I$ $a=0.701048-0.259116I$ $b=0.705424+0.300411I$	$2.15584+6.28914I$	0
$u=0.884439-1.048670I$ $a=0.701048+0.259116I$ $b=0.705424-0.300411I$	$2.15584-6.28914I$	0
$u=0.289494+0.414333I$ $a=1.16272+2.27371I$ $b=0.033058-0.698327I$	$0.54607-1.46734I$	$1.60005+1.62915I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.289494 - 0.414333I$ $a = 1.16272 - 2.27371I$ $b = 0.033058 + 0.698327I$	$0.54607 + 1.46734I$	$1.60005 - 1.62915I$
$u = -0.107152 + 0.100700I$ $a = 5.08191 + 0.12392I$ $b = 0.340195 - 0.558279I$	$0.33530 - 1.50733I$	$2.98224 + 4.24130I$
$u = -0.107152 - 0.100700I$ $a = 5.08191 - 0.12392I$ $b = 0.340195 + 0.558279I$	$0.33530 + 1.50733I$	$2.98224 - 4.24130I$

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

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -\frac{1}{3}a^3u + \frac{5}{3}a^3 - 3a^2u + 4a^2 + \frac{5}{3}au - \frac{7}{3}a - \frac{17}{3}u + \frac{4}{3}$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_3 c_5	$(y^2+y+1)^4$
c_4, c_7	y^8
c_6, c_9, c_{10} c_{12}	$(y^4+5y^3+7y^2+2y+1)^2$
c_8, c_{11}	$(y^4+y^3+3y^2+2y+1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.500000 + 0.866025I$ $a = -0.715307 - 0.631577I$ $b = -0.395123 + 0.506844I$	$0.211005 + 0.614778I$	$3.64182 - 4.24446I$
$u = 0.500000 + 0.866025I$ $a = 1.248740 + 0.225872I$ $b = -0.10488 + 1.55249I$	$-6.79074 - 1.13408I$	$4.47320 - 4.89165I$
$u = 0.500000 + 0.866025I$ $a = -1.44025 - 0.04422I$ $b = -0.10488 - 1.55249I$	$-6.79074 + 5.19385I$	$1.68800 - 11.53835I$
$u = 0.500000 + 0.866025I$ $a = -1.59319 + 1.31595I$ $b = -0.395123 - 0.506844I$	$0.21101 + 3.44499I$	$-1.30302 - 11.36848I$
$u = 0.500000 - 0.866025I$ $a = -0.715307 + 0.631577I$ $b = -0.395123 - 0.506844I$	$0.211005 - 0.614778I$	$3.64182 + 4.24446I$
$u = 0.500000 - 0.866025I$ $a = 1.248740 - 0.225872I$ $b = -0.10488 - 1.55249I$	$-6.79074 + 1.13408I$	$4.47320 + 4.89165I$
$u = 0.500000 - 0.866025I$ $a = -1.44025 + 0.04422I$ $b = -0.10488 + 1.55249I$	$-6.79074 - 5.19385I$	$1.68800 + 11.53835I$
$u = 0.500000 - 0.866025I$ $a = -1.59319 - 1.31595I$ $b = -0.395123 + 0.506844I$	$0.21101 - 3.44499I$	$-1.30302 + 11.36848I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$((u^2-u+1)^4)(u^{53}+15u^{52}+\cdots-9u-1)$
c_2	$((u^2+u+1)^4)(u^{53}+5u^{52}+\cdots-9u-1)$
c_3	$((u^2-u+1)^4)(u^{53}-5u^{52}+\cdots-2302791u-148289)$
c_4, c_7	$u^8(u^{53}+5u^{52}+\cdots-1664u-256)$
c_5	$((u^2-u+1)^4)(u^{53}+5u^{52}+\cdots-9u-1)$
c_6	$((u^4+u^3+3u^2+2u+1)^2)(u^{53}+3u^{52}+\cdots-3u-1)$
c_8	$((u^4+u^3+u^2+1)^2)(u^{53}-3u^{52}+\cdots+5u-1)$
c_9	$((u^4-u^3+3u^2-2u+1)^2)(u^{53}+3u^{52}+\cdots-3u-1)$
c_{10}	$((u^4+u^3+3u^2+2u+1)^2)(u^{53}-21u^{52}+\cdots-u+1)$
c_{11}	$((u^4-u^3+u^2+1)^2)(u^{53}-3u^{52}+\cdots+5u-1)$
c_{12}	$((u^4-u^3+3u^2-2u+1)^2)(u^{53}-21u^{52}+\cdots-u+1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$((y^2+y+1)^4)(y^{53}+51y^{52}+\cdots-4269y-1)$
c_2, c_5	$((y^2+y+1)^4)(y^{53}+15y^{52}+\cdots-9y-1)$
c_3	$((y^2+y+1)^4)(y^{53}+87y^{52}+\cdots-7.08900\times10^{11}y-2.19896\times10^{10})$
c_4, c_7	$y^8(y^{53}-45y^{52}+\cdots-606208y-65536)$
c_6, c_9	$((y^4+5y^3+7y^2+2y+1)^2)(y^{53}+5y^{52}+\cdots-y-1)$
c_8, c_{11}	$((y^4+y^3+3y^2+2y+1)^2)(y^{53}+21y^{52}+\cdots-y-1)$
c_{10}, c_{12}	$((y^4+5y^3+7y^2+2y+1)^2)(y^{53}+25y^{52}+\cdots-77y-1)$