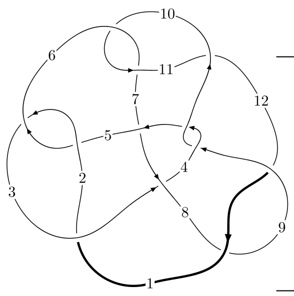
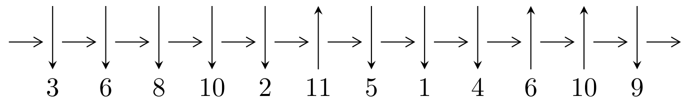
$12n_{0372}$ ($K12n_{0372}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned} I_1^u = \langle & 1.42529 \times 10^{92} u^{36} + 8.72680 \times 10^{91} u^{35} + \cdots + 1.49513 \times 10^{93} b + 2.35282 \times 10^{95}, \\ & -3.02051 \times 10^{94} u^{36} - 1.75541 \times 10^{94} u^{35} + \cdots + 6.54608 \times 10^{94} a - 5.25852 \times 10^{97}, \\ & u^{37} - 30u^{35} + \cdots + 4671u - 1007 \rangle \\ I_2^u = \langle & 7u^{14} - 13u^{13} + \cdots + b + 17,\ -13u^{15} + 34u^{14} + \cdots + a + 20,\ u^{16} - 3u^{15} + \cdots - 4u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 53 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. $\boldsymbol{I_1^u = \langle 1.43 \times 10^{92}u^{36} + 8.73 \times 10^{91}u^{35} + \cdots + 1.50 \times 10^{93}b + 2.35 \times 10^{95},\ -3.02 \times 10^{94}u^{36} - 1.76 \times 10^{94}u^{35} + \cdots + 6.55 \times 10^{94}a - 5.26 \times 10^{97},\ u^{37} - 30u^{35} + \cdots + 4671u - 1007\rangle}$

(i) Arc colorings

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

$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u \\ -u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.461422u^{36} + 0.268162u^{35} + \cdots - 2340.32u + 803.308 \\ -0.0953284u^{36} - 0.0583680u^{35} + \cdots + 476.203u - 157.365 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.461422u^{36} + 0.268162u^{35} + \cdots - 2340.32u + 803.308 \\ -0.250593u^{36} - 0.148286u^{35} + \cdots + 1264.14u - 427.405 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0803873u^{36} + 0.0415081u^{35} + \cdots - 433.347u + 161.373 \\ -0.176241u^{36} - 0.103850u^{35} + \cdots + 897.957u - 302.093 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0247048u^{36} - 0.00822526u^{35} + \cdots + 139.528u - 59.8522 \\ 0.304235u^{36} + 0.170592u^{35} + \cdots - 1563.50u + 546.853 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.326831u^{36} + 0.178171u^{35} + \cdots - 1699.82u + 603.957 \\ -0.293525u^{36} - 0.170056u^{35} + \cdots + 1484.90u - 508.106 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.279530u^{36} + 0.162367u^{35} + \cdots - 1423.97u + 487.001 \\ 0.304235u^{36} + 0.170592u^{35} + \cdots - 1563.50u + 546.853 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.325873u^{36} - 0.178662u^{35} + \cdots + 1668.53u - 591.318 \\ 0.169109u^{36} + 0.102532u^{35} + \cdots - 850.133u + 281.907 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 1.65322u^{36} + 0.965871u^{35} + \cdots - 8351.56u + 2824.79$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{37} + 7u^{36} + \cdots + 33u + 1$
c_2, c_5	$u^{37} + u^{36} + \cdots - 5u + 1$
c_3	$u^{37} + u^{36} + \cdots - 23u - 5$
c_4, c_9	$u^{37} + 3u^{35} + \cdots - 294u - 229$
c_6, c_{10}	$u^{37} - 30u^{35} + \cdots + 4671u + 1007$
c_7	$u^{37} - 7u^{36} + \cdots - 207584u - 176401$
c_8, c_{12}	$u^{37} - 6u^{36} + \cdots + 3u + 1$
c_{11}	$u^{37} - 60u^{36} + \cdots + 36901087u - 1014049$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{37} + 53y^{36} + \cdots + 369y - 1$
c_2, c_5	$y^{37} - 7y^{36} + \cdots + 33y - 1$
c_3	$y^{37} + 3y^{36} + \cdots - 131y - 25$
c_4, c_9	$y^{37} + 6y^{36} + \cdots + 6744y - 52441$
c_6, c_{10}	$y^{37} - 60y^{36} + \cdots + 36901087y - 1014049$
c_7	$y^{37} + 101y^{36} + \cdots - 38906418180y - 31117312801$
c_8, c_{12}	$y^{37} + 36y^{36} + \cdots + 119y - 1$
c_{11}	$y^{37} - 168y^{36} + \cdots + 147226173534695y - 1028295374401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.840205 + 0.666551I$ $a = 0.340962 + 0.304853I$ $b = -0.13217 + 1.48071I$	$1.03398 - 2.73157I$	$-7.05651 + 1.27102I$
$u = -0.840205 - 0.666551I$ $a = 0.340962 - 0.304853I$ $b = -0.13217 - 1.48071I$	$1.03398 + 2.73157I$	$-7.05651 - 1.27102I$
$u = -0.853829 + 0.359843I$ $a = 0.495942 + 0.786208I$ $b = -0.204005 + 0.651770I$	$1.45153 - 1.91917I$	$-1.09958 + 4.16671I$
$u = -0.853829 - 0.359843I$ $a = 0.495942 - 0.786208I$ $b = -0.204005 - 0.651770I$	$1.45153 + 1.91917I$	$-1.09958 - 4.16671I$
$u = 0.755908 + 0.512680I$ $a = 0.866716 + 0.077393I$ $b = 0.149283 + 0.157106I$	$-1.45991 - 0.04960I$	$-8.67591 + 0.36054I$
$u = 0.755908 - 0.512680I$ $a = 0.866716 - 0.077393I$ $b = 0.149283 - 0.157106I$	$-1.45991 + 0.04960I$	$-8.67591 - 0.36054I$
$u = 0.979984 + 0.597364I$ $a = 0.036606 + 1.010950I$ $b = -0.161070 + 1.162890I$	$6.29690 - 0.93807I$	0
$u = 0.979984 - 0.597364I$ $a = 0.036606 - 1.010950I$ $b = -0.161070 - 1.162890I$	$6.29690 + 0.93807I$	0
$u = 0.622379 + 0.534957I$ $a = 0.294972 - 1.294270I$ $b = -0.219235 - 1.224940I$	$-1.91889 + 4.49439I$	$-10.27196 - 6.08209I$
$u = 0.622379 - 0.534957I$ $a = 0.294972 + 1.294270I$ $b = -0.219235 + 1.224940I$	$-1.91889 - 4.49439I$	$-10.27196 + 6.08209I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.139275+1.174200I$ $a=-0.196370+0.643239I$ $b=-0.451126+0.096722I$	$0.20567-4.24321I$	$-9.32033+9.54688I$
$u=-0.139275-1.174200I$ $a=-0.196370-0.643239I$ $b=-0.451126-0.096722I$	$0.20567+4.24321I$	$-9.32033-9.54688I$
$u=\ \ 1.180350+0.222094I$ $a=-1.046310-0.346221I$ $b=\ \ 0.263695-0.674015I$	$4.21160-7.05862I$	$0.+5.66738I$
$u=\ \ 1.180350-0.222094I$ $a=-1.046310+0.346221I$ $b=\ \ 0.263695+0.674015I$	$4.21160+7.05862I$	$0.-5.66738I$
$u=\ \ 0.574255$ $a=-1.63784$ $b=\ \ 1.42181$	-5.56665	-18.9790
$u=\ \ 0.553337+0.058859I$ $a=\ \ 1.76805-0.36536I$ $b=\ \ 0.540750+0.394902I$	$-0.707444-0.027731I$	$-6.69727-0.68732I$
$u=\ \ 0.553337-0.058859I$ $a=\ \ 1.76805+0.36536I$ $b=\ \ 0.540750-0.394902I$	$-0.707444+0.027731I$	$-6.69727+0.68732I$
$u=\ \ 1.45175$ $a=-0.159754$ $b=-0.988768$	-2.82767	0
$u=-1.28637+0.72968I$ $a=-0.771385+0.037127I$ $b=\ \ 1.24761+0.99067I$	$4.33297+0.28642I$	0
$u=-1.28637-0.72968I$ $a=-0.771385-0.037127I$ $b=\ \ 1.24761-0.99067I$	$4.33297-0.28642I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.404870$ $a = 1.84305$ $b = 0.402148$	-0.970503	-10.8270
$u = -0.383604 + 0.036914I$ $a = -0.83236 + 1.46023I$ $b = -1.274340 - 0.220333I$	$2.16124 + 2.73535I$	$0.44906 - 2.49340I$
$u = -0.383604 - 0.036914I$ $a = -0.83236 - 1.46023I$ $b = -1.274340 + 0.220333I$	$2.16124 - 2.73535I$	$0.44906 + 2.49340I$
$u = 1.73463 + 0.14709I$ $a = -0.525150 + 0.634018I$ $b = -0.43949 + 2.05393I$	$10.27330 + 3.72558I$	0
$u = 1.73463 - 0.14709I$ $a = -0.525150 - 0.634018I$ $b = -0.43949 - 2.05393I$	$10.27330 - 3.72558I$	0
$u = -1.41128 + 1.17849I$ $a = -0.012841 - 0.584996I$ $b = -0.98850 - 1.17013I$	$5.31029 - 5.07857I$	0
$u = -1.41128 - 1.17849I$ $a = -0.012841 + 0.584996I$ $b = -0.98850 + 1.17013I$	$5.31029 + 5.07857I$	0
$u = -1.89476 + 0.47022I$ $a = 0.403115 + 0.592404I$ $b = 0.19279 + 2.49482I$	$15.7367 - 4.5260I$	0
$u = -1.89476 - 0.47022I$ $a = 0.403115 - 0.592404I$ $b = 0.19279 - 2.49482I$	$15.7367 + 4.5260I$	0
$u = -2.10823 + 0.28878I$ $a = 0.490821 - 0.416004I$ $b = 0.36444 - 1.90539I$	$16.1759 + 2.6224I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -2.10823 - 0.28878I$ $a = 0.490821 + 0.416004I$ $b = 0.36444 + 1.90539I$	$16.1759 - 2.6224I$	0
$u = 2.07718 + 0.48138I$ $a = 0.388719 - 0.539166I$ $b = 0.41767 - 2.54262I$	$16.2225 + 13.1708I$	0
$u = 2.07718 - 0.48138I$ $a = 0.388719 + 0.539166I$ $b = 0.41767 + 2.54262I$	$16.2225 - 13.1708I$	0
$u = 2.12794 + 0.24863I$ $a = 0.473392 + 0.439822I$ $b = 0.25295 + 2.11779I$	$16.8105 + 5.9256I$	0
$u = 2.12794 - 0.24863I$ $a = 0.473392 - 0.439822I$ $b = 0.25295 - 2.11779I$	$16.8105 - 5.9256I$	0
$u = -2.32958 + 0.16455I$ $a = -0.370401 - 0.408307I$ $b = -0.47684 - 2.69279I$	$9.70907 - 3.28908I$	0
$u = -2.32958 - 0.16455I$ $a = -0.370401 + 0.408307I$ $b = -0.47684 + 2.69279I$	$9.70907 + 3.28908I$	0

II. $I_2^u =$
$\langle 7u^{14}-13u^{13}+\cdots+b+17,\ -13u^{15}+34u^{14}+\cdots+a+20,\ u^{16}-3u^{15}+\cdots-4u+1\rangle$

(i) Arc colorings

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} u \\ -u^3+u \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 13u^{15}-34u^{14}+\cdots+60u-20 \\ -7u^{14}+13u^{13}+\cdots+30u-17 \end{pmatrix}$$
$$a_{12} = \begin{pmatrix} -u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 13u^{15}-34u^{14}+\cdots+60u-20 \\ u^{15}-6u^{14}+\cdots+23u-12 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -10u^{15}+23u^{14}+\cdots-39u+7 \\ -u^{15}+3u^{14}+\cdots-5u+3 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -24u^{15}+60u^{14}+\cdots-100u+30 \\ 2u^{15}-u^{14}+\cdots-7u+7 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 8u^{15}-14u^{14}+\cdots+12u+8 \\ 3u^{15}-8u^{14}+\cdots+20u-7 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -22u^{15}+59u^{14}+\cdots-107u+37 \\ 2u^{15}-u^{14}+\cdots-7u+7 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 8u^{15}-21u^{14}+\cdots+38u-13 \\ u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= -41u^{15}+105u^{14}+175u^{13}-551u^{12}-232u^{11}+1198u^{10}-68u^9-1621u^8+634u^7+1274u^6-884u^5-529u^4+597u^3+18u^2-195u+58$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{16} + 14y^{15} + \cdots - 6y + 1$
c_2, c_5	$y^{16} - 6y^{15} + \cdots - 10y + 1$
c_3	$y^{16} - 4y^{15} + \cdots + 10y + 1$
c_4, c_9	$y^{16} - 13y^{15} + \cdots - 9y + 1$
c_6, c_{10}	$y^{16} - 15y^{15} + \cdots - 8y + 1$
c_7	$y^{16} + 10y^{15} + \cdots + 11y + 1$
c_8, c_{12}	$y^{16} + 9y^{15} + \cdots - 88y + 1$
c_{11}	$y^{16} - 31y^{15} + \cdots + 20y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.708860 + 0.704443I$ $a = 0.196590 - 0.655681I$ $b = -1.03433 - 1.08957I$	$1.20037 + 3.52175I$	$-4.53497 - 9.11963I$
$u = 0.708860 - 0.704443I$ $a = 0.196590 + 0.655681I$ $b = -1.03433 + 1.08957I$	$1.20037 - 3.52175I$	$-4.53497 + 9.11963I$
$u = -0.950066$ $a = 0.979926$ $b = -1.63593$	-4.89306	-6.14970
$u = -0.840814 + 0.418418I$ $a = -0.583883 - 1.131830I$ $b = 0.09781 - 1.66739I$	$-0.53914 - 4.66397I$	$-3.81832 + 4.87682I$
$u = -0.840814 - 0.418418I$ $a = -0.583883 + 1.131830I$ $b = 0.09781 + 1.66739I$	$-0.53914 + 4.66397I$	$-3.81832 - 4.87682I$
$u = 0.844267 + 0.334993I$ $a = 1.174390 - 0.186478I$ $b = 0.377070 + 0.021427I$	$-0.583413 + 1.042030I$	$-4.30767 - 6.39777I$
$u = 0.844267 - 0.334993I$ $a = 1.174390 + 0.186478I$ $b = 0.377070 - 0.021427I$	$-0.583413 - 1.042030I$	$-4.30767 + 6.39777I$
$u = -0.982942 + 0.541373I$ $a = -0.920141 + 0.267122I$ $b = -0.392078 + 0.640196I$	$0.100312 + 0.914322I$	$-3.55487 - 1.69871I$
$u = -0.982942 - 0.541373I$ $a = -0.920141 - 0.267122I$ $b = -0.392078 - 0.640196I$	$0.100312 - 0.914322I$	$-3.55487 + 1.69871I$
$u = 0.498706 + 0.460819I$ $a = -1.46137 + 0.05858I$ $b = 0.99657 - 1.37404I$	$2.66837 + 1.50137I$	$-3.18048 - 1.01850I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.498706 - 0.460819I$ $a = -1.46137 - 0.05858I$ $b = 0.99657 + 1.37404I$	$2.66837 - 1.50137I$	$-3.18048 + 1.01850I$
$u = 0.523977 + 0.369468I$ $a = -0.64585 + 1.67216I$ $b = -1.188670 + 0.328805I$	$2.03016 + 6.51826I$	$-5.41677 - 6.68837I$
$u = 0.523977 - 0.369468I$ $a = -0.64585 - 1.67216I$ $b = -1.188670 - 0.328805I$	$2.03016 - 6.51826I$	$-5.41677 + 6.68837I$
$u = -1.52435$ $a = 0.344430$ $b = 0.923126$	-3.18638	-21.1730
$u = 1.98515 + 0.20040I$ $a = -0.421911 + 0.508878I$ $b = -0.49997 + 2.32848I$	$9.03267 + 3.39525I$	$-7.02573 - 2.85779I$
$u = 1.98515 - 0.20040I$ $a = -0.421911 - 0.508878I$ $b = -0.49997 - 2.32848I$	$9.03267 - 3.39525I$	$-7.02573 + 2.85779I$

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{16} - 6u^{15} + \cdots - 10u + 1)(u^{37} + 7u^{36} + \cdots + 33u + 1)$
c_2	$(u^{16} - 3u^{14} + \cdots - 5u^2 + 1)(u^{37} + u^{36} + \cdots - 5u + 1)$
c_3	$(u^{16} - 2u^{14} + \cdots + 2u - 1)(u^{37} + u^{36} + \cdots - 23u - 5)$
c_4	$(u^{16} - u^{15} + \cdots - u - 1)(u^{37} + 3u^{35} + \cdots - 294u - 229)$
c_5	$(u^{16} - 3u^{14} + \cdots - 5u^2 + 1)(u^{37} + u^{36} + \cdots - 5u + 1)$
c_6	$(u^{16} + 3u^{15} + \cdots + 4u + 1)(u^{37} - 30u^{35} + \cdots + 4671u + 1007)$
c_7	$(u^{16} + 5u^{14} + \cdots - 9u - 1)(u^{37} - 7u^{36} + \cdots - 207584u - 176401)$
c_8	$(u^{16} - u^{15} + \cdots - 8u - 1)(u^{37} - 6u^{36} + \cdots + 3u + 1)$
c_9	$(u^{16} + u^{15} + \cdots + u - 1)(u^{37} + 3u^{35} + \cdots - 294u - 229)$
c_{10}	$(u^{16} - 3u^{15} + \cdots - 4u + 1)(u^{37} - 30u^{35} + \cdots + 4671u + 1007)$
c_{11}	$(u^{16} - 15u^{15} + \cdots - 8u + 1)$ $\cdot (u^{37} - 60u^{36} + \cdots + 36901087u - 1014049)$
c_{12}	$(u^{16} + u^{15} + \cdots + 8u - 1)(u^{37} - 6u^{36} + \cdots + 3u + 1)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{16}+14y^{15}+\cdots-6y+1)(y^{37}+53y^{36}+\cdots+369y-1)$
c_2, c_5	$(y^{16}-6y^{15}+\cdots-10y+1)(y^{37}-7y^{36}+\cdots+33y-1)$
c_3	$(y^{16}-4y^{15}+\cdots+10y+1)(y^{37}+3y^{36}+\cdots-131y-25)$
c_4, c_9	$(y^{16}-13y^{15}+\cdots-9y+1)(y^{37}+6y^{36}+\cdots+6744y-52441)$
c_6, c_{10}	$(y^{16}-15y^{15}+\cdots-8y+1)$ $\cdot(y^{37}-60y^{36}+\cdots+36901087y-1014049)$
c_7	$(y^{16}+10y^{15}+\cdots+11y+1)$ $\cdot(y^{37}+101y^{36}+\cdots-38906418180y-31117312801)$
c_8, c_{12}	$(y^{16}+9y^{15}+\cdots-88y+1)(y^{37}+36y^{36}+\cdots+119y-1)$
c_{11}	$(y^{16}-31y^{15}+\cdots+20y+1)$ $\cdot(y^{37}-168y^{36}+\cdots+147226173534695y-1028295374401)$