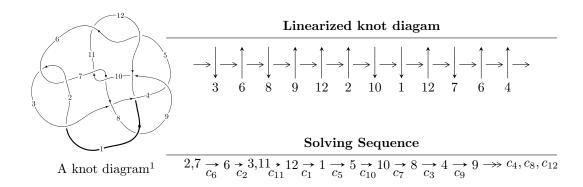
$12n_{0362} \ (K12n_{0362})$



Ideals for irreducible components² of X_{par}

$$\begin{split} I_1^u &= \langle 6.22856 \times 10^{22} u^{28} + 9.17947 \times 10^{22} u^{27} + \dots + 6.05360 \times 10^{22} b - 3.78443 \times 10^{23}, \\ &\quad 4.23380 \times 10^{22} u^{28} + 6.00251 \times 10^{22} u^{27} + \dots + 1.81608 \times 10^{23} a - 2.84140 \times 10^{23}, \ u^{29} + u^{28} + \dots - 7u + 3 \rangle \\ I_2^u &= \langle 25u^{13} + 21u^{12} + \dots + 38b + 39, \ 28u^{13} + 22u^{12} + \dots + 38a + 125, \\ u^{14} + 2u^{12} + u^{11} + 2u^{10} + 4u^9 + 5u^7 + 3u^6 + 9u^4 - 4u^3 + 6u^2 - u + 1 \rangle \end{split}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 43 representations.

¹The 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.

 $I. \\ I_1^u = \langle 6.23 \times 10^{22} u^{28} + 9.18 \times 10^{22} u^{27} + \dots + 6.05 \times 10^{22} b - 3.78 \times 10^{23}, \ 4.23 \times 10^{22} u^{28} + 6.00 \times 10^{22} u^{27} + \dots + 1.82 \times 10^{23} a - 2.84 \times 10^{23}, \ u^{29} + u^{28} + \dots - 7u + 3 \rangle$

(i) Arc colorings

$$a_{2} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} 1 \\ u^{2} \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.233129u^{28} - 0.330520u^{27} + \dots + 0.142332u + 1.56458 \\ -1.02890u^{28} - 1.51637u^{27} + \dots - 2.22286u + 6.25155 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.28168u^{28} - 1.86932u^{27} + \dots - 2.09818u + 7.52395 \\ -1.33350u^{28} - 1.99028u^{27} + \dots - 2.50900u + 7.72231 \end{pmatrix}$$

$$a_{1} = \begin{pmatrix} u^{3} \\ u^{5} + u^{3} + u \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} -1.13087u^{28} - 1.69160u^{27} + \dots - 3.73374u + 6.87479 \\ -0.452599u^{28} - 0.697647u^{27} + \dots - 2.84372u + 2.78730 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.26203u^{28} - 1.84689u^{27} + \dots - 2.08053u + 7.81613 \\ -1.02890u^{28} - 1.51637u^{27} + \dots - 2.22286u + 6.25155 \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} -1.46451u^{28} - 2.20169u^{27} + \dots - 3.99392u + 9.36262 \\ -0.583764u^{28} - 0.939441u^{27} + \dots - 2.53644u + 3.54213 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} 1.44243u^{28} + 2.20325u^{27} + \dots + 5.47310u - 7.92054 \\ 0.146798u^{28} + 0.344443u^{27} + \dots + 2.49249u - 0.145976 \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} -1.51831u^{28} - 2.23503u^{27} + \dots - 3.75421u + 9.70241 \\ -0.975943u^{28} - 1.42608u^{27} + \dots - 2.71519u + 6.24874 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-\frac{284585492999900700617379}{6053596182803518424854}u^{28} - \frac{234964149766130199530131}{30267980914017592212427}u^{27} + \cdots - \frac{730227845218527654431241}{60535961828035184424854}u + \frac{888664531849357631011752}{30267980914017592212427}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{29} - u^{28} + \dots + 73u - 9$
c_2, c_6	$u^{29} - u^{28} + \dots - 7u - 3$
c_3	$u^{29} + 15u^{25} + \dots + 32u - 11$
c_4	$u^{29} - 24u^{27} + \dots - 306u - 49$
c_5,c_{11}	$u^{29} - 3u^{28} + \dots - 6023859u - 792917$
c_7, c_{10}	$u^{29} - 4u^{28} + \dots + 590u - 1097$
c_8	$u^{29} - u^{28} + \dots + 2101u - 503$
<i>c</i> ₉	$u^{29} + 6u^{28} + \dots + 8024u - 1461$
c_{12}	$u^{29} + 2u^{27} + \dots + 6u + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{29} + 51y^{28} + \dots + 1909y - 81$
c_{2}, c_{6}	$y^{29} - y^{28} + \dots + 73y - 9$
c_3	$y^{29} + 30y^{27} + \dots - 538y - 121$
c_4	$y^{29} - 48y^{28} + \dots + 26604y - 2401$
c_5, c_{11}	$y^{29} - 99y^{28} + \dots + 5243889665927y - 628717368889$
c_7, c_{10}	$y^{29} + 50y^{28} + \dots + 4466238y - 1203409$
c_8	$y^{29} + 31y^{28} + \dots - 4491917y - 253009$
<i>c</i> ₉	$y^{29} - 62y^{28} + \dots - 12595514y - 2134521$
c_{12}	$y^{29} + 4y^{28} + \dots + 12y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.373209 + 0.987492I		
a = -0.104866 - 0.390683I	-0.91018 - 2.91066I	5.01825 + 3.66237I
b = 0.354634 + 0.496131I		
u = -0.373209 - 0.987492I		
a = -0.104866 + 0.390683I	-0.91018 + 2.91066I	5.01825 - 3.66237I
b = 0.354634 - 0.496131I		
u = -0.676723 + 0.657927I		
a = 1.37413 - 1.24981I	3.33766 - 4.86187I	6.31556 + 7.79080I
b = -0.587705 - 0.859816I		
u = -0.676723 - 0.657927I		
a = 1.37413 + 1.24981I	3.33766 + 4.86187I	6.31556 - 7.79080I
b = -0.587705 + 0.859816I		
u = -1.003850 + 0.405083I		
a = 0.881641 - 0.955047I	4.69261 + 0.54758I	8.30748 - 0.23720I
b = -1.52183 + 1.81794I		
u = -1.003850 - 0.405083I		
a = 0.881641 + 0.955047I	4.69261 - 0.54758I	8.30748 + 0.23720I
b = -1.52183 - 1.81794I		
u = 0.690839 + 0.852823I		
a = -1.58706 - 0.12680I	-1.72733 + 5.06544I	-0.06902 - 8.02609I
b = 1.168090 - 0.519664I		
u = 0.690839 - 0.852823I		
a = -1.58706 + 0.12680I	-1.72733 - 5.06544I	-0.06902 + 8.02609I
b = 1.168090 + 0.519664I		
u = 0.301765 + 1.063800I	9.00409 + 0.599447	F 00045 : 1 000067
a = 0.115276 - 1.216510I	-3.69483 + 0.73314I	-5.00047 + 1.33936I
b = 0.350185 + 0.484209I $u = 0.301765 - 1.063800I$		
	9.00409 0.799147	F 00047 1 990967
a = 0.115276 + 1.216510I	-3.69483 - 0.73314I	-5.00047 - 1.33936I
b = 0.350185 - 0.484209I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.746264 + 0.430998I		
a = 0.459246 + 0.593245I	4.83649 + 4.86751I	7.86120 - 7.38894I
b = -1.06802 - 1.95662I		
u = 0.746264 - 0.430998I		
a = 0.459246 - 0.593245I	4.83649 - 4.86751I	7.86120 + 7.38894I
b = -1.06802 + 1.95662I		
u = -1.17492		
a = 1.30562	2.83868	-0.284290
b = -1.24715		
u = 0.785504 + 0.193075I		
a = -0.69313 + 1.26338I	5.21089 - 2.34623I	11.13604 + 2.03452I
b = 0.123042 + 0.893877I		
u = 0.785504 - 0.193075I		
a = -0.69313 - 1.26338I	5.21089 + 2.34623I	11.13604 - 2.03452I
b = 0.123042 - 0.893877I		
u = -0.636133 + 0.449347I		
a = 0.946998 - 0.046552I	1.14437 - 0.87641I	6.31209 + 2.91044I
b = -0.353642 - 0.116483I		
u = -0.636133 - 0.449347I		
a = 0.946998 + 0.046552I	1.14437 + 0.87641I	6.31209 - 2.91044I
b = -0.353642 + 0.116483I		
u = -0.193861 + 0.669195I		
a = -1.12680 - 1.16765I	-1.76493 - 2.37343I	-1.52317 + 0.50273I
b = 0.873432 + 0.640443I		
u = -0.193861 - 0.669195I		
a = -1.12680 + 1.16765I	-1.76493 + 2.37343I	-1.52317 - 0.50273I
b = 0.873432 - 0.640443I		
u = 0.510226 + 0.048164I		
a = 0.823085 - 0.113650I	-0.71888 + 2.03179I	1.45662 - 4.22219I
b = 0.302073 - 0.906163I		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = 0.510226 - 0.048164I		
a = 0.823085 + 0.113650I	-0.71888 - 2.03179I	1.45662 + 4.22219I
b = 0.302073 + 0.906163I		
u = 1.15086 + 1.05205I		
a = 1.35233 - 1.13268I	17.8200 + 4.6744I	4.90361 - 1.93865I
b = -0.61827 + 2.28433I		
u = 1.15086 - 1.05205I		
a = 1.35233 + 1.13268I	17.8200 - 4.6744I	4.90361 + 1.93865I
b = -0.61827 - 2.28433I		
u = 1.06456 + 1.14906I		
a = -1.02725 + 1.45432I	17.4581 + 3.4840I	4.59551 - 2.22003I
b = 0.02209 - 2.23942I		
u = 1.06456 - 1.14906I		
a = -1.02725 - 1.45432I	17.4581 - 3.4840I	4.59551 + 2.22003I
b = 0.02209 + 2.23942I		
u = -1.14088 + 1.11108I		
a = 1.45432 + 1.41280I	17.2047 - 12.2799I	4.10699 + 5.81074I
b = -0.63801 - 2.49907I		
u = -1.14088 - 1.11108I		
a = 1.45432 - 1.41280I	17.2047 + 12.2799I	4.10699 - 5.81074I
b = -0.63801 + 2.49907I		
u = -1.13790 + 1.15169I		
a = -1.18740 - 1.61441I	17.1162 + 3.8820I	4.22145 - 2.11285I
b = 0.21751 + 2.42455I		
u = -1.13790 - 1.15169I		
a = -1.18740 + 1.61441I	17.1162 - 3.8820I	4.22145 + 2.11285I
b = 0.21751 - 2.42455I		

II.
$$I_2^u = \langle 25u^{13} + 21u^{12} + \dots + 38b + 39, \ 28u^{13} + 22u^{12} + \dots + 38a + 125, \ u^{14} + 2u^{12} + \dots - u + 1 \rangle$$

(i) Arc colorings

$$a_{2} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{7} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{6} = \begin{pmatrix} 1 \\ u^{2} \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} -0.736842u^{13} - 0.578947u^{12} + \cdots - 0.0789474u - 3.28947 \\ -0.657895u^{13} - 0.552632u^{12} + \cdots - 2.05263u - 1.02632 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -1.86842u^{13} - 1.28947u^{12} + \cdots - 2.28947u - 4.89474 \\ -0.394737u^{13} - 0.131579u^{12} + \cdots - 1.63158u - 0.315789 \end{pmatrix}$$

$$a_{1} = \begin{pmatrix} u^{3} \\ u^{5} + u^{3} + u \end{pmatrix}$$

$$a_{5} = \begin{pmatrix} 3.65789u^{13} + 1.55263u^{12} + \cdots + 7.55263u + 6.52632 \\ -\frac{1}{2}u^{9} + u^{8} + \cdots + \frac{3}{2}u - \frac{1}{2} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.39474u^{13} - 1.13158u^{12} + \cdots - 2.13158u - 4.31579 \\ -0.657895u^{13} - 0.552632u^{12} + \cdots - 2.05263u - 1.02632 \end{pmatrix}$$

$$a_{8} = \begin{pmatrix} 2.02632u^{13} + 0.342105u^{12} + \cdots + 6.34211u + 1.92105 \\ 0.921053u^{13} - 0.526316u^{12} + \cdots + 2.47368u - 1.26316 \end{pmatrix}$$

$$a_{4} = \begin{pmatrix} -0.315789u^{13} + 0.894737u^{12} + \cdots - 6.10526u + 4.44737 \\ 1.15789u^{13} + 0.0526316u^{12} + \cdots + 2.55263u - 0.473684 \end{pmatrix}$$

$$a_{9} = \begin{pmatrix} 2.21053u^{13} + 0.736842u^{12} + \cdots + 6.73684u + 2.36842 \\ 0.394737u^{13} - 0.868421u^{12} + \cdots + 6.73684u + 2.36842 \\ 0.394737u^{13} - 0.868421u^{12} + \cdots + 1.13158u - 1.68421 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes =
$$\frac{275}{38}u^{13} + \frac{117}{38}u^{12} + 10u^{11} + \frac{389}{38}u^{10} + \frac{191}{19}u^9 + \frac{993}{38}u^8 + \frac{61}{19}u^7 + \frac{643}{38}u^6 + \frac{1071}{38}u^5 - \frac{175}{38}u^4 + \frac{1549}{38}u^3 - \frac{105}{19}u^2 + \frac{49}{19}u + \frac{201}{38}$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing	
c_1	$u^{14} - 4u^{13} + \dots - 11u + 1$	
c_2	$u^{14} + 2u^{12} - u^{11} + 2u^{10} - 4u^9 - 5u^7 + 3u^6 + 9u^4 + 4u^3 + 6u^2 + u$	+1
c_3	$u^{14} - u^{13} - 3u^{12} + 4u^{11} + 4u^{10} - 7u^9 + 6u^7 - 6u^6 - 2u^5 + 9u^4 - 5u^6 - 2u^6 - 2$	$u^2 + 1$
c_4	$u^{14} + u^{13} + \dots - 8u + 1$	
<i>C</i> 5	$u^{14} + 2u^{13} + \dots - 9u + 1$	
c_6	$u^{14} + 2u^{12} + u^{11} + 2u^{10} + 4u^9 + 5u^7 + 3u^6 + 9u^4 - 4u^3 + 6u^2 - u + 3u^4 + 2u^4 + 3u^4 + $	+1
c_7	$u^{14} + u^{13} + \dots + 2u + 1$	
c ₈	$u^{14} + 6u^{13} + \dots + 3u + 1$	
<i>c</i> 9	$u^{14} + 15u^{13} + \dots + 430u + 67$	
c_{10}	$u^{14} - u^{13} + \dots - 2u + 1$	
c_{11}	$u^{14} - 2u^{13} + \dots + 9u + 1$	
c_{12}	$u^{14} + u^{13} + \dots + 4u^2 + 1$	

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{14} + 12y^{12} + \dots - 29y + 1$
c_2, c_6	$y^{14} + 4y^{13} + \dots + 11y + 1$
c_3	$y^{14} - 7y^{13} + \dots - 10y + 1$
c_4	$y^{14} - 15y^{13} + \dots - 36y + 1$
c_5, c_{11}	$y^{14} + 2y^{13} + \dots - 3y + 1$
c_7, c_{10}	$y^{14} + 3y^{13} + \dots + 2y + 1$
<i>c</i> ₈	$y^{14} + 12y^{13} + \dots + 5y + 1$
<i>c</i> ₉	$y^{14} - 13y^{13} + \dots + 12482y + 4489$
c_{12}	$y^{14} + 5y^{13} + \dots + 8y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.083441 + 1.078120I		
a = -0.61041 - 1.75239I	-3.38940 - 1.96463I	-3.36465 + 3.16114I
b = 0.359465 + 0.927829I		
u = -0.083441 - 1.078120I		
a = -0.61041 + 1.75239I	-3.38940 + 1.96463I	-3.36465 - 3.16114I
b = 0.359465 - 0.927829I		
u = 0.897543 + 0.628482I		
a = -0.569463 - 0.217274I	2.05951 + 4.06327I	2.33224 - 4.24956I
b = 0.362370 - 1.134100I		
u = 0.897543 - 0.628482I		
a = -0.569463 + 0.217274I	2.05951 - 4.06327I	2.33224 + 4.24956I
b = 0.362370 + 1.134100I		
u = 0.330516 + 0.759270I		
a = -1.019620 + 0.347965I	-1.80322 + 3.24685I	-4.21171 - 8.28864I
b = 0.931938 - 0.797201I		
u = 0.330516 - 0.759270I		
a = -1.019620 - 0.347965I	-1.80322 - 3.24685I	-4.21171 + 8.28864I
b = 0.931938 + 0.797201I		
u = 0.605820 + 1.045230I		
a = 0.540931 - 0.356236I	0.55352 + 1.43715I	2.87679 - 0.95272I
b = 0.280794 + 0.717818I		
u = 0.605820 - 1.045230I		
a = 0.540931 + 0.356236I	0.55352 - 1.43715I	2.87679 + 0.95272I
b = 0.280794 - 0.717818I		
u = -1.201470 + 0.299412I		
a = 0.998346 - 0.558650I	3.33918 + 0.87099I	2.89094 - 4.11825I
b = -1.21886 + 1.14220I		
u = -1.201470 - 0.299412I		
a = 0.998346 + 0.558650I	3.33918 - 0.87099I	2.89094 + 4.11825I
b = -1.21886 - 1.14220I		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
u = -0.555233 + 1.209370I		
a = 1.330610 - 0.277547I	0.03234 - 6.71387I	0.87198 + 7.20748I
b = -0.600887 - 0.417434I		
u = -0.555233 - 1.209370I		
a = 1.330610 + 0.277547I	0.03234 + 6.71387I	0.87198 - 7.20748I
b = -0.600887 + 0.417434I		
u = 0.006261 + 0.511967I		
a = -2.67040 + 0.41495I	4.14287 + 3.38328I	6.10441 - 3.17614I
b = -0.614823 - 0.394790I		
u = 0.006261 - 0.511967I		
a = -2.67040 - 0.41495I	4.14287 - 3.38328I	6.10441 + 3.17614I
b = -0.614823 + 0.394790I		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$ (u^{14} - 4u^{13} + \dots - 11u + 1)(u^{29} - u^{28} + \dots + 73u - 9) $
c_2	$(u^{14} + 2u^{12} - u^{11} + 2u^{10} - 4u^9 - 5u^7 + 3u^6 + 9u^4 + 4u^3 + 6u^2 + u + 1)$ $\cdot (u^{29} - u^{28} + \dots - 7u - 3)$
c_3	$(u^{14} - u^{13} - 3u^{12} + 4u^{11} + 4u^{10} - 7u^9 + 6u^7 - 6u^6 - 2u^5 + 9u^4 - 5u^2 + 1)$ $\cdot (u^{29} + 15u^{25} + \dots + 32u - 11)$
c_4	$ (u^{14} + u^{13} + \dots - 8u + 1)(u^{29} - 24u^{27} + \dots - 306u - 49) $
<i>C</i> ₅	$ (u^{14} + 2u^{13} + \dots - 9u + 1)(u^{29} - 3u^{28} + \dots - 6023859u - 792917) $
<i>c</i> ₆	$(u^{14} + 2u^{12} + u^{11} + 2u^{10} + 4u^9 + 5u^7 + 3u^6 + 9u^4 - 4u^3 + 6u^2 - u + 1)$ $\cdot (u^{29} - u^{28} + \dots - 7u - 3)$
c_7	$ (u^{14} + u^{13} + \dots + 2u + 1)(u^{29} - 4u^{28} + \dots + 590u - 1097) $
c_8	$(u^{14} + 6u^{13} + \dots + 3u + 1)(u^{29} - u^{28} + \dots + 2101u - 503)$
<i>c</i> ₉	$(u^{14} + 15u^{13} + \dots + 430u + 67)(u^{29} + 6u^{28} + \dots + 8024u - 1461)$
c_{10}	$(u^{14} - u^{13} + \dots - 2u + 1)(u^{29} - 4u^{28} + \dots + 590u - 1097)$
c_{11}	$(u^{14} - 2u^{13} + \dots + 9u + 1)(u^{29} - 3u^{28} + \dots - 6023859u - 792917)$
c_{12}	$(u^{14} + u^{13} + \dots + 4u^2 + 1)(u^{29} + 2u^{27} + \dots + 6u + 1)$ 15

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{14} + 12y^{12} + \dots - 29y + 1)(y^{29} + 51y^{28} + \dots + 1909y - 81)$
c_2, c_6	$(y^{14} + 4y^{13} + \dots + 11y + 1)(y^{29} - y^{28} + \dots + 73y - 9)$
c_3	$(y^{14} - 7y^{13} + \dots - 10y + 1)(y^{29} + 30y^{27} + \dots - 538y - 121)$
c_4	$(y^{14} - 15y^{13} + \dots - 36y + 1)(y^{29} - 48y^{28} + \dots + 26604y - 2401)$
c_5,c_{11}	$(y^{14} + 2y^{13} + \dots - 3y + 1)$ $\cdot (y^{29} - 99y^{28} + \dots + 5243889665927y - 628717368889)$
c_7, c_{10}	$(y^{14} + 3y^{13} + \dots + 2y + 1)(y^{29} + 50y^{28} + \dots + 4466238y - 1203409)$
c_8	$(y^{14} + 12y^{13} + \dots + 5y + 1)(y^{29} + 31y^{28} + \dots - 4491917y - 253009)$
c_9	$(y^{14} - 13y^{13} + \dots + 12482y + 4489)$ $\cdot (y^{29} - 62y^{28} + \dots - 12595514y - 2134521)$
c_{12}	$(y^{14} + 5y^{13} + \dots + 8y + 1)(y^{29} + 4y^{28} + \dots + 12y - 1)$