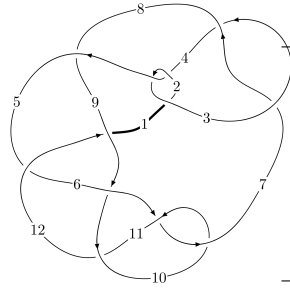
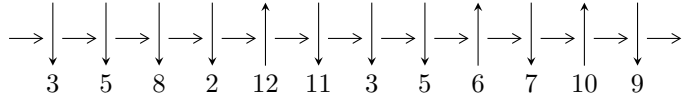


12n<sub>0150</sub> (K12n<sub>0150</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

**Ideals for irreducible components<sup>2</sup> of  $X_{\text{par}}$**

$$I_1^u = \langle u^{36} - u^{35} + \dots + b - 2u, -u^{36} + u^{35} + \dots + a + 1, u^{38} - 2u^{37} + \dots - 5u + 1 \rangle$$

$$I_2^u = \langle b + u, -u^3 + a - u + 1, u^4 + u^2 - u + 1 \rangle$$

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

\* 3 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 48 representations.

<sup>1</sup>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>).

<sup>2</sup>All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$I_1^u = \langle u^{36} - u^{35} + \dots + b - 2u, -u^{36} + u^{35} + \dots + a + 1, u^{38} - 2u^{37} + \dots - 5u + 1 \rangle \quad \text{I.}$$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^{36} - u^{35} + \dots - 2u^3 - 1 \\ -u^{36} + u^{35} + \dots - 3u^2 + 2u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^{34} + u^{33} + \dots + 3u - 1 \\ -u^{36} + u^{35} + \dots - 2u^2 + 2u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^{36} - u^{35} + \dots - 4u + 2 \\ -u^{36} - u^{35} + \dots + u^2 - u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^{21} + 4u^{19} + 9u^{17} + 12u^{15} + 12u^{13} + 10u^{11} + 9u^9 + 6u^7 + 3u^5 + u \\ u^{23} + 5u^{21} + \dots + 2u^3 + u \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes

$$= 4u^{37} - 12u^{36} + 46u^{35} - 104u^{34} + 244u^{33} - 468u^{32} + 837u^{31} - 1403u^{30} + 2076u^{29} - 3097u^{28} + 3974u^{27} - 5326u^{26} + 6111u^{25} - 7416u^{24} + 7798u^{23} - 8645u^{22} + 8473u^{21} - 8673u^{20} + 8000u^{19} - 7644u^{18} + 6639u^{17} - 5962u^{16} + 4886u^{15} - 4146u^{14} + 3236u^{13} - 2602u^{12} + 1976u^{11} - 1512u^{10} + 1108u^9 - 780u^8 + 540u^7 - 353u^6 + 237u^5 - 147u^4 + 100u^3 - 62u^2 + 37u - 18$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{38} + 57u^{37} + \dots + 4u + 1$
$c_2, c_4$	$u^{38} - 11u^{37} + \dots + 10u - 1$
$c_3, c_7$	$u^{38} - u^{37} + \dots - 1024u - 1024$
$c_5$	$u^{38} + 10u^{37} + \dots + 313u + 43$
$c_6, c_{10}$	$u^{38} + 2u^{37} + \dots + 5u + 1$
$c_8$	$u^{38} + 2u^{37} + \dots + 3u + 1$
$c_9$	$u^{38} - 2u^{37} + \dots - 24u + 8$
$c_{11}$	$u^{38} - 18u^{37} + \dots + 5u + 1$
$c_{12}$	$u^{38} - 6u^{37} + \dots - 2663u + 61$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{38} - 141y^{37} + \dots - 12y + 1$
$c_2, c_4$	$y^{38} - 57y^{37} + \dots - 4y + 1$
$c_3, c_7$	$y^{38} - 63y^{37} + \dots + 8912896y + 1048576$
$c_5$	$y^{38} + 18y^{37} + \dots + 243y + 1849$
$c_6, c_{10}$	$y^{38} + 18y^{37} + \dots - 5y + 1$
$c_8$	$y^{38} - 78y^{37} + \dots - 5y + 1$
$c_9$	$y^{38} - 6y^{37} + \dots - 1680y + 64$
$c_{11}$	$y^{38} + 6y^{37} + \dots - 77y + 1$
$c_{12}$	$y^{38} - 18y^{37} + \dots - 5705405y + 3721$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.190184 + 1.006430I$		
$a = 0.666672 + 0.650134I$	$-0.043597 + 0.941262I$	$-5.60914 - 1.60302I$
$b = 0.171965 - 0.057486I$		
$u = 0.190184 - 1.006430I$		
$a = 0.666672 - 0.650134I$	$-0.043597 - 0.941262I$	$-5.60914 + 1.60302I$
$b = 0.171965 + 0.057486I$		
$u = -0.330777 + 0.907409I$		
$a = 0.06706 + 2.30485I$	$-0.97161 + 1.42227I$	$-5.26135 - 0.25979I$
$b = 1.66441 - 0.88267I$		
$u = -0.330777 - 0.907409I$		
$a = 0.06706 - 2.30485I$	$-0.97161 - 1.42227I$	$-5.26135 + 0.25979I$
$b = 1.66441 + 0.88267I$		
$u = -0.732889 + 0.615448I$		
$a = -0.77820 - 1.38388I$	$-16.4068 + 4.3334I$	$-12.33818 - 2.98248I$
$b = 0.885934 + 0.086371I$		
$u = -0.732889 - 0.615448I$		
$a = -0.77820 + 1.38388I$	$-16.4068 - 4.3334I$	$-12.33818 + 2.98248I$
$b = 0.885934 - 0.086371I$		
$u = 0.392112 + 1.025700I$		
$a = -0.398310 - 0.990025I$	$1.28562 - 2.93709I$	$-3.65871 + 5.49454I$
$b = 0.344483 + 0.379769I$		
$u = 0.392112 - 1.025700I$		
$a = -0.398310 + 0.990025I$	$1.28562 + 2.93709I$	$-3.65871 - 5.49454I$
$b = 0.344483 - 0.379769I$		
$u = 0.808282 + 0.376060I$		
$a = -0.308296 - 1.239560I$	$-15.0919 + 7.2035I$	$-11.42537 - 2.83717I$
$b = 2.75261 - 1.36307I$		
$u = 0.808282 - 0.376060I$		
$a = -0.308296 + 1.239560I$	$-15.0919 - 7.2035I$	$-11.42537 + 2.83717I$
$b = 2.75261 + 1.36307I$		

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.283537 + 1.096170I$ $a = -0.116887 - 1.308640I$ $b = -0.749932 + 0.972888I$	$3.86766 + 0.18519I$	$3.63146 - 0.12416I$
$u = -0.283537 - 1.096170I$ $a = -0.116887 + 1.308640I$ $b = -0.749932 - 0.972888I$	$3.86766 - 0.18519I$	$3.63146 + 0.12416I$
$u = -0.694068 + 0.485559I$ $a = 1.073670 - 0.121248I$ $b = -0.86069 - 1.59817I$	$-4.83970 + 0.46505I$	$-12.83571 - 0.64239I$
$u = -0.694068 - 0.485559I$ $a = 1.073670 + 0.121248I$ $b = -0.86069 + 1.59817I$	$-4.83970 - 0.46505I$	$-12.83571 + 0.64239I$
$u = 0.725358 + 0.427516I$ $a = 0.910150 + 0.189413I$ $b = -1.062290 + 0.018396I$	$-4.53414 + 2.77322I$	$-12.23678 - 1.99066I$
$u = 0.725358 - 0.427516I$ $a = 0.910150 - 0.189413I$ $b = -1.062290 - 0.018396I$	$-4.53414 - 2.77322I$	$-12.23678 + 1.99066I$
$u = 0.520749 + 1.037540I$ $a = -0.591726 - 0.036334I$ $b = -0.0031098 - 0.1233600I$	$0.43968 - 3.37790I$	$-4.33141 + 2.37402I$
$u = 0.520749 - 1.037540I$ $a = -0.591726 + 0.036334I$ $b = -0.0031098 + 0.1233600I$	$0.43968 + 3.37790I$	$-4.33141 - 2.37402I$
$u = -0.635679 + 0.975329I$ $a = -0.60721 + 1.51515I$ $b = -0.083609 - 0.380918I$	$-15.3384 + 0.8717I$	$-10.72381 - 2.45601I$
$u = -0.635679 - 0.975329I$ $a = -0.60721 - 1.51515I$ $b = -0.083609 + 0.380918I$	$-15.3384 - 0.8717I$	$-10.72381 + 2.45601I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.169305 + 1.157370I$ $a = -2.96351 + 1.28333I$ $b = 1.31226 - 2.38449I$	$-10.03480 + 4.57409I$	$-5.57316 - 1.67266I$
$u = 0.169305 - 1.157370I$ $a = -2.96351 - 1.28333I$ $b = 1.31226 + 2.38449I$	$-10.03480 - 4.57409I$	$-5.57316 + 1.67266I$
$u = -0.578647 + 1.054140I$ $a = -1.47418 - 2.16069I$ $b = -0.53165 + 2.48877I$	$-3.15884 + 4.44653I$	$-9.57300 - 4.70180I$
$u = -0.578647 - 1.054140I$ $a = -1.47418 + 2.16069I$ $b = -0.53165 - 2.48877I$	$-3.15884 - 4.44653I$	$-9.57300 + 4.70180I$
$u = -0.698518 + 0.329444I$ $a = -0.420323 + 0.439871I$ $b = 0.191136 + 0.950537I$	$-0.20642 - 2.47480I$	$-3.77716 + 2.78494I$
$u = -0.698518 - 0.329444I$ $a = -0.420323 - 0.439871I$ $b = 0.191136 - 0.950537I$	$-0.20642 + 2.47480I$	$-3.77716 - 2.78494I$
$u = 0.581924 + 1.085040I$ $a = 0.77887 + 1.33818I$ $b = -0.985828 - 0.678181I$	$-2.59793 - 7.77172I$	$-8.83321 + 6.58917I$
$u = 0.581924 - 1.085040I$ $a = 0.77887 - 1.33818I$ $b = -0.985828 + 0.678181I$	$-2.59793 + 7.77172I$	$-8.83321 - 6.58917I$
$u = 0.561548 + 0.523699I$ $a = -0.514245 + 0.265142I$ $b = 0.143026 + 0.191094I$	$-1.11182 - 0.98490I$	$-6.72845 + 3.76025I$
$u = 0.561548 - 0.523699I$ $a = -0.514245 - 0.265142I$ $b = 0.143026 - 0.191094I$	$-1.11182 + 0.98490I$	$-6.72845 - 3.76025I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.424583 + 1.162280I$ $a = 3.07997 + 1.73117I$ $b = -3.42587 + 1.10441I$	$-6.91800 - 4.12327I$	$-5.26243 + 3.48548I$
$u = 0.424583 - 1.162280I$ $a = 3.07997 - 1.73117I$ $b = -3.42587 - 1.10441I$	$-6.91800 + 4.12327I$	$-5.26243 - 3.48548I$
$u = -0.549992 + 1.111450I$ $a = 0.916076 + 1.068210I$ $b = 0.33127 - 1.48940I$	$2.05645 + 7.27341I$	$-0.29909 - 6.10879I$
$u = -0.549992 - 1.111450I$ $a = 0.916076 - 1.068210I$ $b = 0.33127 + 1.48940I$	$2.05645 - 7.27341I$	$-0.29909 + 6.10879I$
$u = 0.738732$ $a = -1.26309$ $b = -2.66464$	$-10.3080$	$-9.27210$
$u = 0.596983 + 1.127320I$ $a = -0.65101 - 3.73015I$ $b = 3.48928 + 1.94339I$	$-12.8566 - 12.4568I$	$-8.47504 + 6.79450I$
$u = 0.596983 - 1.127320I$ $a = -0.65101 + 3.73015I$ $b = 3.48928 - 1.94339I$	$-12.8566 + 12.4568I$	$-8.47504 - 6.79450I$
$u = 0.327423$ $a = -1.07406$ $b = 0.497882$	$-1.00232$	$-10.1070$



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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^3 + u - 1 \\ -u \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} u^3 + u - 1 \\ -u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

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

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

(ii) Obstruction class = 1

(iii) Cusp Shapes =  $3u^3 + 4u^2 - u - 10$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.547424 + 0.585652I$	$-2.62503 - 1.39709I$	$-11.91838 + 2.95607I$
$a = -0.851808 + 0.911292I$		
$b = -0.547424 - 0.585652I$		
$u = 0.547424 - 0.585652I$	$-2.62503 + 1.39709I$	$-11.91838 - 2.95607I$
$a = -0.851808 - 0.911292I$		
$b = -0.547424 + 0.585652I$		
$u = -0.547424 + 1.120870I$	$0.98010 + 7.64338I$	$-7.58162 - 7.23121I$
$a = 0.351808 + 0.720342I$		
$b = 0.547424 - 1.120870I$		
$u = -0.547424 - 1.120870I$	$0.98010 - 7.64338I$	$-7.58162 + 7.23121I$
$a = 0.351808 - 0.720342I$		
$b = 0.547424 + 1.120870I$		

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

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

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

$$a_{12} = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^4 - u^2 \\ u^5 + u^4 + 2u^3 + 2u^2 + 2u + 1 \end{pmatrix}$$

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

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

$$a_4 = \begin{pmatrix} -u^4 - u^2 \\ u^5 + u^4 + 2u^3 + 2u^2 + 2u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u^3 \\ u^3 + u \end{pmatrix}$$

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

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

(ii) Obstruction class = 1

(iii) Cusp Shapes =  $-u^4 + 3u^3 - u^2 + 4u - 7$

(iv) u-Polynomials at the component

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

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1, c_2, c_4$	$(y - 1)^6$
$c_3, c_7$	$y^6$
$c_5, c_{11}$	$y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1$
$c_6, c_8, c_{10}$ $c_{12}$	$y^6 + 3y^5 + 4y^4 + 2y^3 + 1$
$c_9$	$(y^3 - y^2 + 2y - 1)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.498832 + 1.001300I$ $a = 1.183530 + 0.507021I$ $b = -1.39861 + 0.80012I$	$-1.37919 - 2.82812I$	$-7.94996 + 3.74291I$
$u = 0.498832 - 1.001300I$ $a = 1.183530 - 0.507021I$ $b = -1.39861 - 0.80012I$	$-1.37919 + 2.82812I$	$-7.94996 - 3.74291I$
$u = -0.284920 + 1.115140I$ $a = 0.215080 - 0.841795I$ $b = -0.784920 + 0.841795I$	2.75839	$-4.80521 + 0.27335I$
$u = -0.284920 - 1.115140I$ $a = 0.215080 + 0.841795I$ $b = -0.784920 - 0.841795I$	2.75839	$-4.80521 - 0.27335I$
$u = -0.713912 + 0.305839I$ $a = -0.398606 + 0.800120I$ $b = 0.183526 + 0.507021I$	$-1.37919 - 2.82812I$	$-10.74483 + 3.34054I$
$u = -0.713912 - 0.305839I$ $a = -0.398606 - 0.800120I$ $b = 0.183526 - 0.507021I$	$-1.37919 + 2.82812I$	$-10.74483 - 3.34054I$



#### IV. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$((u - 1)^{10})(u^{38} + 57u^{37} + \dots + 4u + 1)$
$c_2$	$((u - 1)^{10})(u^{38} - 11u^{37} + \dots + 10u - 1)$
$c_3, c_7$	$u^{10}(u^{38} - u^{37} + \dots - 1024u - 1024)$
$c_4$	$((u + 1)^{10})(u^{38} - 11u^{37} + \dots + 10u - 1)$
$c_5$	$(u^4 + 2u^3 + 3u^2 + u + 1)(u^6 + 3u^5 + 4u^4 + 2u^3 + 1)$ $\cdot (u^{38} + 10u^{37} + \dots + 313u + 43)$
$c_6$	$(u^4 + u^2 - u + 1)(u^6 + u^5 + 2u^4 + 2u^3 + 2u^2 + 2u + 1)$ $\cdot (u^{38} + 2u^{37} + \dots + 5u + 1)$
$c_8$	$(u^4 + u^2 + u + 1)(u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1)$ $\cdot (u^{38} + 2u^{37} + \dots + 3u + 1)$
$c_9$	$((u^3 - u^2 + 1)^2)(u^4 + 3u^3 + \dots + 3u + 2)(u^{38} - 2u^{37} + \dots - 24u + 8)$
$c_{10}$	$(u^4 + u^2 + u + 1)(u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1)$ $\cdot (u^{38} + 2u^{37} + \dots + 5u + 1)$
$c_{11}$	$(u^4 - 2u^3 + 3u^2 - u + 1)(u^6 - 3u^5 + 4u^4 - 2u^3 + 1)$ $\cdot (u^{38} - 18u^{37} + \dots + 5u + 1)$
$c_{12}$	$(u^4 + u^2 + u + 1)(u^6 - u^5 + 2u^4 - 2u^3 + 2u^2 - 2u + 1)$ $\cdot (u^{38} - 6u^{37} + \dots - 2663u + 61)$

## V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$((y-1)^{10})(y^{38} - 141y^{37} + \dots - 12y + 1)$
$c_2, c_4$	$((y-1)^{10})(y^{38} - 57y^{37} + \dots - 4y + 1)$
$c_3, c_7$	$y^{10}(y^{38} - 63y^{37} + \dots + 8912896y + 1048576)$
$c_5$	$(y^4 + 2y^3 + 7y^2 + 5y + 1)(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)$ $\cdot (y^{38} + 18y^{37} + \dots + 243y + 1849)$
$c_6, c_{10}$	$(y^4 + 2y^3 + 3y^2 + y + 1)(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)$ $\cdot (y^{38} + 18y^{37} + \dots - 5y + 1)$
$c_8$	$(y^4 + 2y^3 + 3y^2 + y + 1)(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)$ $\cdot (y^{38} - 78y^{37} + \dots - 5y + 1)$
$c_9$	$(y^3 - y^2 + 2y - 1)^2(y^4 - y^3 + 2y^2 + 7y + 4)$ $\cdot (y^{38} - 6y^{37} + \dots - 1680y + 64)$
$c_{11}$	$(y^4 + 2y^3 + 7y^2 + 5y + 1)(y^6 - y^5 + 4y^4 - 2y^3 + 8y^2 + 1)$ $\cdot (y^{38} + 6y^{37} + \dots - 77y + 1)$
$c_{12}$	$(y^4 + 2y^3 + 3y^2 + y + 1)(y^6 + 3y^5 + 4y^4 + 2y^3 + 1)$ $\cdot (y^{38} - 18y^{37} + \dots - 5705405y + 3721)$