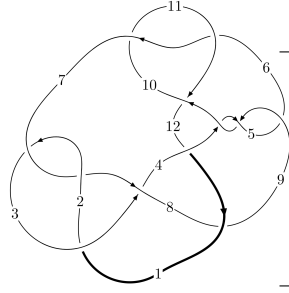
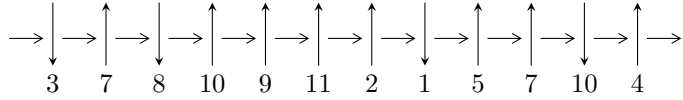


12n<sub>0550</sub> (K12n<sub>0550</sub>)



A knot diagram<sup>1</sup>

**Linearized knot diagram**



**Solving Sequence**

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

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

$$I_1^u = \langle u^{16} - 3u^{15} + \dots + b + 3, -3u^{17} + 7u^{16} + \dots + 2a + 1, u^{18} - 3u^{17} + \dots - 5u + 2 \rangle$$

$$I_2^u = \langle -u^{10} - 2u^8 - 3u^6 - u^5 - 2u^4 - u^3 - u^2 + b - u - 1, \\ u^{11} + u^{10} + 2u^9 + 2u^8 + 3u^7 + 3u^6 + 2u^5 + u^4 + u^3 + a + u, u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1 \rangle$$

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

\* 3 irreducible components of  $\dim_{\mathbb{C}} = 0$ , with total 40 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.**

$$I_1^u = \langle u^{16} - 3u^{15} + \dots + b + 3, -3u^{17} + 7u^{16} + \dots + 2a + 1, u^{18} - 3u^{17} + \dots - 5u + 2 \rangle$$

**(i) Arc colorings**

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} \frac{3}{2}u^{17} - \frac{7}{2}u^{16} + \dots + \frac{7}{2}u - \frac{1}{2} \\ -u^{16} + 3u^{15} + \dots + 4u - 3 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -\frac{1}{2}u^{17} + \frac{3}{2}u^{16} + \dots - \frac{3}{2}u + \frac{1}{2} \\ u^{17} - 2u^{16} + \dots + 3u - 1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} \frac{5}{2}u^{17} - \frac{11}{2}u^{16} + \dots + \frac{11}{2}u - \frac{3}{2} \\ -2u^{16} + 5u^{15} + \dots + 7u - 5 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{1}{2}u^{17} + \frac{3}{2}u^{16} + \dots - \frac{1}{2}u + \frac{1}{2} \\ 2u^{17} - 3u^{16} + \dots + 2u - 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$

**(ii) Obstruction class = -1**

$$\text{(iii) Cusp Shapes} = -2u^{17} + 6u^{16} - 12u^{15} + 22u^{14} - 24u^{13} + 40u^{12} - 34u^{11} + 46u^{10} - 32u^9 + 26u^8 - 22u^7 + 6u^6 + 2u^5 - 10u^4 + 16u^3 + 2u^2 + 2u + 2$$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$u^{18} + 9u^{17} + \dots + 3u + 4$
$c_2, c_7$	$u^{18} + 3u^{17} + \dots + 5u + 2$
$c_3$	$u^{18} - 3u^{17} + \dots - 123u + 34$
$c_4, c_5, c_6$ $c_9, c_{10}$	$u^{18} + 17u^{16} + \dots + 6u^2 + 1$
$c_8$	$u^{18} + 15u^{17} + \dots + 1169u + 266$
$c_{11}$	$u^{18} + 34u^{17} + \dots + 12u + 1$
$c_{12}$	$u^{18} + u^{17} + \dots + 265u + 160$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$y^{18} + y^{17} + \dots + 191y + 16$
$c_2, c_7$	$y^{18} + 9y^{17} + \dots + 3y + 4$
$c_3$	$y^{18} - 7y^{17} + \dots - 3909y + 1156$
$c_4, c_5, c_6$ $c_9, c_{10}$	$y^{18} + 34y^{17} + \dots + 12y + 1$
$c_8$	$y^{18} - 3y^{17} + \dots + 155491y + 70756$
$c_{11}$	$y^{18} - 126y^{17} + \dots + 16y + 1$
$c_{12}$	$y^{18} + 85y^{17} + \dots - 550545y + 25600$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.900621 + 0.268664I$ $a = -0.729720 + 0.016572I$ $b = -0.20830 - 2.38570I$	$-17.8823 - 5.8715I$	$1.17869 + 1.87367I$
$u = 0.900621 - 0.268664I$ $a = -0.729720 - 0.016572I$ $b = -0.20830 + 2.38570I$	$-17.8823 + 5.8715I$	$1.17869 - 1.87367I$
$u = 0.297755 + 1.056830I$ $a = 0.151471 - 1.118820I$ $b = 0.648988 + 0.730249I$	$-3.32385 + 0.53851I$	$-1.31320 + 1.23447I$
$u = 0.297755 - 1.056830I$ $a = 0.151471 + 1.118820I$ $b = 0.648988 - 0.730249I$	$-3.32385 - 0.53851I$	$-1.31320 - 1.23447I$
$u = -0.750892 + 0.811110I$ $a = -1.272950 + 0.346188I$ $b = 0.598966 - 0.460694I$	$-14.5019 - 2.7975I$	$1.40873 + 2.65752I$
$u = -0.750892 - 0.811110I$ $a = -1.272950 - 0.346188I$ $b = 0.598966 + 0.460694I$	$-14.5019 + 2.7975I$	$1.40873 - 2.65752I$
$u = -0.482590 + 1.071550I$ $a = 0.264991 - 0.374329I$ $b = -0.027718 + 0.293336I$	$-0.95248 - 3.40681I$	$4.19440 + 2.15670I$
$u = -0.482590 - 1.071550I$ $a = 0.264991 + 0.374329I$ $b = -0.027718 - 0.293336I$	$-0.95248 + 3.40681I$	$4.19440 - 2.15670I$
$u = 0.541968 + 1.089520I$ $a = -0.848196 + 0.994100I$ $b = -0.205313 - 1.329710I$	$-1.65747 + 6.51690I$	$2.73570 - 9.24962I$
$u = 0.541968 - 1.089520I$ $a = -0.848196 - 0.994100I$ $b = -0.205313 + 1.329710I$	$-1.65747 - 6.51690I$	$2.73570 + 9.24962I$

Solutions to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.643322 + 0.355418I$		
$a = 0.486969 + 0.304277I$	$0.44494 - 1.87013I$	$6.06834 + 5.46541I$
$b = -0.228450 + 0.806417I$		
$u = 0.643322 - 0.355418I$		
$a = 0.486969 - 0.304277I$	$0.44494 + 1.87013I$	$6.06834 - 5.46541I$
$b = -0.228450 - 0.806417I$		
$u = 0.266121 + 1.276470I$		
$a = -0.55947 + 2.38028I$	$16.5141 - 2.0953I$	$-3.38488 - 0.11711I$
$b = -1.03140 - 1.90393I$		
$u = 0.266121 - 1.276470I$		
$a = -0.55947 - 2.38028I$	$16.5141 + 2.0953I$	$-3.38488 + 0.11711I$
$b = -1.03140 + 1.90393I$		
$u = -0.504699 + 0.453241I$		
$a = 0.598131 + 0.161265I$	$0.920321 - 0.679889I$	$8.59008 + 5.05445I$
$b = -0.263286 + 0.046770I$		
$u = -0.504699 - 0.453241I$		
$a = 0.598131 - 0.161265I$	$0.920321 + 0.679889I$	$8.59008 - 5.05445I$
$b = -0.263286 - 0.046770I$		
$u = 0.588394 + 1.196870I$		
$a = 2.15878 - 1.76754I$	$18.7937 + 11.3151I$	$-1.47787 - 5.35681I$
$b = -0.28348 + 2.92630I$		
$u = 0.588394 - 1.196870I$		
$a = 2.15878 + 1.76754I$	$18.7937 - 11.3151I$	$-1.47787 + 5.35681I$
$b = -0.28348 - 2.92630I$		

$$\text{II. } I_2^u = \langle -u^{10} - 2u^8 + \dots + b - 1, u^{11} + u^{10} + \dots + a + u, u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1 \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} -u^{11} - u^{10} - 2u^9 - 2u^8 - 3u^7 - 3u^6 - 2u^5 - u^4 - u^3 - u \\ u^{10} + 2u^8 + 3u^6 + u^5 + 2u^4 + u^3 + u^2 + u + 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} u^{11} - u^{10} + 2u^9 - 3u^8 + 3u^7 - 4u^6 + 2u^5 - 2u^4 + u^3 + u - 1 \\ -u^{11} - 2u^9 + u^8 - 2u^7 + 2u^6 + 2u^4 + u^3 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -2u^{11} - u^{10} - 4u^9 - 2u^8 - 5u^7 - 3u^6 - 2u^5 - u^4 - u \\ u^{11} + u^{10} + 3u^9 + 2u^8 + 4u^7 + 3u^6 + 4u^5 + 2u^4 + 2u^3 + u^2 + 2u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{11} - u^{10} + 2u^9 - 3u^8 + 3u^7 - 4u^6 + 2u^5 - 2u^4 + 2u^3 + u - 1 \\ -u^{11} - 2u^9 + u^8 - 2u^7 + 2u^6 + 2u^4 - u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} u^8 + u^6 + u^4 + 1 \\ u^{10} + 2u^8 + 3u^6 + 2u^4 + u^2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -u^{11} - 2u^9 - 2u^7 + u^3 \\ u^{11} + 3u^9 + 4u^7 + 3u^5 + u^3 + u \end{pmatrix}$$

(ii) Obstruction class = 1

$$\text{(iii) Cusp Shapes} = -4u^{10} - 12u^8 - 16u^6 - 8u^4 - 4$$

(iv) u-Polynomials at the component

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



(v) Riley Polynomials at the component

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

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.295542 + 1.002190I$ $a = -0.48664 - 2.49244I$ $b = 1.92274 + 0.99741I$	$-5.18047 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 0.295542 - 1.002190I$ $a = -0.48664 + 2.49244I$ $b = 1.92274 - 0.99741I$	$-5.18047 - 0.92430I$	$-5.71672 + 0.79423I$
$u = -0.295542 + 1.002190I$ $a = -0.883753 - 0.365919I$ $b = 0.593678 - 0.140919I$	$-5.18047 - 0.92430I$	$-5.71672 + 0.79423I$
$u = -0.295542 - 1.002190I$ $a = -0.883753 + 0.365919I$ $b = 0.593678 + 0.140919I$	$-5.18047 + 0.92430I$	$-5.71672 - 0.79423I$
$u = 0.664531 + 0.428243I$ $a = 1.116540 - 0.158471I$ $b = 0.37850 + 1.59457I$	$-1.39926 - 0.92430I$	$1.71672 + 0.79423I$
$u = 0.664531 - 0.428243I$ $a = 1.116540 + 0.158471I$ $b = 0.37850 - 1.59457I$	$-1.39926 + 0.92430I$	$1.71672 - 0.79423I$
$u = -0.664531 + 0.428243I$ $a = 0.719425 - 0.699888I$ $b = -0.212587 + 0.409813I$	$-1.39926 + 0.92430I$	$1.71672 - 0.79423I$
$u = -0.664531 - 0.428243I$ $a = 0.719425 + 0.699888I$ $b = -0.212587 - 0.409813I$	$-1.39926 - 0.92430I$	$1.71672 + 0.79423I$
$u = 0.558752 + 1.073950I$ $a = -2.11043 + 0.88125I$ $b = 0.71759 - 2.27409I$	$-3.28987 + 5.69302I$	$-2.00000 - 5.51057I$
$u = 0.558752 - 1.073950I$ $a = -2.11043 - 0.88125I$ $b = 0.71759 + 2.27409I$	$-3.28987 - 5.69302I$	$-2.00000 + 5.51057I$

Solutions to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.558752 + 1.073950I$	$-3.28987 - 5.69302I$	$-2.00000 + 5.51057I$
$a = 0.644857 + 0.118748I$		
$b = -0.399916 + 0.126193I$		
$u = -0.558752 - 1.073950I$	$-3.28987 + 5.69302I$	$-2.00000 - 5.51057I$
$a = 0.644857 - 0.118748I$		
$b = -0.399916 - 0.126193I$		

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

(i) Arc colorings

$$a_2 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

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

$$a_{10} = \begin{pmatrix} a \\ u^4a + 2u^2a - u^3 - au + a - u + 1 \end{pmatrix}$$

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

$$a_{11} = \begin{pmatrix} u^4a + u^2a - u^3 - au + 2a - u + 1 \\ u^4a + u^4 + 3u^2a - au + 2u^2 + 2a + 2 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^4a + 2u^2a - 3u^3 - au - 2u^2 - 3u - 3 \\ 2u^4a + u^4 + 2u^2a + 2u^3 - au + 2a + 2u + 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -2u^3 - u \\ 2u^4 + 2u^3 + 2u^2 + u + 2 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 2u^3 + 1 \\ -2u^4 - 2u^3 - 2u^2 - 2 \end{pmatrix}$$

(ii) Obstruction class = -1

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

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
$c_1$	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)^2$
$c_2, c_7$	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)^2$
$c_3$	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)^2$
$c_4, c_5, c_6$ $c_9, c_{10}$	$u^{10} - u^9 + 8u^8 - 4u^7 + 28u^6 - 6u^5 + 53u^4 + 5u^3 + 50u^2 + 12u + 17$
$c_8$	$(u^5 - 5u^4 + 8u^3 - 3u^2 - u - 1)^2$
$c_{11}$	$u^{10} + 15u^9 + \cdots + 1556u + 289$
$c_{12}$	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2$
$c_2, c_7$	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2$
$c_3, c_{12}$	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2$
$c_4, c_5, c_6$ $c_9, c_{10}$	$y^{10} + 15y^9 + \dots + 1556y + 289$
$c_8$	$(y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1)^2$
$c_{11}$	$y^{10} - y^9 + \dots - 3940y + 83521$

(vi) Complex Volumes and Cusp Shapes

Solutions to $I_3^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.339110 + 0.822375I$ $a = 0.55867 - 1.51591I$ $b = 0.549371 - 0.042056I$	$-3.61897 + 1.53058I$	$1.48489 - 4.43065I$
$u = 0.339110 + 0.822375I$ $a = -1.46526 - 0.97188I$ $b = 1.65698 + 0.38291I$	$-3.61897 + 1.53058I$	$1.48489 - 4.43065I$
$u = 0.339110 - 0.822375I$ $a = 0.55867 + 1.51591I$ $b = 0.549371 + 0.042056I$	$-3.61897 - 1.53058I$	$1.48489 + 4.43065I$
$u = 0.339110 - 0.822375I$ $a = -1.46526 + 0.97188I$ $b = 1.65698 - 0.38291I$	$-3.61897 - 1.53058I$	$1.48489 + 4.43065I$
$u = -0.766826$ $a = -0.595741 + 0.538146I$ $b = 0.25856 + 1.76977I$	$-5.69095$	$0.518860$
$u = -0.766826$ $a = -0.595741 - 0.538146I$ $b = 0.25856 - 1.76977I$	$-5.69095$	$0.518860$
$u = -0.455697 + 1.200150I$ $a = -1.45542 - 1.61863I$ $b = -0.53813 + 1.89796I$	$-9.16243 - 4.40083I$	$-2.74431 + 3.49859I$
$u = -0.455697 + 1.200150I$ $a = 0.95775 + 2.38693I$ $b = 0.57321 - 2.51986I$	$-9.16243 - 4.40083I$	$-2.74431 + 3.49859I$
$u = -0.455697 - 1.200150I$ $a = -1.45542 + 1.61863I$ $b = -0.53813 - 1.89796I$	$-9.16243 + 4.40083I$	$-2.74431 - 3.49859I$
$u = -0.455697 - 1.200150I$ $a = 0.95775 - 2.38693I$ $b = 0.57321 + 2.51986I$	$-9.16243 + 4.40083I$	$-2.74431 - 3.49859I$

#### IV. u-Polynomials

Crossings	u-Polynomials at each crossing
$c_1$	$(u^5 + 3u^4 + 4u^3 + u^2 - u - 1)^2(u^6 - 3u^5 + 5u^4 - 4u^3 + 2u^2 - u + 1)^2$ $\cdot (u^{18} + 9u^{17} + \dots + 3u + 4)$
$c_2, c_7$	$(u^5 - u^4 + 2u^3 - u^2 + u - 1)^2(u^{12} + 3u^{10} + 5u^8 + 4u^6 + 2u^4 + u^2 + 1)$ $\cdot (u^{18} + 3u^{17} + \dots + 5u + 2)$
$c_3$	$(u^5 + u^4 - 2u^3 - u^2 + u - 1)^2(u^{12} - u^{10} + 5u^8 + 6u^4 - 3u^2 + 1)$ $\cdot (u^{18} - 3u^{17} + \dots - 123u + 34)$
$c_4, c_5, c_6$ $c_9, c_{10}$	$(u^2 + 1)^6$ $\cdot (u^{10} - u^9 + 8u^8 - 4u^7 + 28u^6 - 6u^5 + 53u^4 + 5u^3 + 50u^2 + 12u + 17)$ $\cdot (u^{18} + 17u^{16} + \dots + 6u^2 + 1)$
$c_8$	$((u^5 - 5u^4 + 8u^3 - 3u^2 - u - 1)^2)(u^{12} + 3u^{10} + \dots + u^2 + 1)$ $\cdot (u^{18} + 15u^{17} + \dots + 1169u + 266)$
$c_{11}$	$((u + 1)^{12})(u^{10} + 15u^9 + \dots + 1556u + 289)$ $\cdot (u^{18} + 34u^{17} + \dots + 12u + 1)$
$c_{12}$	$(u^5 - u^4 - 2u^3 + u^2 + u + 1)^2(u^6 - u^5 - u^4 + 2u^3 - u + 1)^2$ $\cdot (u^{18} + u^{17} + \dots + 265u + 160)$



## V. Riley Polynomials

Crossings	Riley Polynomials at each crossing
$c_1$	$(y^5 - y^4 + 8y^3 - 3y^2 + 3y - 1)^2(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^2$ $\cdot (y^{18} + y^{17} + \dots + 191y + 16)$
$c_2, c_7$	$(y^5 + 3y^4 + 4y^3 + y^2 - y - 1)^2(y^6 + 3y^5 + 5y^4 + 4y^3 + 2y^2 + y + 1)^2$ $\cdot (y^{18} + 9y^{17} + \dots + 3y + 4)$
$c_3$	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2(y^6 - y^5 + 5y^4 + 6y^2 - 3y + 1)^2$ $\cdot (y^{18} - 7y^{17} + \dots - 3909y + 1156)$
$c_4, c_5, c_6$ $c_9, c_{10}$	$((y + 1)^{12})(y^{10} + 15y^9 + \dots + 1556y + 289)$ $\cdot (y^{18} + 34y^{17} + \dots + 12y + 1)$
$c_8$	$(y^5 - 9y^4 + 32y^3 - 35y^2 - 5y - 1)^2$ $\cdot (y^6 + 3y^5 + 5y^4 + 4y^3 + 2y^2 + y + 1)^2$ $\cdot (y^{18} - 3y^{17} + \dots + 155491y + 70756)$
$c_{11}$	$((y - 1)^{12})(y^{10} - y^9 + \dots - 3940y + 83521)$ $\cdot (y^{18} - 126y^{17} + \dots + 16y + 1)$
$c_{12}$	$(y^5 - 5y^4 + 8y^3 - 3y^2 - y - 1)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^2$ $\cdot (y^{18} + 85y^{17} + \dots - 550545y + 25600)$