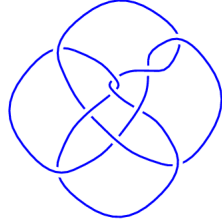
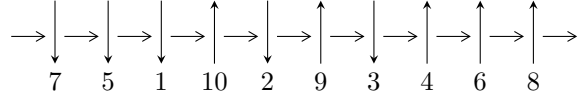


10<sub>115</sub> (K10a<sub>94</sub>)

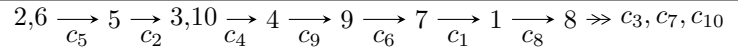


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = \bigcap_{i=1}^2 I_i^u$$

$$I_1^u = \langle u^{12} - 4u^{11} + 11u^{10} - 22u^9 + 33u^8 - 41u^7 + 40u^6 - 33u^5 + 24u^4 - 13u^3 + 8u^2 - 2u + 1, \\ - 2u^{11} + 7u^{10} - 17u^9 + 29u^8 - 34u^7 + 31u^6 - 16u^5 + 3u^4 + u^3 - 6u^2 + a + u - 4, \\ - u^{11} + 4u^{10} - 10u^9 + 18u^8 - 23u^7 + 23u^6 - 17u^5 + 10u^4 - 8u^3 + 5u^2 + b - 3u + 1 \rangle$$

$$I_2^u = \langle u^{66} - 3u^{65} + \dots + 77u + 21, \\ 3.70660 \times 10^{116}u^{65} - 1.01795 \times 10^{117}u^{64} + \dots + 2.00531 \times 10^{117}a + 8.92905 \times 10^{117}, \\ - 6.39895 \times 10^{117}u^{65} + 2.04454 \times 10^{118}u^{64} + \dots + 2.03396 \times 10^{118}b - 4.22854 \times 10^{118} \rangle$$

There are 2 irreducible components with 78 representations.

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<sup>1</sup>The knot diagram image is adapter from “C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, <http://www.indiana.edu/~knotinfo>”

$$I_1^u = \langle u^{12} - 4u^{11} + \dots - 2u + 1, -2u^{11} + 7u^{10} + \dots + a - 4, -u^{11} + 4u^{10} + \dots + b + 1 \rangle$$

I.

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

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

$$a_4 = \begin{pmatrix} -4u^{11} + 16u^{10} + \dots - 16u + 2 \\ u^{11} - 4u^{10} + \dots + 3u + 1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{11} - 7u^{10} + \dots - u + 4 \\ u^5 - 2u^4 + 4u^3 - 5u^2 + 3u - 2 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 4u^{11} - 18u^{10} + \dots + 23u - 6 \\ -2u^{11} + 7u^{10} + \dots - u - 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 4u^{11} - 17u^{10} + \dots + 24u - 6 \\ -u^{11} + 4u^{10} + \dots + 11u^2 - 6u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 4u^{11} - 17u^{10} + \dots + 19u - 4 \\ -u^{11} + 3u^{10} + \dots + 2u - 3 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes

$$= -6u^{11} + 26u^{10} - 70u^9 + 137u^8 - 198u^7 + 228u^6 - 208u^5 + 155u^4 - 112u^3 + 67u^2 - 34u + 12$$

(iv) Complex Volumes and Cusp Shapes

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.275611 - 0.671814I$ $a = -0.711883 - 0.702298I$ $b = -0.26365 - 2.63645I$	$-4.91597I$	$11.1152I$
$u = -0.275611 + 0.671814I$ $a = -0.711883 + 0.702298I$ $b = -0.26365 + 2.63645I$	$4.91597I$	$-11.1152I$
$u = 0.058582 - 0.533279I$ $a = 2.66328 - 0.11018I$ $b = 0.009607 - 0.675486I$	$-3.74262 - 3.79217I$	$1.40025 + 6.58435I$
$u = 0.058582 + 0.533279I$ $a = 2.66328 + 0.11018I$ $b = 0.009607 + 0.675486I$	$-3.74262 + 3.79217I$	$1.40025 - 6.58435I$
$u = 0.09726 - 1.42673I$ $a = 0.374835 + 0.015507I$ $b = 0.745540 + 0.810936I$	$3.74262 + 3.79217I$	$-1.40025 - 6.58435I$
$u = 0.09726 + 1.42673I$ $a = 0.374835 - 0.015507I$ $b = 0.745540 - 0.810936I$	$3.74262 - 3.79217I$	$-1.40025 + 6.58435I$
$u = 0.238381 - 0.958097I$ $a = 0.554558 + 1.261575I$ $b = 0.16536 + 1.71751I$	$3.76649 + 0.96528I$	$-2.46025 - 6.19259I$
$u = 0.238381 + 0.958097I$ $a = 0.554558 - 1.261575I$ $b = 0.16536 - 1.71751I$	$3.76649 - 0.96528I$	$-2.46025 + 6.19259I$
$u = 0.540477 - 1.222062I$ $a = -0.672801 + 0.739823I$ $b = -0.89278 + 1.69181I$	$6.92803I$	$-5.92253I$
$u = 0.540477 + 1.222062I$ $a = -0.672801 - 0.739823I$ $b = -0.89278 - 1.69181I$	$-6.92803I$	$5.92253I$

	Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	$1.340908 - 0.230586I$		
$a =$	$0.292010 - 0.664299I$	$-3.76649 - 0.96528I$	$2.46025 + 6.19259I$
$b =$	$-0.264083 - 0.377825I$		
$u =$	$1.340908 + 0.230586I$		
$a =$	$0.292010 + 0.664299I$	$-3.76649 + 0.96528I$	$2.46025 - 6.19259I$
$b =$	$-0.264083 + 0.377825I$		

$$\text{II. } I_2^u = \langle u^{66} - 3u^{65} + \dots + 77u + 21, 3.71 \times 10^{116} u^{65} - 1.02 \times 10^{117} u^{64} + \dots + 2.01 \times 10^{117} a + 8.93 \times 10^{117}, -6.40 \times 10^{117} u^{65} + 2.04 \times 10^{118} u^{64} + \dots + 2.03 \times 10^{118} b - 4.23 \times 10^{118} \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

$$a_5 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.184839u^{65} + 0.507626u^{64} + \dots - 17.4166u - 4.45269 \\ 0.314605u^{65} - 1.00520u^{64} + \dots + 20.3943u + 2.07897 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.308403u^{65} + 0.949029u^{64} + \dots - 17.9221u - 1.73509 \\ 0.481633u^{65} - 1.52717u^{64} + \dots + 24.6346u - 0.797674 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.184839u^{65} + 0.507626u^{64} + \dots - 17.4166u - 4.45269 \\ 0.400189u^{65} - 1.21192u^{64} + \dots + 27.8865u + 3.06369 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.188623u^{65} - 0.659710u^{64} + \dots + 18.7072u + 3.61763 \\ -0.173642u^{65} + 0.604165u^{64} + \dots + 4.04969u + 3.85319 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.146618u^{65} + 0.462669u^{64} + \dots - 32.6222u - 8.43124 \\ -0.0485928u^{65} + 0.355584u^{64} + \dots + 30.8350u + 9.06616 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.212665u^{65} - 0.744957u^{64} + \dots + 14.8759u + 2.51546 \\ -0.257271u^{65} + 0.795851u^{64} + \dots - 1.75953u + 2.88552 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes =  $-0.703263u^{65} + 1.38008u^{64} + \dots - 130.121u - 35.8005$

(iv) Complex Volumes and Cusp Shapes

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.195213 - 0.323364I$ $a = 0.638585 + 0.816935I$ $b = -0.242388 + 0.116276I$	$-3.08497 + 10.03664I$	$-2.48774 - 7.33059I$
$u = -1.195213 + 0.323364I$ $a = 0.638585 - 0.816935I$ $b = -0.242388 - 0.116276I$	$-3.08497 - 10.03664I$	$-2.48774 + 7.33059I$
$u = -0.734419 - 0.105022I$ $a = 0.959921 - 0.280270I$ $b = -0.275200 - 0.957750I$	$5.41602I$	$-4.57520I$
$u = -0.734419 + 0.105022I$ $a = 0.959921 + 0.280270I$ $b = -0.275200 + 0.957750I$	$-5.41602I$	$4.57520I$
$u = -0.687231 - 0.358682I$ $a = -1.20075 - 1.10102I$ $b = -0.163175 - 0.430869I$	$-1.38542 + 3.12807I$	$0.18739 - 5.83461I$
$u = -0.687231 + 0.358682I$ $a = -1.20075 + 1.10102I$ $b = -0.163175 + 0.430869I$	$-1.38542 - 3.12807I$	$0.18739 + 5.83461I$
$u = -0.68120 - 1.28817I$ $a = -0.562935 - 0.826501I$ $b = -1.06170 - 1.94740I$	$-16.6380I$	$9.37696I$
$u = -0.68120 + 1.28817I$ $a = -0.562935 + 0.826501I$ $b = -1.06170 + 1.94740I$	$16.6380I$	$-9.37696I$
$u = -0.643705 - 0.913849I$ $a = 0.205125 + 0.869703I$ $b = 0.02417 + 1.63012I$	$2.10904 - 4.58826I$	$5.96198 + 6.80019I$
$u = -0.643705 + 0.913849I$ $a = 0.205125 - 0.869703I$ $b = 0.02417 - 1.63012I$	$2.10904 + 4.58826I$	$5.96198 - 6.80019I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.542734 - 1.105869I$ $a = 0.730042 + 0.981803I$ $b = 0.84096 + 1.94152I$	$0.80844 - 7.87674I$	$4.76079 + 12.34614I$
$u = -0.542734 + 1.105869I$ $a = 0.730042 - 0.981803I$ $b = 0.84096 - 1.94152I$	$0.80844 + 7.87674I$	$4.76079 - 12.34614I$
$u = -0.499077 - 1.182907I$ $a = 0.593936 - 0.759817I$ $b = 0.02839 - 1.69149I$	$3.08497 - 10.03664I$	$2.48774 + 7.33059I$
$u = -0.499077 + 1.182907I$ $a = 0.593936 + 0.759817I$ $b = 0.02839 + 1.69149I$	$3.08497 + 10.03664I$	$2.48774 - 7.33059I$
$u = -0.458890 - 0.841270I$ $a = -0.920320 - 0.973850I$ $b = -1.33518 - 1.22881I$	$-3.75920 + 1.29912I$	$-3.74536 + 0.15014I$
$u = -0.458890 + 0.841270I$ $a = -0.920320 + 0.973850I$ $b = -1.33518 + 1.22881I$	$-3.75920 - 1.29912I$	$-3.74536 - 0.15014I$
$u = -0.396945 - 1.221128I$ $a = -0.512607 - 0.542422I$ $b = 0.12573 - 1.45523I$	$3.75920 + 1.29912I$	$3.74536 + 0.15014I$
$u = -0.396945 + 1.221128I$ $a = -0.512607 + 0.542422I$ $b = 0.12573 + 1.45523I$	$3.75920 - 1.29912I$	$3.74536 - 0.15014I$
$u = -0.360202 - 1.059137I$ $a = 0.876995 + 0.622085I$ $b = 1.60783 + 2.05818I$	$-2.39843 - 6.38163I$	$-4.17951 + 8.03965I$
$u = -0.360202 + 1.059137I$ $a = 0.876995 - 0.622085I$ $b = 1.60783 - 2.05818I$	$-2.39843 + 6.38163I$	$-4.17951 - 8.03965I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.359059 - 0.750855I$		
$a = 1.76508 + 0.73462I$	$-4.14504 - 4.87522I$	$-2.26179 + 9.07875I$
$b = 0.445942 + 0.062419I$		
$u = -0.359059 + 0.750855I$		
$a = 1.76508 - 0.73462I$	$-4.14504 + 4.87522I$	$-2.26179 - 9.07875I$
$b = 0.445942 - 0.062419I$		
$u = -0.355245 - 1.033541I$		
$a = -0.811664 + 0.456344I$	$2.30167 + 0.78056I$	$4.09013 - 4.30344I$
$b = -0.532448 + 0.602433I$		
$u = -0.355245 + 1.033541I$		
$a = -0.811664 - 0.456344I$	$2.30167 - 0.78056I$	$4.09013 + 4.30344I$
$b = -0.532448 - 0.602433I$		
$u = -0.290517 - 0.266226I$		
$a = -1.60596 + 0.54000I$	$1.36445 + 0.78938I$	$4.43693 - 1.27648I$
$b = -0.235922 - 0.223315I$		
$u = -0.290517 + 0.266226I$		
$a = -1.60596 - 0.54000I$	$1.36445 - 0.78938I$	$4.43693 + 1.27648I$
$b = -0.235922 + 0.223315I$		
$u = -0.287386 - 0.983998I$		
$a = -0.652202 + 1.134297I$	$4.24208 - 0.93364I$	$15.9161 + 3.0658I$
$b = -0.48213 + 1.72142I$		
$u = -0.287386 + 0.983998I$		
$a = -0.652202 - 1.134297I$	$4.24208 + 0.93364I$	$15.9161 - 3.0658I$
$b = -0.48213 - 1.72142I$		
$u = -0.280686 - 0.541514I$		
$a = -2.16077 - 0.75386I$	$-4.11853 + 3.35398I$	$-7.32610 + 2.92910I$
$b = 0.525952 - 0.325099I$		
$u = -0.280686 + 0.541514I$		
$a = -2.16077 + 0.75386I$	$-4.11853 - 3.35398I$	$-7.32610 - 2.92910I$
$b = 0.525952 + 0.325099I$		



Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.08218 - 1.58909I$		
$a = 0.482900 - 0.200981I$	$4.14504 + 4.87522I$	$2.26179 - 9.07875I$
$b = 0.717726 - 0.694699I$		
$u = -0.08218 + 1.58909I$		
$a = 0.482900 + 0.200981I$	$4.14504 - 4.87522I$	$2.26179 + 9.07875I$
$b = 0.717726 + 0.694699I$		
$u = 0.009834 - 0.802079I$		
$a = 1.31271 + 0.72770I$	$0.88395 - 2.01054I$	$3.45858 + 2.97810I$
$b = -0.10267 + 1.70261I$		
$u = 0.009834 + 0.802079I$		
$a = 1.31271 - 0.72770I$	$0.88395 + 2.01054I$	$3.45858 - 2.97810I$
$b = -0.10267 - 1.70261I$		
$u = 0.043435 - 0.637728I$		
$a = -0.990765 + 0.135589I$	$-4.25960I$	$-0.329447I$
$b = -0.20429 + 2.57613I$		
$u = 0.043435 + 0.637728I$		
$a = -0.990765 - 0.135589I$	$4.25960I$	$0.329447I$
$b = -0.20429 - 2.57613I$		
$u = 0.149058 - 1.034506I$		
$a = 0.536031 + 1.213218I$	$4.29717 + 0.35366I$	$9.83486 + 1.20455I$
$b = -0.01609 + 1.77821I$		
$u = 0.149058 + 1.034506I$		
$a = 0.536031 - 1.213218I$	$4.29717 - 0.35366I$	$9.83486 - 1.20455I$
$b = -0.01609 - 1.77821I$		
$u = 0.198274 - 1.381686I$		
$a = -0.412578 - 0.143942I$	$4.11853 + 3.35398I$	$7.32610 + 2.92910I$
$b = -1.21850 - 0.82029I$		
$u = 0.198274 + 1.381686I$		
$a = -0.412578 + 0.143942I$	$4.11853 - 3.35398I$	$7.32610 - 2.92910I$
$b = -1.21850 + 0.82029I$		

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.271930 - 1.178514I$ $a = -0.056295 + 0.677501I$ $b = -0.784129 + 1.017889I$	$3.01082 + 3.10826I$	$5.64725 - 5.61918I$
$u = 0.271930 + 1.178514I$ $a = -0.056295 - 0.677501I$ $b = -0.784129 - 1.017889I$	$3.01082 - 3.10826I$	$5.64725 + 5.61918I$
$u = 0.342978 - 1.152934I$ $a = 0.758574 - 0.538085I$ $b = -0.26317 - 2.11021I$	$2.39843 + 6.38163I$	$4.17951 - 8.03965I$
$u = 0.342978 + 1.152934I$ $a = 0.758574 + 0.538085I$ $b = -0.26317 + 2.11021I$	$2.39843 - 6.38163I$	$4.17951 + 8.03965I$
$u = 0.430277 - 1.187344I$ $a = -0.452422 - 0.414846I$ $b = 0.032996 - 1.401181I$	$1.38542 + 3.12807I$	$-0.18739 - 5.83461I$
$u = 0.430277 + 1.187344I$ $a = -0.452422 + 0.414846I$ $b = 0.032996 + 1.401181I$	$1.38542 - 3.12807I$	$-0.18739 + 5.83461I$
$u = 0.448635 - 1.259821I$ $a = -0.723067 + 0.828539I$ $b = -1.19204 + 1.54947I$	$1.26966 + 7.40298I$	$6.35867 - 10.60309I$
$u = 0.448635 + 1.259821I$ $a = -0.723067 - 0.828539I$ $b = -1.19204 - 1.54947I$	$1.26966 - 7.40298I$	$6.35867 + 10.60309I$
$u = 0.596579 - 1.045744I$ $a = 0.582714 - 0.323025I$ $b = 0.93558 - 1.21382I$	$-0.88395 + 2.01054I$	$-3.45858 - 2.97810I$
$u = 0.596579 + 1.045744I$ $a = 0.582714 + 0.323025I$ $b = 0.93558 + 1.21382I$	$-0.88395 - 2.01054I$	$-3.45858 + 2.97810I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.610321 - 0.270672I$ $a = -0.559429 + 0.188105I$ $b = 0.341171 - 0.464433I$	$-1.36445 + 0.78938I$	$-4.43693 - 1.27648I$
$u = 0.610321 + 0.270672I$ $a = -0.559429 - 0.188105I$ $b = 0.341171 + 0.464433I$	$-1.36445 - 0.78938I$	$-4.43693 + 1.27648I$
$u = 0.662737 - 0.747286I$ $a = 0.256901 - 1.089226I$ $b = 1.08534 - 1.50551I$	$-2.10904 + 4.58826I$	$-5.96198 - 6.80019I$
$u = 0.662737 + 0.747286I$ $a = 0.256901 + 1.089226I$ $b = 1.08534 + 1.50551I$	$-2.10904 - 4.58826I$	$-5.96198 + 6.80019I$
$u = 0.68953 - 1.34019I$ $a = 0.487703 - 0.655892I$ $b = 1.01534 - 1.90636I$	$-0.80844 + 7.87674I$	$-4.76079 - 12.34614I$
$u = 0.68953 + 1.34019I$ $a = 0.487703 + 0.655892I$ $b = 1.01534 + 1.90636I$	$-0.80844 - 7.87674I$	$-4.76079 + 12.34614I$
$u = 0.71942 - 1.28265I$ $a = -0.597921 + 0.685138I$ $b = -0.74662 + 1.21858I$	$-1.26966 + 7.40298I$	$-6.35867 - 10.60309I$
$u = 0.71942 + 1.28265I$ $a = -0.597921 - 0.685138I$ $b = -0.74662 - 1.21858I$	$-1.26966 - 7.40298I$	$-6.35867 + 10.60309I$
$u = 0.759989 - 0.676773I$ $a = -0.936124 + 0.526319I$ $b = 0.102958 - 0.423467I$	$-2.30167 + 0.78056I$	$-4.09013 - 4.30344I$
$u = 0.759989 + 0.676773I$ $a = -0.936124 - 0.526319I$ $b = 0.102958 + 0.423467I$	$-2.30167 - 0.78056I$	$-4.09013 + 4.30344I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.783137 - 0.250577I$	$-3.01082 + 3.10826I$	$-5.64725 - 5.61918I$
$a = -0.12180 + 1.46589I$		
$b = 0.275861 + 0.163091I$		
$u = 0.783137 + 0.250577I$	$-3.01082 - 3.10826I$	$-5.64725 + 5.61918I$
$a = -0.12180 - 1.46589I$		
$b = 0.275861 - 0.163091I$		
$u = 1.303580 - 0.315783I$	$-4.24208 - 0.93364I$	$-15.9161 + 3.0658I$
$a = -0.380960 + 0.662558I$		
$b = 0.546036 + 0.347944I$		
$u = 1.303580 + 0.315783I$	$-4.24208 + 0.93364I$	$-15.9161 - 3.0658I$
$a = -0.380960 - 0.662558I$		
$b = 0.546036 - 0.347944I$		
$u = 1.334981 - 0.373687I$	$-4.29717 - 0.35366I$	$-9.83486 - 1.20455I$
$a = 0.304697 - 0.689631I$		
$b = 0.203678 - 0.341465I$		
$u = 1.334981 + 0.373687I$	$-4.29717 + 0.35366I$	$-9.83486 + 1.20455I$
$a = 0.304697 + 0.689631I$		
$b = 0.203678 + 0.341465I$		

### III. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1$	$(u^{12} - 2u^{10} + u^8 - 6u^7 + 12u^5 + 4u^4 - 8u^3 + u^2 + 3u + 3)$ $(u^{66} + u^{65} + \dots - 1128u + 193)$
$c_2, c_9$	$(u^{12} - 4u^{11} + \dots - 2u + 1)(u^{66} + 3u^{65} + \dots - 77u + 21)$
$c_3$	$(u^{12} + 2u^{11} - u^9 + 6u^8 + 12u^7 + 2u^6 - 11u^5 - 5u^4 + u^3 + u^2 + 1)$ $(u^{66} + 5u^{65} + \dots + 7u + 3)$
$c_4$	$(u^{12} - 2u^{10} + u^8 + 6u^7 - 12u^5 + 4u^4 + 8u^3 + u^2 - 3u + 3)$ $(u^{66} + u^{65} + \dots - 1128u + 193)$
$c_5, c_6$	$(u^{12} + 4u^{11} + \dots + 2u + 1)(u^{66} + 3u^{65} + \dots - 77u + 21)$
$c_7$	$(u^{12} + 3u^{10} + u^9 + 3u^8 + 4u^7 + 3u^6 + 4u^5 + 3u^4 + u^3 + 3u^2 + 1)$ $(u^{66} + u^{65} + \dots + 31u + 3)$
$c_8$	$(u^{12} + 3u^{10} - u^9 + 3u^8 - 4u^7 + 3u^6 - 4u^5 + 3u^4 - u^3 + 3u^2 + 1)$ $(u^{66} + u^{65} + \dots + 31u + 3)$
$c_{10}$	$(u^{12} - 2u^{11} + u^9 + 6u^8 - 12u^7 + 2u^6 + 11u^5 - 5u^4 - u^3 + u^2 + 1)$ $(u^{66} + 5u^{65} + \dots + 7u + 3)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1$	$(y^{12} - 4y^{11} + \dots - 3y + 9)(y^{66} + 5y^{65} + \dots + 1235072y + 37249)$
$c_2, c_5, c_6$ $c_9$	$(y^{12} + 6y^{11} + \dots + 12y + 1)(y^{66} + 35y^{65} + \dots + 7259y + 441)$
$c_3$	$(y^{12} - 4y^{11} + \dots + 2y + 1)(y^{66} + y^{65} + \dots + 149y + 9)$
$c_4$	$(y^{12} - 4y^{11} + \dots - 3y + 9)(y^{66} + 5y^{65} + \dots + 1235072y + 37249)$
$c_7$	$(y^{12} + 6y^{11} + \dots + 6y + 1)(y^{66} + 3y^{65} + \dots - 31y + 9)$
$c_8$	$(y^{12} + 6y^{11} + \dots + 6y + 1)(y^{66} + 3y^{65} + \dots - 31y + 9)$
$c_{10}$	$(y^{12} - 4y^{11} + \dots + 2y + 1)(y^{66} + y^{65} + \dots + 149y + 9)$