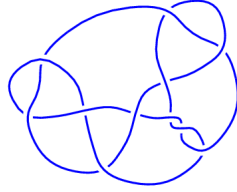
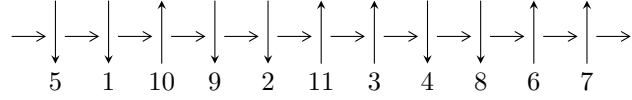


11a₁₀₉ (K11a₁₀₉)

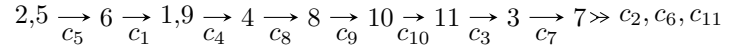


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = \bigcap_{i=1}^4 I_i^u$$

$$I_1^u = \langle u - 1, a, b - 1 \rangle$$

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

$$I_3^u = \langle u^{18} - 6u^{16} + \dots - u + 1, u^{16} - 4u^{14} + 6u^{12} - 6u^{10} + 6u^8 - 4u^6 + 2u^4 + b, \\ -u^{14} + 5u^{12} - 10u^{10} + 11u^8 - 8u^6 + 4u^4 - 2u^2 + a + 1 \rangle$$

$$I_4^u = \langle u^{47} - 2u^{46} + \dots - 5u - 5, -2.13332 \times 10^{25}u^{46} + 1.32520 \times 10^{25}u^{45} + \dots + 7.07391 \times 10^{25}b - 3.16964 \times 10^{25} \\ - 3.87852 \times 10^{25}u^{46} + 1.30869 \times 10^{26}u^{45} + \dots + 3.53695 \times 10^{26}a + 6.44082 \times 10^{26} \rangle$$

There are 4 irreducible components with 70 representations.

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

$$\text{I. } I_1^u = \langle u - 1, a, b - 1 \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

	Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u =$	1.00000		
$a =$	0	0	0
$b =$	1.00000		

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

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

$$a_1 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} a \\ a^3 - a^2 - 3a + 1 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -a^2 \\ a^3 + a^2 - a + 1 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -a^3 + a \\ 2a^3 - 2a - 1 \end{pmatrix}$$

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

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

$$a_3 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -a^3 + a \\ a^3 - a - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -a^3 + a \\ a^3 - a - 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = -1.098684 - 0.455090I$ $b = 2.65246 - 1.18850I$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$
$u = -1.00000$ $a = -1.098684 + 0.455090I$ $b = 2.65246 + 1.18850I$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$
$u = -1.00000$ $a = 1.098684 - 0.455090I$ $b = -2.65246 + 0.81150I$	$-2.46740 + 3.66386I$	$-4.00000 - 4.00000I$
$u = -1.00000$ $a = 1.098684 + 0.455090I$ $b = -2.65246 - 0.81150I$	$-2.46740 - 3.66386I$	$-4.00000 + 4.00000I$

$$\text{III. } I_3^u = \langle u^{18} - 6u^{16} + \dots - u + 1, u^{16} - 4u^{14} + 6u^{12} - 6u^{10} + 6u^8 - 4u^6 + 2u^4 + b, -u^{14} + 5u^{12} + \dots + a + 1 \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} u^{14} - 5u^{12} + 10u^{10} - 11u^8 + 8u^6 - 4u^4 + 2u^2 - 1 \\ -u^{16} + 4u^{14} - 6u^{12} + 6u^{10} - 6u^8 + 4u^6 - 2u^4 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^8 - 3u^6 + 3u^4 - 2u^2 + 1 \\ -u^8 + 2u^6 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^5 - 2u^3 + u \\ -u^7 + u^5 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^2 - 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.355855 - 0.124178I$ $a = -0.748065 + 0.480615I$ $b = 2.94473 + 0.48998I$	$5.69302I$	$-5.51057I$
$u = -1.355855 + 0.124178I$ $a = -0.748065 - 0.480615I$ $b = 2.94473 - 0.48998I$	$-5.69302I$	$5.51057I$
$u = -1.212368 - 0.197153I$ $a = 0.843964 + 0.106529I$ $b = -3.60849 + 0.19177I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = -1.212368 + 0.197153I$ $a = 0.843964 - 0.106529I$ $b = -3.60849 - 0.19177I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = -0.783020 - 0.545597I$ $a = 0.029911 + 0.827835I$ $b = -0.959369 - 0.349265I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = -0.783020 + 0.545597I$ $a = 0.029911 - 0.827835I$ $b = -0.959369 + 0.349265I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = -0.546610 - 0.614343I$ $a = -0.949915 - 0.148109I$ $b = 0.327289 - 0.649379I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$
$u = -0.546610 + 0.614343I$ $a = -0.949915 + 0.148109I$ $b = 0.327289 + 0.649379I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = 0.223621 - 0.567170I$ $a = -1.05393 - 1.35147I$ $b = 0.259714 - 0.407223I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = 0.223621 + 0.567170I$ $a = -1.05393 + 1.35147I$ $b = 0.259714 + 0.407223I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.479853 - 0.699604I$ $a = 0.17289 + 1.41649I$ $b = 0.613639 + 0.892486I$	$-5.69302I$	$5.51057I$
$u = 0.479853 + 0.699604I$ $a = 0.17289 - 1.41649I$ $b = 0.613639 - 0.892486I$	$5.69302I$	$-5.51057I$
$u = 0.876002 - 0.575426I$ $a = 1.149120 + 0.116988I$ $b = -2.41047 - 1.23528I$	$5.69302I$	$-5.51057I$
$u = 0.876002 + 0.575426I$ $a = 1.149120 - 0.116988I$ $b = -2.41047 + 1.23528I$	$-5.69302I$	$5.51057I$
$u = 0.988747 - 0.370017I$ $a = -0.790968 - 0.594908I$ $b = 1.34691 + 1.12718I$	$-1.89061 - 0.92430I$	$-3.71672 + 0.79423I$
$u = 0.988747 + 0.370017I$ $a = -0.790968 + 0.594908I$ $b = 1.34691 - 1.12718I$	$-1.89061 + 0.92430I$	$-3.71672 - 0.79423I$
$u = 1.329630 - 0.068746I$ $a = 0.346990 - 0.481846I$ $b = -0.513947 + 0.688083I$	$1.89061 - 0.92430I$	$3.71672 + 0.79423I$
$u = 1.329630 + 0.068746I$ $a = 0.346990 + 0.481846I$ $b = -0.513947 - 0.688083I$	$1.89061 + 0.92430I$	$3.71672 - 0.79423I$

$$\text{IV. } I_4^u = \langle u^{47} - 2u^{46} + \dots - 5u - 5, -2.13 \times 10^{25} u^{46} + 1.33 \times 10^{25} u^{45} + \dots + 7.07 \times 10^{25} b - 3.17 \times 10^{25}, -3.88 \times 10^{25} u^{46} + 1.31 \times 10^{26} u^{45} + \dots + 3.54 \times 10^{26} a + 6.44 \times 10^{26} \rangle$$

(i) Arc colorings

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

$$a_5 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} 0.109657u^{46} - 0.370004u^{45} + \dots + 2.29818u - 1.82101 \\ 0.301576u^{46} - 0.187337u^{45} + \dots + 0.698107u + 0.448075 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.174139u^{46} - 0.0273104u^{45} + \dots + 0.576171u - 0.797149 \\ 0.0647978u^{46} - 0.174501u^{45} + \dots + 2.69114u + 0.507856 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.396967u^{46} - 0.812539u^{45} + \dots + 9.00630u + 1.24000 \\ 0.177926u^{46} - 0.0720309u^{45} + \dots + 0.509939u - 0.373748 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.139947u^{46} - 0.0508260u^{45} + \dots + 2.41001u - 1.69291 \\ 0.637159u^{46} - 0.496634u^{45} + \dots + 0.404491u + 0.477987 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.214699u^{46} - 0.724996u^{45} + \dots + 7.13089u + 0.541906 \\ 0.282512u^{46} + 0.177536u^{45} + \dots - 4.31638u - 1.75683 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 0.351366u^{46} - 0.985244u^{45} + \dots + 10.2865u + 2.55956 \\ 0.295597u^{46} + 0.0459638u^{45} + \dots - 1.61540u - 1.07350 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.351366u^{46} - 0.985244u^{45} + \dots + 10.2865u + 2.55956 \\ 0.295597u^{46} + 0.0459638u^{45} + \dots - 1.61540u - 1.07350 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.148181 - 0.688109I$		
$a = 0.080150 + 0.655942I$	$6.36842 - 9.89029I$	$3.34606 + 5.56719I$
$b = -0.440411 - 1.028840I$		
$u = -1.148181 + 0.688109I$		
$a = 0.080150 - 0.655942I$	$6.36842 + 9.89029I$	$3.34606 - 5.56719I$
$b = -0.440411 + 1.028840I$		
$u = -1.088143 - 0.292285I$		
$a = -1.034103 - 0.056568I$	$-5.47077 - 3.68113I$	$-9.62046 + 4.56447I$
$b = 3.15639 + 0.31445I$		
$u = -1.088143 + 0.292285I$		
$a = -1.034103 + 0.056568I$	$-5.47077 + 3.68113I$	$-9.62046 - 4.56447I$
$b = 3.15639 - 0.31445I$		
$u = -1.088097 - 0.178123I$		
$a = 0.922010 - 0.605617I$	$-4.58829 + 3.84650I$	$-8.76666 - 3.56046I$
$b = -2.65568 - 0.48273I$		
$u = -1.088097 + 0.178123I$		
$a = 0.922010 + 0.605617I$	$-4.58829 - 3.84650I$	$-8.76666 + 3.56046I$
$b = -2.65568 + 0.48273I$		
$u = -1.071626 - 0.732285I$		
$a = -0.717650 - 0.180252I$	$7.88170 - 7.13370I$	$4.69775 + 5.86187I$
$b = 1.324654 - 0.248787I$		
$u = -1.071626 + 0.732285I$		
$a = -0.717650 + 0.180252I$	$7.88170 + 7.13370I$	$4.69775 - 5.86187I$
$b = 1.324654 + 0.248787I$		
$u = -1.025602 - 0.594700I$		
$a = -0.048941 - 0.698553I$	$0.49152 - 5.74739I$	$0.29552 + 5.57964I$
$b = 0.759700 + 0.891691I$		
$u = -1.025602 + 0.594700I$		
$a = -0.048941 + 0.698553I$	$0.49152 + 5.74739I$	$0.29552 - 5.57964I$
$b = 0.759700 - 0.891691I$		

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.929993 - 0.511244I$ $a = 1.151507 - 0.206529I$ $b = -2.84688 - 0.90982I$	$-1.23516 - 6.21145I$	$-1.74487 + 7.02826I$
$u = -0.929993 + 0.511244I$ $a = 1.151507 + 0.206529I$ $b = -2.84688 + 0.90982I$	$-1.23516 + 6.21145I$	$-1.74487 - 7.02826I$
$u = -0.896677 - 0.582973I$ $a = 0.774367 + 0.215147I$ $b = -1.054559 + 0.751665I$	$1.50796 - 3.62695I$	$2.13655 + 6.26888I$
$u = -0.896677 + 0.582973I$ $a = 0.774367 - 0.215147I$ $b = -1.054559 - 0.751665I$	$1.50796 + 3.62695I$	$2.13655 - 6.26888I$
$u = -0.805471 - 0.476797I$ $a = -0.821430 + 1.062937I$ $b = 2.11281 + 0.84025I$	$-0.77532 + 2.18171I$	$-0.087129 + 0.127753I$
$u = -0.805471 + 0.476797I$ $a = -0.821430 - 1.062937I$ $b = 2.11281 - 0.84025I$	$-0.77532 - 2.18171I$	$-0.087129 - 0.127753I$
$u = -0.596301 - 0.917514I$ $a = -0.278057 - 0.803541I$ $b = 0.435163 + 0.048454I$	$9.33252 + 1.08584I$	$6.61100 - 0.78668I$
$u = -0.596301 + 0.917514I$ $a = -0.278057 + 0.803541I$ $b = 0.435163 - 0.048454I$	$9.33252 - 1.08584I$	$6.61100 + 0.78668I$
$u = -0.466771 - 0.950234I$ $a = 0.836171 - 0.017324I$ $b = -0.222547 + 0.233097I$	$8.45114 + 3.90837I$	$6.00297 - 1.23296I$
$u = -0.466771 + 0.950234I$ $a = 0.836171 + 0.017324I$ $b = -0.222547 - 0.233097I$	$8.45114 - 3.90837I$	$6.00297 + 1.23296I$

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.312493 - 0.174261I$ $a = -0.47650 + 1.72046I$ $b = -0.668065 + 0.440198I$	$1.43130 - 0.33753I$	$6.95713 + 1.01845I$
$u = -0.312493 + 0.174261I$ $a = -0.47650 - 1.72046I$ $b = -0.668065 - 0.440198I$	$1.43130 + 0.33753I$	$6.95713 - 1.01845I$
$u = 0.390678 - 0.441527I$ $a = 1.73021 + 0.74761I$ $b = -0.340284 - 0.647603I$	$-0.11745 + 4.26570I$	$1.86221 - 7.53589I$
$u = 0.390678 + 0.441527I$ $a = 1.73021 - 0.74761I$ $b = -0.340284 + 0.647603I$	$-0.11745 - 4.26570I$	$1.86221 + 7.53589I$
$u = 0.422418 - 0.972261I$ $a = 0.101390 - 1.183947I$ $b = -0.44401 - 1.34279I$	$6.36874 - 9.11603I$	$3.03425 + 5.54417I$
$u = 0.422418 + 0.972261I$ $a = 0.101390 + 1.183947I$ $b = -0.44401 + 1.34279I$	$6.36874 + 9.11603I$	$3.03425 - 5.54417I$
$u = 0.448301 - 0.828589I$ $a = 0.687794 + 0.976545I$ $b = -0.858176 + 1.098554I$	$3.39185 - 1.64022I$	$0.179783 + 0.219910I$
$u = 0.448301 + 0.828589I$ $a = 0.687794 - 0.976545I$ $b = -0.858176 - 1.098554I$	$3.39185 + 1.64022I$	$0.179783 - 0.219910I$
$u = 0.663150 - 0.901843I$ $a = -0.981095 - 0.394024I$ $b = 1.72777 - 0.01848I$	$8.04432 + 4.08182I$	$4.48123 - 4.68553I$
$u = 0.663150 + 0.901843I$ $a = -0.981095 + 0.394024I$ $b = 1.72777 + 0.01848I$	$8.04432 - 4.08182I$	$4.48123 + 4.68553I$

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.792757 - 0.587153I$ $a = -0.480661 - 1.051031I$ $b = -0.258030 - 0.275829I$	$0.241182 - 1.057236I$	$0.289576 - 0.557042I$
$u = 0.792757 + 0.587153I$ $a = -0.480661 + 1.051031I$ $b = -0.258030 + 0.275829I$	$0.241182 + 1.057236I$	$0.289576 + 0.557042I$
$u = 0.831768$ $a = -0.799419$ $b = 0.680761$	-1.34703	-7.25788
$u = 0.851604 - 0.554884I$ $a = 0.459211 - 0.585545I$ $b = 0.044513 + 0.738267I$	$2.42833 + 2.22486I$	$2.96572 - 3.27842I$
$u = 0.851604 + 0.554884I$ $a = 0.459211 + 0.585545I$ $b = 0.044513 - 0.738267I$	$2.42833 - 2.22486I$	$2.96572 + 3.27842I$
$u = 1.013143 - 0.212457I$ $a = -0.285013 + 0.539428I$ $b = 0.156238 - 0.625453I$	$-2.04844 + 0.43724I$	$-5.38341 - 0.85631I$
$u = 1.013143 + 0.212457I$ $a = -0.285013 - 0.539428I$ $b = 0.156238 + 0.625453I$	$-2.04844 - 0.43724I$	$-5.38341 + 0.85631I$
$u = 1.020128 - 0.751054I$ $a = 0.308971 + 0.846951I$ $b = -0.394858 + 0.401948I$	$6.94963 + 1.98085I$	$3.48623 - 0.28252I$
$u = 1.020128 + 0.751054I$ $a = 0.308971 - 0.846951I$ $b = -0.394858 - 0.401948I$	$6.94963 - 1.98085I$	$3.48623 + 0.28252I$
$u = 1.055238 - 0.511956I$ $a = 0.762076 + 0.577759I$ $b = -2.33049 - 0.48844I$	$-4.03460 + 3.27231I$	$-6.93849 - 3.87386I$

Solution to I_4^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.055238 + 0.511956I$ $a = 0.762076 - 0.577759I$ $b = -2.33049 + 0.48844I$	$-4.03460 - 3.27231I$	$-6.93849 + 3.87386I$
$u = 1.063996 - 0.607981I$ $a = -1.019616 - 0.043957I$ $b = 3.32088 + 0.87652I$	$-1.69804 + 10.75148I$	$-2.97142 - 9.27459I$
$u = 1.063996 + 0.607981I$ $a = -1.019616 + 0.043957I$ $b = 3.32088 - 0.87652I$	$-1.69804 - 10.75148I$	$-2.97142 + 9.27459I$
$u = 1.118201 - 0.639814I$ $a = -0.712700 - 0.575906I$ $b = 2.73705 - 0.06629I$	$1.38638 + 7.13549I$	$-2.46560 - 4.47635I$
$u = 1.118201 + 0.639814I$ $a = -0.712700 + 0.575906I$ $b = 2.73705 + 0.06629I$	$1.38638 - 7.13549I$	$-2.46560 + 4.47635I$
$u = 1.173855 - 0.678590I$ $a = 0.941620 + 0.040473I$ $b = -3.60158 - 0.36509I$	$4.0697 + 15.1191I$	$0.26102 - 9.40367I$
$u = 1.173855 + 0.678590I$ $a = 0.941620 - 0.040473I$ $b = -3.60158 + 0.36509I$	$4.0697 - 15.1191I$	$0.26102 + 9.40367I$

V. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u-1)(u+1)^4(u^{18}-6u^{16}+\dots+u+1)(u^{47}+2u^{46}+\dots-5u+5)$
c_2	$(u+1)^5(u^{18}+12u^{17}+\dots+u+1)(u^{47}+18u^{46}+\dots+445u+25)$
c_3	$u(u^4+2u^2+2)(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^3$ $(u^{47}-6u^{46}+\dots+736u-128)$
c_4	$(u)(u^4-2u^2+2)(1+u-2u^3-u^4+u^5+u^6)^3(u^{47}-2u^{46}+\dots+4u-2)$
c_5	$(u-1)^4(u+1)(u^{18}-6u^{16}+\dots+u+1)(u^{47}+2u^{46}+\dots-5u+5)$
c_6	$(u-1)^4(u+1)(u^{18}-6u^{16}+\dots-u+1)(u^{47}+2u^{46}+\dots+23u-5)$
c_7	$u(u^4+2u^2+2)(u^6+u^5-u^4-2u^3+u+1)^3$ $(u^{47}-2u^{46}+\dots-3652u+3866)$
c_8	$(u)(u^4-2u^2+2)(1+u-2u^3-u^4+u^5+u^6)^3(u^{47}-2u^{46}+\dots+4u-2)$
c_9	$u(u^2+2u+2)^2(u^6+3u^5+5u^4+4u^3+2u^2+u+1)^3$ $(u^{47}+22u^{46}+\dots+8u+4)$
c_{10}	$(u-1)(u+1)^4(u^{18}-6u^{16}+\dots-u+1)(u^{47}+2u^{46}+\dots+23u-5)$
c_{11}	$(u-1)(u+1)^4(u^{18}-6u^{16}+\dots-u+1)(u^{47}+2u^{46}+\dots+23u-5)$

VI. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1, c_5	$(y - 1)^5(y^{18} - 12y^{17} + \dots - y + 1)(y^{47} - 18y^{46} + \dots + 445y - 25)$
c_2	$(y - 1)^5(y^{18} - 12y^{17} + \dots + 7y + 1)$ $(y^{47} + 30y^{46} + \dots - 49175y - 625)$
c_3	$y(y^2 + 2y + 2)^2(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^3$ $(y^{47} + 10y^{46} + \dots - 154624y - 16384)$
c_4	$y(y^2 - 2y + 2)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^3$ $(y^{47} - 22y^{46} + \dots + 8y - 4)$
c_6, c_{10}	$(y - 1)^5(y^{18} - 12y^{17} + \dots - y + 1)(y^{47} - 50y^{46} + \dots - 211y - 25)$
c_7	$y(y^2 + 2y + 2)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^3$ $(y^{47} - 14y^{46} + \dots + 245188856y - 14945956)$
c_8	$y(y^2 - 2y + 2)^2(y^6 - 3y^5 + 5y^4 - 4y^3 + 2y^2 - y + 1)^3$ $(y^{47} - 22y^{46} + \dots + 8y - 4)$
c_9	$y(y^2 + 4)^2(y^6 + y^5 + 5y^4 + 6y^2 + 3y + 1)^3$ $(y^{47} + 6y^{46} + \dots - 96y - 16)$
c_{11}	$(y - 1)^5(y^{18} - 12y^{17} + \dots - y + 1)(y^{47} - 50y^{46} + \dots - 211y - 25)$