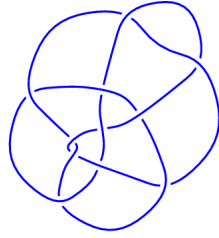
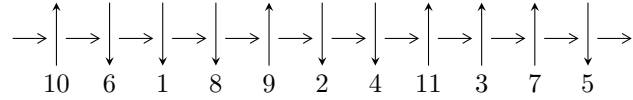


11a<sub>326</sub> (K11a<sub>326</sub>)

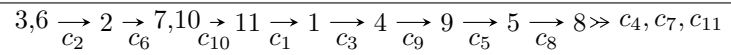


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

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

$$I_1^u = \langle u^{22} + 6u^{20} + \dots + 3u - 1, 311058123u^{21} - 50616715u^{20} + \dots + 462381937b - 8437483, \\ 616215260u^{21} + 9916634u^{20} + \dots + 462381937a + 572933757 \rangle$$

$$I_2^u = \langle u^{106} + 3u^{105} + \dots + 19u - 1, \\ -1.39236 \times 10^{318}u^{105} - 4.25978 \times 10^{318}u^{104} + \dots + 4.43640 \times 10^{318}b - 1.00560 \times 10^{319}, \\ -7.92637 \times 10^{317}u^{105} - 2.62180 \times 10^{318}u^{104} + \dots + 3.41262 \times 10^{317}a - 1.84851 \times 10^{318} \rangle$$

There are 2 irreducible components with 128 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.

$$I_1^u = \langle u^{22} + 6u^{20} + \dots + 3u - 1, 3.11 \times 10^8 u^{21} - 5.06 \times 10^7 u^{20} + \dots + 4.62 \times 10^8 b - 8.44 \times 10^6, 6.16 \times 10^8 u^{21} + 9.92 \times 10^6 u^{20} + \dots + 4.62 \times 10^8 a + 5.73 \times 10^8 \rangle$$

(i) Arc colorings

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

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

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

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

$$a_{10} = \begin{pmatrix} -1.33270u^{21} - 0.0214468u^{20} + \dots + 16.3655u - 1.23909 \\ -0.672730u^{21} + 0.109469u^{20} + \dots + 4.81158u + 0.0182479 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.696047u^{21} - 0.161894u^{20} + \dots + 14.7684u - 1.34848 \\ -0.715551u^{21} + 0.0211544u^{20} + \dots + 5.35065u + 0.268079 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.144867u^{21} + 0.978270u^{20} + \dots + 8.34464u - 3.62987 \\ -0.0360791u^{21} - 0.0309779u^{20} + \dots + 3.21453u - 1.09114 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.70592u^{21} - 0.186649u^{20} + \dots - 13.7543u + 2.74226 \\ 0.421055u^{21} - 0.0663724u^{20} + \dots - 4.73592u + 0.397875 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.659968u^{21} - 0.130916u^{20} + \dots + 11.5539u - 1.25734 \\ -0.672730u^{21} + 0.109469u^{20} + \dots + 4.81158u + 0.0182479 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.260687u^{21} - 0.718677u^{20} + \dots + 5.80976u + 1.01397 \\ -0.711817u^{21} - 0.495571u^{20} + \dots + 2.41133u + 1.03330 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.53126u^{21} - 0.483339u^{20} + \dots + 15.6276u - 2.33995 \\ -0.416122u^{21} + 0.251675u^{20} + \dots + 6.97099u - 0.324031 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1.53126u^{21} - 0.483339u^{20} + \dots + 15.6276u - 2.33995 \\ -0.416122u^{21} + 0.251675u^{20} + \dots + 6.97099u - 0.324031 \end{pmatrix}$$

(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
$u = -1.98925$ $a = 0.116796$ $b = -0.270895$	-5.42454	-52.7847
$u = -0.685709 - 0.044403I$ $a = 0.022521 + 0.524665I$ $b = 0.898671 + 0.630847I$	$0.20007 + 3.13940I$	$-5.66733 - 4.39177I$
$u = -0.685709 + 0.044403I$ $a = 0.022521 - 0.524665I$ $b = 0.898671 - 0.630847I$	$0.20007 - 3.13940I$	$-5.66733 + 4.39177I$
$u = -0.41396 - 1.41951I$ $a = -1.47000 + 0.10658I$ $b = -1.28210 + 0.79536I$	$4.93626 - 7.53570I$	$0.99061 + 3.53310I$
$u = -0.41396 + 1.41951I$ $a = -1.47000 - 0.10658I$ $b = -1.28210 - 0.79536I$	$4.93626 + 7.53570I$	$0.99061 - 3.53310I$
$u = -0.246048 - 0.886009I$ $a = 1.25931 + 1.49417I$ $b = 0.878783 - 0.282838I$	$3.59823 - 3.07145I$	$4.51954 + 4.54839I$
$u = -0.246048 + 0.886009I$ $a = 1.25931 - 1.49417I$ $b = 0.878783 + 0.282838I$	$3.59823 + 3.07145I$	$4.51954 - 4.54839I$
$u = -0.032705 - 1.338776I$ $a = 0.150619 - 0.181179I$ $b = -0.143457 - 1.012656I$	$2.36180 - 6.75752I$	$2.14760 + 5.66405I$
$u = -0.032705 + 1.338776I$ $a = 0.150619 + 0.181179I$ $b = -0.143457 + 1.012656I$	$2.36180 + 6.75752I$	$2.14760 - 5.66405I$
$u = 0.020675 - 1.210052I$ $a = -0.916160 - 0.468193I$ $b = -0.742004 + 0.587064I$	$5.49012 + 1.99940I$	$7.14235 - 2.66277I$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.020675 + 1.210052I$ $a = -0.916160 + 0.468193I$ $b = -0.742004 - 0.587064I$	$5.49012 - 1.99940I$	$7.14235 + 2.66277I$
$u = 0.060765 - 1.259520I$ $a = -1.66722 - 0.24295I$ $b = -1.116408 + 0.119930I$	$5.20735 + 2.19424I$	$7.08492 - 2.83841I$
$u = 0.060765 + 1.259520I$ $a = -1.66722 + 0.24295I$ $b = -1.116408 - 0.119930I$	$5.20735 - 2.19424I$	$7.08492 + 2.83841I$
$u = 0.131904 - 0.260531I$ $a = 0.76146 - 3.92106I$ $b = 0.615723 - 1.055177I$	$-2.91039 - 2.89939I$	$-7.87662 + 2.74117I$
$u = 0.131904 + 0.260531I$ $a = 0.76146 + 3.92106I$ $b = 0.615723 + 1.055177I$	$-2.91039 + 2.89939I$	$-7.87662 - 2.74117I$
$u = 0.222746 - 0.907894I$ $a = 2.03946 - 1.59282I$ $b = 1.266432 - 0.461280I$	$0.36060 + 8.25334I$	$2.83947 - 7.63102I$
$u = 0.222746 + 0.907894I$ $a = 2.03946 + 1.59282I$ $b = 1.266432 + 0.461280I$	$0.36060 - 8.25334I$	$2.83947 + 7.63102I$
$u = 0.47367 - 1.40435I$ $a = -1.280778 + 0.175095I$ $b = -1.55280 - 0.85270I$	$2.55491 + 6.09609I$	$7.79395 - 10.16302I$
$u = 0.47367 + 1.40435I$ $a = -1.280778 - 0.175095I$ $b = -1.55280 + 0.85270I$	$2.55491 - 6.09609I$	$7.79395 + 10.16302I$
$u = 0.784102 - 0.072947I$ $a = 0.678691 + 0.020479I$ $b = 0.280288 + 0.262690I$	$0.275443 + 0.077477I$	$-0.515061 + 1.191364I$
$u = 0.784102 + 0.072947I$ $a = 0.678691 - 0.020479I$ $b = 0.280288 - 0.262690I$	$0.275443 - 0.077477I$	$-0.515061 - 1.191364I$
$u = 1.35835$ $a = -0.272613$ $b = 1.06465$	$-2.53570$	$47.8658$

$$\text{II. } I_2^u = \langle u^{106} + 3u^{105} + \dots + 19u - 1, -1.39 \times 10^{318}u^{105} - 4.26 \times 10^{318}u^{104} + \dots + 4.44 \times 10^{318}b - 1.01 \times 10^{319}, -7.93 \times 10^{317}u^{105} - 2.62 \times 10^{318}u^{104} + \dots + 3.41 \times 10^{317}a - 1.85 \times 10^{318} \rangle$$

(i) Arc colorings

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

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

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

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

$$a_{10} = \begin{pmatrix} 2.32267u^{105} + 7.68268u^{104} + \dots - 77.0561u + 5.41671 \\ 0.313848u^{105} + 0.960189u^{104} + \dots - 28.1503u + 2.26670 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 1.94720u^{105} + 6.49173u^{104} + \dots - 80.8911u + 5.76853 \\ 0.0903806u^{105} + 0.134570u^{104} + \dots - 25.1663u + 1.97942 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.536095u^{105} + 0.763638u^{104} + \dots - 218.875u + 17.7105 \\ 0.0757890u^{105} + 0.130522u^{104} + \dots - 27.0376u + 2.47019 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1.74444u^{105} + 5.31471u^{104} + \dots - 231.801u + 15.2966 \\ 0.636229u^{105} + 2.00879u^{104} + \dots - 43.7176u + 2.69763 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2.00882u^{105} + 6.72249u^{104} + \dots - 48.9057u + 3.15001 \\ 0.313848u^{105} + 0.960189u^{104} + \dots - 28.1503u + 2.26670 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -1.45668u^{105} - 4.17549u^{104} + \dots + 45.8949u - 8.57048 \\ -0.300360u^{105} - 1.16893u^{104} + \dots - 4.12988u - 0.387022 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.131397u^{105} + 0.259568u^{104} + \dots + 251.587u - 13.5190 \\ -0.400537u^{105} - 1.31079u^{104} + \dots + 39.8917u - 2.14966 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.131397u^{105} + 0.259568u^{104} + \dots + 251.587u - 13.5190 \\ -0.400537u^{105} - 1.31079u^{104} + \dots + 39.8917u - 2.14966 \end{pmatrix}$$

(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
$u = -1.32729$ $a = 0.326095$ $b = -1.12870$	$-2.61066$	$-60.1001$
$u = -1.216419 - 0.068761I$ $a = 0.122226 - 0.112703I$ $b = 0.768405 - 0.177790I$	$1.244554 - 0.367853I$	$7.95101 - 0.06945I$
$u = -1.216419 + 0.068761I$ $a = 0.122226 + 0.112703I$ $b = 0.768405 + 0.177790I$	$1.244554 + 0.367853I$	$7.95101 + 0.06945I$
$u = -1.190850 - 0.079603I$ $a = 0.0103139 + 0.0381641I$ $b = -0.959119 + 0.684372I$	$-0.49934 - 12.68122I$	$-1.17808 + 8.95575I$
$u = -1.190850 + 0.079603I$ $a = 0.0103139 - 0.0381641I$ $b = -0.959119 - 0.684372I$	$-0.49934 + 12.68122I$	$-1.17808 - 8.95575I$
$u = -0.988852 - 0.225632I$ $a = 0.526268 - 0.083150I$ $b = -0.571986 + 0.392628I$	$-2.95995 - 0.48399I$	$-7.58132 - 1.74898I$
$u = -0.988852 + 0.225632I$ $a = 0.526268 + 0.083150I$ $b = -0.571986 - 0.392628I$	$-2.95995 + 0.48399I$	$-7.58132 + 1.74898I$
$u = -0.799379 - 0.132865I$ $a = 0.308761 + 0.530180I$ $b = -0.757517 - 0.598819I$	$-1.149224 - 0.819705I$	$-5.79346 + 6.19362I$
$u = -0.799379 + 0.132865I$ $a = 0.308761 - 0.530180I$ $b = -0.757517 + 0.598819I$	$-1.149224 + 0.819705I$	$-5.79346 - 6.19362I$
$u = -0.701103 - 0.525072I$ $a = 0.191668 + 1.088294I$ $b = 1.120553 + 0.725615I$	$-2.25902 + 4.46440I$	$-3.75032 - 6.93016I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.701103 + 0.525072I$		
$a = 0.191668 - 1.088294I$	$-2.25902 - 4.46440I$	$-3.75032 + 6.93016I$
$b = 1.120553 - 0.725615I$		
$u = -0.692760 - 0.496513I$		
$a = 0.078806 - 0.123174I$	$-1.04735 - 4.26740I$	$-3.86831 + 9.88506I$
$b = 0.509835 - 0.878093I$		
$u = -0.692760 + 0.496513I$		
$a = 0.078806 + 0.123174I$	$-1.04735 + 4.26740I$	$-3.86831 - 9.88506I$
$b = 0.509835 + 0.878093I$		
$u = -0.631262 - 0.289324I$		
$a = 0.428728 + 0.158961I$	$-1.208000 - 0.625059I$	$-7.37009 + 3.11596I$
$b = -0.306482 - 0.572159I$		
$u = -0.631262 + 0.289324I$		
$a = 0.428728 - 0.158961I$	$-1.208000 + 0.625059I$	$-7.37009 - 3.11596I$
$b = -0.306482 + 0.572159I$		
$u = -0.600947 - 0.531433I$		
$a = 0.932449 - 0.440471I$	$-1.178379 + 0.043868I$	$-5.59483 - 0.89889I$
$b = 0.115276 - 0.584261I$		
$u = -0.600947 + 0.531433I$		
$a = 0.932449 + 0.440471I$	$-1.178379 - 0.043868I$	$-5.59483 + 0.89889I$
$b = 0.115276 + 0.584261I$		
$u = -0.57324 - 1.56752I$		
$a = 0.543694 + 0.357317I$	$4.02884 + 5.89856I$	$6.07198 - 3.74399I$
$b = 0.882594 - 0.153067I$		
$u = -0.57324 + 1.56752I$		
$a = 0.543694 - 0.357317I$	$4.02884 - 5.89856I$	$6.07198 + 3.74399I$
$b = 0.882594 + 0.153067I$		
$u = -0.53778 - 1.43935I$		
$a = -0.974047 - 0.276594I$	$5.80499 - 6.00260I$	$5.72530 + 6.45441I$
$b = -0.931840 + 0.520260I$		

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.53778 + 1.43935I$ $a = -0.974047 + 0.276594I$ $b = -0.931840 - 0.520260I$	$5.80499 + 6.00260I$	$5.72530 - 6.45441I$
$u = -0.53305 - 1.41069I$ $a = 1.52613 + 0.08254I$ $b = 1.39554 - 1.05056I$	$4.1975 - 18.6893I$	$0.90155 + 9.61946I$
$u = -0.53305 + 1.41069I$ $a = 1.52613 - 0.08254I$ $b = 1.39554 + 1.05056I$	$4.1975 + 18.6893I$	$0.90155 - 9.61946I$
$u = -0.51635 - 1.40331I$ $a = 1.332899 + 0.183815I$ $b = 1.52570 - 1.11882I$	$2.22217 - 6.15586I$	$-14.2393 + 15.8648I$
$u = -0.51635 + 1.40331I$ $a = 1.332899 - 0.183815I$ $b = 1.52570 + 1.11882I$	$2.22217 + 6.15586I$	$-14.2393 - 15.8648I$
$u = -0.50858 - 1.42395I$ $a = -1.284313 - 0.199332I$ $b = -1.189530 + 0.588679I$	$6.08341 - 6.36617I$	$5.95100 + 2.75865I$
$u = -0.50858 + 1.42395I$ $a = -1.284313 + 0.199332I$ $b = -1.189530 - 0.588679I$	$6.08341 + 6.36617I$	$5.95100 - 2.75865I$
$u = -0.493513 - 1.087523I$ $a = -0.696366 - 0.086215I$ $b = -0.105701 - 0.295084I$	$-0.32843 - 4.85662I$	$-3.64745 + 4.90866I$
$u = -0.493513 + 1.087523I$ $a = -0.696366 + 0.086215I$ $b = -0.105701 + 0.295084I$	$-0.32843 + 4.85662I$	$-3.64745 - 4.90866I$
$u = -0.470101 - 1.319378I$ $a = 1.091906 + 0.574427I$ $b = 1.60385 - 0.08129I$	$3.09477 - 5.46170I$	$9.11752 + 5.59449I$



Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.470101 + 1.319378I$ $a = 1.091906 - 0.574427I$ $b = 1.60385 + 0.08129I$	$3.09477 + 5.46170I$	$9.11752 - 5.59449I$
$u = -0.406727 - 1.097531I$ $a = 1.71248 + 0.36450I$ $b = 0.625733 - 0.824713I$	$1.61482 - 3.62256I$	$-4.03032 + 6.19652I$
$u = -0.406727 + 1.097531I$ $a = 1.71248 - 0.36450I$ $b = 0.625733 + 0.824713I$	$1.61482 + 3.62256I$	$-4.03032 - 6.19652I$
$u = -0.374861 - 0.992057I$ $a = -2.21826 - 0.55212I$ $b = -1.99480 + 0.51836I$	$-0.83829 - 8.68306I$	$-4.09342 + 11.16799I$
$u = -0.374861 + 0.992057I$ $a = -2.21826 + 0.55212I$ $b = -1.99480 - 0.51836I$	$-0.83829 + 8.68306I$	$-4.09342 - 11.16799I$
$u = -0.35962 - 1.47520I$ $a = -1.40447 + 0.34708I$ $b = -1.23059 + 1.05452I$	$5.16254 - 8.34567I$	$4.74374 + 13.15510I$
$u = -0.35962 + 1.47520I$ $a = -1.40447 - 0.34708I$ $b = -1.23059 - 1.05452I$	$5.16254 + 8.34567I$	$4.74374 - 13.15510I$
$u = -0.316207 - 1.138555I$ $a = 1.259313 + 0.221509I$ $b = 0.882260 - 0.766558I$	$1.44043 - 2.95357I$	$-2.89476 + 3.29252I$
$u = -0.316207 + 1.138555I$ $a = 1.259313 - 0.221509I$ $b = 0.882260 + 0.766558I$	$1.44043 + 2.95357I$	$-2.89476 - 3.29252I$
$u = -0.113729 - 1.219746I$ $a = 1.40995 + 1.15814I$ $b = 0.726644 - 0.472380I$	$3.22712 - 8.49581I$	$5.57013 + 9.61676I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.113729 + 1.219746I$ $a = 1.40995 - 1.15814I$ $b = 0.726644 + 0.472380I$	$3.22712 + 8.49581I$	$5.57013 - 9.61676I$
$u = -0.102743 - 1.170900I$ $a = -1.92213 + 0.58353I$ $b = -1.151571 - 0.157014I$	$3.99548 - 3.56708I$	$3.32826 + 4.09486I$
$u = -0.102743 + 1.170900I$ $a = -1.92213 - 0.58353I$ $b = -1.151571 + 0.157014I$	$3.99548 + 3.56708I$	$3.32826 - 4.09486I$
$u = -0.054207 - 1.343778I$ $a = 1.199353 - 0.512320I$ $b = 1.36559 - 1.06037I$	$3.20451 - 4.04224I$	$4.87146 + 5.28209I$
$u = -0.054207 + 1.343778I$ $a = 1.199353 + 0.512320I$ $b = 1.36559 + 1.06037I$	$3.20451 + 4.04224I$	$4.87146 - 5.28209I$
$u = -0.031541 - 1.224943I$ $a = 1.57808 + 1.10464I$ $b = 1.83161 + 1.76546I$	$6.73950 - 2.12275I$	$14.7675 + 3.1818I$
$u = -0.031541 + 1.224943I$ $a = 1.57808 - 1.10464I$ $b = 1.83161 - 1.76546I$	$6.73950 + 2.12275I$	$14.7675 - 3.1818I$
$u = -0.023574 - 1.153232I$ $a = -1.40824 + 0.41746I$ $b = -0.90634 + 1.37571I$	$4.45667 + 0.16513I$	$5.03131 - 2.33793I$
$u = -0.023574 + 1.153232I$ $a = -1.40824 - 0.41746I$ $b = -0.90634 - 1.37571I$	$4.45667 - 0.16513I$	$5.03131 + 2.33793I$
$u = -0.0204907 - 0.1082278I$ $a = -6.53654 - 11.18411I$ $b = -0.967717 - 0.480107I$	$-0.61540 - 7.55088I$	$-2.60197 + 3.80824I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.0204907 + 0.1082278I$ $a = -6.53654 + 11.18411I$ $b = -0.967717 + 0.480107I$	$-0.61540 + 7.55088I$	$-2.60197 - 3.80824I$
$u = 0.004504 - 0.988733I$ $a = 0.315079 - 0.330456I$ $b = 0.50078 - 1.51754I$	$-1.37131 - 2.82623I$	$-1.44799 + 2.97770I$
$u = 0.004504 + 0.988733I$ $a = 0.315079 + 0.330456I$ $b = 0.50078 + 1.51754I$	$-1.37131 + 2.82623I$	$-1.44799 - 2.97770I$
$u = 0.016823 - 0.887495I$ $a = -1.97243 - 1.45010I$ $b = -0.975184 - 0.646919I$	$-1.63192 + 3.20943I$	$-0.38444 - 3.90703I$
$u = 0.016823 + 0.887495I$ $a = -1.97243 + 1.45010I$ $b = -0.975184 + 0.646919I$	$-1.63192 - 3.20943I$	$-0.38444 + 3.90703I$
$u = 0.065415 - 1.325978I$ $a = -1.27538 - 0.63900I$ $b = -0.665910 + 0.084742I$	$4.68399 + 3.43734I$	$3.40358 - 6.64123I$
$u = 0.065415 + 1.325978I$ $a = -1.27538 + 0.63900I$ $b = -0.665910 - 0.084742I$	$4.68399 - 3.43734I$	$3.40358 + 6.64123I$
$u = 0.068377 - 1.247174I$ $a = -1.37853 + 0.87229I$ $b = -0.771379 - 0.041317I$	$5.32826 - 0.34844I$	$6.51329 - 2.36514I$
$u = 0.068377 + 1.247174I$ $a = -1.37853 - 0.87229I$ $b = -0.771379 + 0.041317I$	$5.32826 + 0.34844I$	$6.51329 + 2.36514I$
$u = 0.077677 - 1.206178I$ $a = -1.68619 - 0.30262I$ $b = -0.977064 + 0.485797I$	$5.06946 + 0.97532I$	$4.14734 + 4.60251I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.077677 + 1.206178I$ $a = -1.68619 + 0.30262I$ $b = -0.977064 - 0.485797I$	$5.06946 - 0.97532I$	$4.14734 - 4.60251I$
$u = 0.095837 - 1.144677I$ $a = 0.86253 - 1.42437I$ $b = 0.510950 + 0.540666I$	$5.27080 + 3.32416I$	$7.75997 - 7.08041I$
$u = 0.095837 + 1.144677I$ $a = 0.86253 + 1.42437I$ $b = 0.510950 - 0.540666I$	$5.27080 - 3.32416I$	$7.75997 + 7.08041I$
$u = 0.101593 - 1.167758I$ $a = 1.24334 - 1.44830I$ $b = 1.44794 - 2.20911I$	$2.35723 + 8.34056I$	$4.82399 - 10.89303I$
$u = 0.101593 + 1.167758I$ $a = 1.24334 + 1.44830I$ $b = 1.44794 + 2.20911I$	$2.35723 - 8.34056I$	$4.82399 + 10.89303I$
$u = 0.145461 - 0.038298I$ $a = 4.87152 + 1.53021I$ $b = 0.686731 + 0.192242I$	$1.53431 + 0.08305I$	$7.93818 + 0.76201I$
$u = 0.145461 + 0.038298I$ $a = 4.87152 - 1.53021I$ $b = 0.686731 - 0.192242I$	$1.53431 - 0.08305I$	$7.93818 - 0.76201I$
$u = 0.147042 - 0.180501I$ $a = 5.11515 + 1.84087I$ $b = -0.702411 - 0.384809I$	$2.64028 - 2.19448I$	$0.848936 + 0.928898I$
$u = 0.147042 + 0.180501I$ $a = 5.11515 - 1.84087I$ $b = -0.702411 + 0.384809I$	$2.64028 + 2.19448I$	$0.848936 - 0.928898I$
$u = 0.156701 - 0.151110I$ $a = -1.21241 - 2.18071I$ $b = 0.934257 + 0.691915I$	$1.02581 + 2.96908I$	$6.06244 - 5.34743I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.156701 + 0.151110I$ $a = -1.21241 + 2.18071I$ $b = 0.934257 - 0.691915I$	$1.02581 - 2.96908I$	$6.06244 + 5.34743I$
$u = 0.175510 - 0.953433I$ $a = -1.51425 + 0.81029I$ $b = -0.389599 + 0.483666I$	$2.89668 + 0.78297I$	$2.75820 + 0.48427I$
$u = 0.175510 + 0.953433I$ $a = -1.51425 - 0.81029I$ $b = -0.389599 - 0.483666I$	$2.89668 - 0.78297I$	$2.75820 - 0.48427I$
$u = 0.186634 - 1.167288I$ $a = -2.13192 - 0.37046I$ $b = -1.77762 - 1.27346I$	$4.63424 + 5.02298I$	$7.93392 - 7.51170I$
$u = 0.186634 + 1.167288I$ $a = -2.13192 + 0.37046I$ $b = -1.77762 + 1.27346I$	$4.63424 - 5.02298I$	$7.93392 + 7.51170I$
$u = 0.311116 - 1.361004I$ $a = -1.69918 - 0.22324I$ $b = -1.46602 - 0.99946I$	$5.69514 + 5.75539I$	$6.61993 - 2.63042I$
$u = 0.311116 + 1.361004I$ $a = -1.69918 + 0.22324I$ $b = -1.46602 + 0.99946I$	$5.69514 - 5.75539I$	$6.61993 + 2.63042I$
$u = 0.357793 - 1.097088I$ $a = 2.14597 - 0.07710I$ $b = 0.567709 + 0.622795I$	$-0.75293 + 9.92335I$	$-1.55457 - 10.93864I$
$u = 0.357793 + 1.097088I$ $a = 2.14597 + 0.07710I$ $b = 0.567709 - 0.622795I$	$-0.75293 - 9.92335I$	$-1.55457 + 10.93864I$
$u = 0.398783 - 1.042842I$ $a = 1.58801 + 0.16903I$ $b = 0.659942 + 0.624132I$	$-3.88026 + 0.66373I$	$-5.26047 - 1.99477I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.398783 + 1.042842I$ $a = 1.58801 - 0.16903I$ $b = 0.659942 - 0.624132I$	$-3.88026 - 0.66373I$	$-5.26047 + 1.99477I$
$u = 0.432345 - 0.999010I$ $a = 0.865851 - 0.039909I$ $b = 0.902968 + 1.032281I$	$0.74617 + 3.75338I$	$-1.79947 - 4.15298I$
$u = 0.432345 + 0.999010I$ $a = 0.865851 + 0.039909I$ $b = 0.902968 - 1.032281I$	$0.74617 - 3.75338I$	$-1.79947 + 4.15298I$
$u = 0.52181 - 1.39852I$ $a = 1.49604 - 0.13659I$ $b = 1.37408 + 1.06314I$	$8.0314 + 12.5109I$	$4.10688 - 8.00160I$
$u = 0.52181 + 1.39852I$ $a = 1.49604 + 0.13659I$ $b = 1.37408 - 1.06314I$	$8.0314 - 12.5109I$	$4.10688 + 8.00160I$
$u = 0.52411 - 1.59798I$ $a = -0.733847 - 0.202700I$ $b = -0.700537 - 0.864249I$	$1.17695 + 8.45492I$	$-2.54896 - 11.80872I$
$u = 0.52411 + 1.59798I$ $a = -0.733847 + 0.202700I$ $b = -0.700537 + 0.864249I$	$1.17695 - 8.45492I$	$-2.54896 + 11.80872I$
$u = 0.529524 - 1.272819I$ $a = -0.731030 + 0.686544I$ $b = -0.750585 - 0.301375I$	$5.06870 + 1.53215I$	$6.64698 + 0.06326I$
$u = 0.529524 + 1.272819I$ $a = -0.731030 - 0.686544I$ $b = -0.750585 + 0.301375I$	$5.06870 - 1.53215I$	$6.64698 - 0.06326I$
$u = 0.53425 - 1.33824I$ $a = -1.53258 + 0.24376I$ $b = -1.43103 - 0.58261I$	$4.86742 + 9.03960I$	$2.67654 - 11.09888I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.53425 + 1.33824I$ $a = -1.53258 - 0.24376I$ $b = -1.43103 + 0.58261I$	$4.86742 - 9.03960I$	$2.67654 + 11.09888I$
$u = 0.53504 - 1.47340I$ $a = 0.726951 - 0.400186I$ $b = 1.097412 + 0.168495I$	$7.90856 - 0.24319I$	$8.57392 + 0.12237I$
$u = 0.53504 + 1.47340I$ $a = 0.726951 + 0.400186I$ $b = 1.097412 - 0.168495I$	$7.90856 + 0.24319I$	$8.57392 - 0.12237I$
$u = 0.568944 - 0.000711I$ $a = -0.504225 + 0.369748I$ $b = 0.845681 + 0.675804I$	$1.13963 + 2.56882I$	$0.16888 - 2.12016I$
$u = 0.568944 + 0.000711I$ $a = -0.504225 - 0.369748I$ $b = 0.845681 - 0.675804I$	$1.13963 - 2.56882I$	$0.16888 + 2.12016I$
$u = 0.704455 - 0.335430I$ $a = -0.230257 - 0.755369I$ $b = -0.496140 + 1.015630I$	$-3.06693 - 5.91340I$	$-5.33910 + 6.29314I$
$u = 0.704455 + 0.335430I$ $a = -0.230257 + 0.755369I$ $b = -0.496140 - 1.015630I$	$-3.06693 + 5.91340I$	$-5.33910 - 6.29314I$
$u = 0.758523 - 0.371148I$ $a = -0.1018867 - 0.0081553I$ $b = -0.199249 + 0.990047I$	$-5.96051 + 3.62479I$	$-8.74625 - 4.70123I$
$u = 0.758523 + 0.371148I$ $a = -0.1018867 + 0.0081553I$ $b = -0.199249 - 0.990047I$	$-5.96051 - 3.62479I$	$-8.74625 + 4.70123I$
$u = 0.801015 - 0.368704I$ $a = 0.809671 + 0.532522I$ $b = -0.097040 + 0.678675I$	$-1.18628 + 0.97362I$	$-4.69177 + 0.11830I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.801015 + 0.368704I$ $a = 0.809671 - 0.532522I$ $b = -0.097040 - 0.678675I$	$-1.18628 - 0.97362I$	$-4.69177 - 0.11830I$
$u = 1.009822 - 0.111821I$ $a = 0.138217 - 0.405761I$ $b = 0.954539 - 0.430058I$	$0.96920 - 3.40112I$	$6.48267 + 7.68033I$
$u = 1.009822 + 0.111821I$ $a = 0.138217 + 0.405761I$ $b = 0.954539 + 0.430058I$	$0.96920 + 3.40112I$	$6.48267 - 7.68033I$
$u = 1.163591 - 0.066017I$ $a = 0.0598488 + 0.0640823I$ $b = -0.987786 - 0.628731I$	$3.40089 + 6.62997I$	$2.99121 - 7.64062I$
$u = 1.163591 + 0.066017I$ $a = 0.0598488 - 0.0640823I$ $b = -0.987786 + 0.628731I$	$3.40089 - 6.62997I$	$2.99121 + 7.64062I$
$u = 2.05765$ $a = -0.0115115$ $b = 0.377018$	$-5.34489$	$47.9581$



### III. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1$	$(u^{22} - 9u^{21} + \dots - 11u + 1)(u^{106} + 8u^{105} + \dots - 8867u - 3445)$
$c_2$	$(u^{22} + 6u^{20} + \dots + 3u - 1)(u^{106} + 3u^{105} + \dots + 19u - 1)$
$c_3$	$(u^{22} + 3u^{21} + \dots + 2u + 1)(u^{106} + 10u^{105} + \dots + 35874u + 5203)$
$c_4$	$(u^{22} + u^{21} + \dots + u - 1)(u^{106} - 36u^{104} + \dots - 191u - 11)$
$c_5$	$(u^{22} - u^{21} + \dots + 2u + 1)(u^{106} + 4u^{105} + \dots + 9831064u + 2445611)$
$c_6$	$(u^{22} + 6u^{20} + \dots - 3u - 1)(u^{106} + 3u^{105} + \dots + 19u - 1)$
$c_7$	$(u^{22} - u^{21} + \dots - u - 1)(u^{106} - 36u^{104} + \dots - 191u - 11)$
$c_8$	$(u^{22} + 9u^{21} + \dots + 3u - 1)(u^{106} + 4u^{105} + \dots + 31u - 1)$
$c_9$	$(u^{22} - u^{21} + \dots - u - 1)(u^{106} - 19u^{104} + \dots - 97525u - 19379)$
$c_{10}$	$(u^{22} + 3u^{21} + \dots + 21u - 5)(u^{106} - 22u^{104} + \dots + 40099u + 4897)$
$c_{11}$	$(u^{22} + u^{21} + \dots + 3u + 1)(u^{106} + 2u^{105} + \dots - 5u + 1)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1$	$(y^{22} - 3y^{21} + \dots - 33y + 1)$ $(y^{106} - 26y^{105} + \dots - 349655619y + 11868025)$
$c_2, c_6$	$(y^{22} + 12y^{21} + \dots + 15y + 1)(y^{106} + 73y^{105} + \dots + 93y + 1)$
$c_3$	$(y^{22} - 13y^{21} + \dots + 8y + 1)$ $(y^{106} + 12y^{105} + \dots + 307328166y + 27071209)$
$c_4$	$(y^{22} - 21y^{21} + \dots - 9y + 1)(y^{106} - 72y^{105} + \dots - 20795y + 121)$
$c_5$	$(y^{22} - 19y^{21} + \dots - 16y + 1)$ $(y^{106} - 62y^{105} + \dots - 243034883661070y + 5981013163321)$
$c_7$	$(y^{22} - 21y^{21} + \dots - 9y + 1)(y^{106} - 72y^{105} + \dots - 20795y + 121)$
$c_8$	$(y^{22} - 9y^{21} + \dots - 19y + 1)(y^{106} - 8y^{105} + \dots - 345y + 1)$
$c_9$	$(y^{22} - 11y^{21} + \dots - 19y + 1)$ $(y^{106} - 38y^{105} + \dots - 3790134761y + 375545641)$
$c_{10}$	$(y^{22} - 9y^{21} + \dots - 371y + 25)$ $(y^{106} - 44y^{105} + \dots - 2051676353y + 23980609)$
$c_{11}$	$(y^{22} + 3y^{21} + \dots - y + 1)(y^{106} + 84y^{104} + \dots - 7y + 1)$