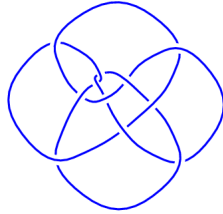
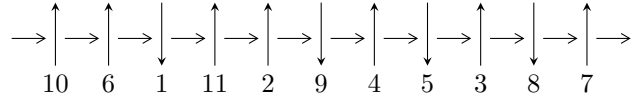


11a<sub>301</sub> (K11a<sub>301</sub>)

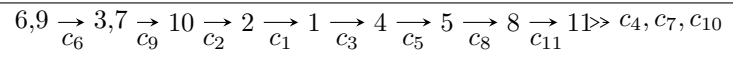


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

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

$$\begin{aligned} I_1^u &= \langle u^{25} - 7u^{23} + \dots - 2u - 1, \\ &\quad - 9566660926250u^{24} - 22937945374331u^{23} + \dots + 19862837987731b - 37700474512606, \\ &\quad 27830514848112u^{24} - 14272220201646u^{23} + \dots + 19862837987731a - 91834299751001 \rangle \\ I_2^u &= \langle u^{124} - u^{123} + \dots + 72u - 139, \\ &\quad - 1.16899 \times 10^{426} u^{123} + 3.22194 \times 10^{424} u^{122} + \dots + 2.77126 \times 10^{424} b - 1.62179 \times 10^{428}, \\ &\quad - 6.51973 \times 10^{427} u^{123} + 1.30212 \times 10^{427} u^{122} + \dots + 1.28402 \times 10^{426} a - 1.12555 \times 10^{430} \rangle \end{aligned}$$

There are 2 irreducible components with 149 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>”

$$\begin{aligned} & \mathbf{I. } I_1^u = \\ & \langle u^{25} - 7u^{23} + \dots - 2u - 1, -9.57 \times 10^{12}u^{24} - 2.29 \times 10^{13}u^{23} + \dots + 1.99 \times 10^{13}b - \\ & 3.77 \times 10^{13}, 2.78 \times 10^{13}u^{24} - 1.43 \times 10^{13}u^{23} + \dots + 1.99 \times 10^{13}a - 9.18 \times 10^{13} \rangle \end{aligned}$$

(i) Arc colorings

$$\begin{aligned} a_6 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_9 &= \begin{pmatrix} -1.40113u^{24} + 0.718539u^{23} + \dots + 7.50924u + 4.62342 \\ 0.481636u^{24} + 1.15482u^{23} + \dots + 1.50120u + 1.89804 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 0.291964u^{24} + 2.53805u^{23} + \dots + 9.23640u + 6.15545 \\ -2.95424u^{24} - 0.433937u^{23} + \dots - 7.62230u - 0.618631 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -0.919499u^{24} + 1.87336u^{23} + \dots + 9.01043u + 6.52146 \\ 0.481636u^{24} + 1.15482u^{23} + \dots + 1.50120u + 1.89804 \end{pmatrix} \\ a_2 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_1 &= \begin{pmatrix} 1.63797u^{24} + 1.05045u^{23} + \dots + 3.06790u + 4.17197 \\ -1.08477u^{24} - 0.826635u^{23} + \dots - 6.38423u - 1.55079 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 2.08841u^{24} + 2.46628u^{23} + \dots + 14.4424u + 5.35519 \\ -0.490490u^{24} + 1.75251u^{23} + \dots + 7.12683u + 3.09157 \end{pmatrix} \\ a_5 &= \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix} \\ a_8 &= \begin{pmatrix} -1.71564u^{24} + 2.19576u^{23} + \dots + 10.8410u + 6.44072 \\ -0.0985707u^{24} + 0.842274u^{23} + \dots + 0.809417u + 1.55797 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -5.54043u^{24} - 3.33819u^{23} + \dots - 17.8534u - 5.96692 \\ -0.0415282u^{24} + 0.855191u^{23} + \dots + 3.73724u + 2.18862 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -5.54043u^{24} - 3.33819u^{23} + \dots - 17.8534u - 5.96692 \\ -0.0415282u^{24} + 0.855191u^{23} + \dots + 3.73724u + 2.18862 \end{pmatrix} \end{aligned}$$

(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
$u = -1.66296$ $a = -0.425681$ $b = -0.687534$	6.74035	34.2527
$u = -1.42273 - 0.43828I$ $a = 0.190001 + 0.637843I$ $b = -0.767690 - 0.407747I$	$4.38188 + 0.00909I$	$13.9093 + 7.6065I$
$u = -1.42273 + 0.43828I$ $a = 0.190001 - 0.637843I$ $b = -0.767690 + 0.407747I$	$4.38188 - 0.00909I$	$13.9093 - 7.6065I$
$u = -1.013839 - 0.591892I$ $a = -0.256352 - 1.338327I$ $b = 0.693003 + 0.449935I$	$2.51471 + 5.48521I$	$6.21875 - 9.80992I$
$u = -1.013839 + 0.591892I$ $a = -0.256352 + 1.338327I$ $b = 0.693003 - 0.449935I$	$2.51471 - 5.48521I$	$6.21875 + 9.80992I$
$u = -0.876104$ $a = 1.21897$ $b = 3.16510$	-0.364419	-189.581
$u = -0.873467 - 0.111550I$ $a = -0.040803 - 0.294723I$ $b = -0.11201 + 2.52927I$	$1.22395 + 2.21489I$	$-22.7692 + 42.0523I$
$u = -0.873467 + 0.111550I$ $a = -0.040803 + 0.294723I$ $b = -0.11201 - 2.52927I$	$1.22395 - 2.21489I$	$-22.7692 - 42.0523I$
$u = -0.287378 - 0.397064I$ $a = 1.96929 - 1.39666I$ $b = 0.197887 + 0.987490I$	$-2.28761 + 0.16331I$	$-3.97387 - 2.11947I$
$u = -0.287378 + 0.397064I$ $a = 1.96929 + 1.39666I$ $b = 0.197887 - 0.987490I$	$-2.28761 - 0.16331I$	$-3.97387 + 2.11947I$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.184677 - 0.468629I$		
$a = 0.098916 - 1.097736I$	$-0.00198 - 1.97890I$	$3.19371 + 3.54742I$
$b = 0.825373 - 0.464229I$		
$u = -0.184677 + 0.468629I$		
$a = 0.098916 + 1.097736I$	$-0.00198 + 1.97890I$	$3.19371 - 3.54742I$
$b = 0.825373 + 0.464229I$		
$u = -0.09052 - 1.43658I$		
$a = 0.239049 + 0.151020I$	$-3.88143 + 4.15868I$	$18.7400 + 3.0875I$
$b = -0.244346 + 0.043928I$		
$u = -0.09052 + 1.43658I$		
$a = 0.239049 - 0.151020I$	$-3.88143 - 4.15868I$	$18.7400 - 3.0875I$
$b = -0.244346 - 0.043928I$		
$u = 0.250280 - 0.975610I$		
$a = -0.919588 - 0.342099I$	$-0.03348 + 4.41999I$	$3.63153 - 5.52366I$
$b = 0.953676 + 0.664284I$		
$u = 0.250280 + 0.975610I$		
$a = -0.919588 + 0.342099I$	$-0.03348 - 4.41999I$	$3.63153 + 5.52366I$
$b = 0.953676 - 0.664284I$		
$u = 0.787623 - 0.086296I$		
$a = 2.31593 - 0.33719I$	$0.45122 - 8.35463I$	$4.47613 + 5.35998I$
$b = 0.314112 + 0.808920I$		
$u = 0.787623 + 0.086296I$		
$a = 2.31593 + 0.33719I$	$0.45122 + 8.35463I$	$4.47613 - 5.35998I$
$b = 0.314112 - 0.808920I$		
$u = 0.808927 - 0.298395I$		
$a = -1.84872 - 1.31377I$	$-1.90155 - 1.42245I$	$2.96243 + 4.09194I$
$b = -0.183119 + 1.339206I$		
$u = 0.808927 + 0.298395I$		
$a = -1.84872 + 1.31377I$	$-1.90155 + 1.42245I$	$2.96243 - 4.09194I$
$b = -0.183119 - 1.339206I$		

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.260842 - 0.179149I$ $a = 0.950617 + 0.799970I$ $b = 0.370446 - 0.711874I$	$2.80785 - 8.52963I$	$4.73872 + 7.98573I$
$u = 1.260842 + 0.179149I$ $a = 0.950617 - 0.799970I$ $b = 0.370446 + 0.711874I$	$2.80785 + 8.52963I$	$4.73872 - 7.98573I$
$u = 1.264943 - 0.584485I$ $a = -0.159673 - 1.121244I$ $b = -1.38823 + 0.82215I$	$3.14760 - 10.12390I$	$5.21619 + 8.21271I$
$u = 1.264943 + 0.584485I$ $a = -0.159673 + 1.121244I$ $b = -1.38823 - 0.82215I$	$3.14760 + 10.12390I$	$5.21619 - 8.21271I$
$u = 1.53907$ $a = -0.870625$ $b = -0.795782$	7.10071	7.64135

$$\text{II. } I_2^u = \langle u^{124} - u^{123} + \dots + 72u - 139, -1.17 \times 10^{426}u^{123} + 3.22 \times 10^{424}u^{122} + \dots + 2.77 \times 10^{424}b - 1.62 \times 10^{428}, -6.52 \times 10^{427}u^{123} + 1.30 \times 10^{427}u^{122} + \dots + 1.28 \times 10^{426}a - 1.13 \times 10^{430} \rangle$$

(i) Arc colorings

$$\begin{aligned} a_6 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_9 &= \begin{pmatrix} 50.7760u^{123} - 10.1409u^{122} + \dots + 6237.44u + 8765.86 \\ 42.1826u^{123} - 1.16263u^{122} + \dots + 2521.74u + 5852.16 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 34.5243u^{123} - 6.25865u^{122} + \dots + 3698.51u + 5768.67 \\ 11.4223u^{123} - 0.700100u^{122} + \dots + 943.261u + 1677.60 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 92.9586u^{123} - 11.3036u^{122} + \dots + 8759.18u + 14618.0 \\ 42.1826u^{123} - 1.16263u^{122} + \dots + 2521.74u + 5852.16 \end{pmatrix} \\ a_2 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_1 &= \begin{pmatrix} -5.00646u^{123} + 4.79793u^{122} + \dots - 2365.30u - 1732.01 \\ -31.9252u^{123} + 10.1950u^{122} + \dots - 5531.06u - 6308.34 \end{pmatrix} \\ a_4 &= \begin{pmatrix} -124.235u^{123} + 22.8343u^{122} + \dots - 15054.5u - 21208.6 \\ -85.2237u^{123} + 10.8039u^{122} + \dots - 8254.49u - 13491.4 \end{pmatrix} \\ a_5 &= \begin{pmatrix} -u \\ -u^3 + u \end{pmatrix} \\ a_8 &= \begin{pmatrix} 102.195u^{123} - 14.9472u^{122} + \dots + 10619.6u + 16588.2 \\ 32.7163u^{123} - 0.757045u^{122} + \dots + 1930.76u + 4508.98 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -19.4270u^{123} + 10.0533u^{122} + \dots - 5043.28u - 4731.63 \\ -16.2148u^{123} + 7.73509u^{122} + \dots - 3918.69u - 3758.08 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -19.4270u^{123} + 10.0533u^{122} + \dots - 5043.28u - 4731.63 \\ -16.2148u^{123} + 7.73509u^{122} + \dots - 3918.69u - 3758.08 \end{pmatrix} \end{aligned}$$

(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
$u = -1.51152 - 0.32263I$ $a = -0.131221 - 0.428059I$ $b = 0.905113 - 0.082409I$	$5.24614 - 8.13622I$	$9.52652 + 6.64534I$
$u = -1.51152 + 0.32263I$ $a = -0.131221 + 0.428059I$ $b = 0.905113 + 0.082409I$	$5.24614 + 8.13622I$	$9.52652 - 6.64534I$
$u = -1.47872$ $a = -0.838700$ $b = -0.848700$	$7.51916$	$23.7591$
$u = -1.362376 - 0.228703I$ $a = -0.358032 + 0.719622I$ $b = -0.941017 - 0.180195I$	$7.28528 + 0.60219I$	$14.8493 + 0.6836I$
$u = -1.362376 + 0.228703I$ $a = -0.358032 - 0.719622I$ $b = -0.941017 + 0.180195I$	$7.28528 - 0.60219I$	$14.8493 - 0.6836I$
$u = -1.35588 - 0.60851I$ $a = -0.159539 + 0.837442I$ $b = -0.908541 - 0.909807I$	$-0.03985 + 10.93606I$	$1.39239 - 10.45208I$
$u = -1.35588 + 0.60851I$ $a = -0.159539 - 0.837442I$ $b = -0.908541 + 0.909807I$	$-0.03985 - 10.93606I$	$1.39239 + 10.45208I$
$u = -1.33096 - 0.55807I$ $a = -0.319397 + 0.981960I$ $b = -1.32194 - 0.87901I$	$4.62342 + 11.12335I$	$9.6650 - 10.6846I$
$u = -1.33096 + 0.55807I$ $a = -0.319397 - 0.981960I$ $b = -1.32194 + 0.87901I$	$4.62342 - 11.12335I$	$9.6650 + 10.6846I$
$u = -1.29947 - 0.56604I$ $a = 0.211684 - 1.276647I$ $b = 1.31484 + 1.03648I$	$1.99861 + 11.17671I$	$1.23563 - 11.69831I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.29947 + 0.56604I$ $a = 0.211684 + 1.276647I$ $b = 1.31484 - 1.03648I$	$1.99861 - 11.17671I$	$1.23563 + 11.69831I$
$u = -1.298614 - 0.346791I$ $a = 0.169980 - 0.866883I$ $b = 1.52916 + 1.06885I$	$6.66391 + 10.08312I$	$9.80360 - 9.36287I$
$u = -1.298614 + 0.346791I$ $a = 0.169980 + 0.866883I$ $b = 1.52916 - 1.06885I$	$6.66391 - 10.08312I$	$9.80360 + 9.36287I$
$u = -1.282749 - 0.332541I$ $a = -0.371921 + 0.438175I$ $b = -1.282310 - 0.497854I$	$5.41452 + 4.79102I$	$10.46509 - 5.06777I$
$u = -1.282749 + 0.332541I$ $a = -0.371921 - 0.438175I$ $b = -1.282310 + 0.497854I$	$5.41452 - 4.79102I$	$10.46509 + 5.06777I$
$u = -1.274830 - 0.478814I$ $a = 0.685937 - 1.009153I$ $b = 0.816944 + 0.720888I$	$0.50756 + 6.82066I$	$0.46170 - 7.55465I$
$u = -1.274830 + 0.478814I$ $a = 0.685937 + 1.009153I$ $b = 0.816944 - 0.720888I$	$0.50756 - 6.82066I$	$0.46170 + 7.55465I$
$u = -1.230136 - 0.372722I$ $a = -0.718327 + 1.128708I$ $b = -1.13837 - 0.91038I$	$5.49496 + 6.43122I$	$10.18699 - 6.06131I$
$u = -1.230136 + 0.372722I$ $a = -0.718327 - 1.128708I$ $b = -1.13837 + 0.91038I$	$5.49496 - 6.43122I$	$10.18699 + 6.06131I$
$u = -1.161982 - 0.628531I$ $a = -0.463167 - 0.976912I$ $b = 1.275575 + 0.191268I$	$5.32803 + 7.42169I$	$9.21112 - 7.71055I$



Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.161982 + 0.628531I$ $a = -0.463167 + 0.976912I$ $b = 1.275575 - 0.191268I$	$5.32803 - 7.42169I$	$9.21112 + 7.71055I$
$u = -1.140127 - 0.497947I$ $a = 0.240449 - 1.186829I$ $b = 0.836530 + 0.927323I$	$0.30443 + 5.54665I$	$-0.08940 - 5.89950I$
$u = -1.140127 + 0.497947I$ $a = 0.240449 + 1.186829I$ $b = 0.836530 - 0.927323I$	$0.30443 - 5.54665I$	$-0.08940 + 5.89950I$
$u = -1.082874 - 0.066267I$ $a = -0.847879 - 1.039526I$ $b = -0.805102 - 0.004521I$	$4.35169 + 3.41606I$	$11.08011 - 5.16414I$
$u = -1.082874 + 0.066267I$ $a = -0.847879 + 1.039526I$ $b = -0.805102 + 0.004521I$	$4.35169 - 3.41606I$	$11.08011 + 5.16414I$
$u = -1.026585 - 0.019415I$ $a = 0.49001 + 1.67926I$ $b = 0.811133 - 0.640015I$	$4.16687 - 3.71959I$	$9.83308 + 4.24251I$
$u = -1.026585 + 0.019415I$ $a = 0.49001 - 1.67926I$ $b = 0.811133 + 0.640015I$	$4.16687 + 3.71959I$	$9.83308 - 4.24251I$
$u = -1.003741 - 0.303527I$ $a = -0.448839 + 0.574350I$ $b = 0.58661 - 1.97658I$	$0.79053 + 10.52766I$	$3.74257 - 11.78270I$
$u = -1.003741 + 0.303527I$ $a = -0.448839 - 0.574350I$ $b = 0.58661 + 1.97658I$	$0.79053 - 10.52766I$	$3.74257 + 11.78270I$
$u = -0.981740 - 0.336373I$ $a = -0.030831 - 1.250052I$ $b = 0.172395 + 0.978948I$	$0.03669 + 4.64999I$	$2.21436 - 8.95656I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.981740 + 0.336373I$ $a = -0.030831 + 1.250052I$ $b = 0.172395 - 0.978948I$	$0.03669 - 4.64999I$	$2.21436 + 8.95656I$
$u = -0.967014 - 0.360220I$ $a = -1.11221 - 0.89671I$ $b = -0.017238 + 0.228701I$	$-0.31910 + 5.18786I$	$0.87451 - 7.38022I$
$u = -0.967014 + 0.360220I$ $a = -1.11221 + 0.89671I$ $b = -0.017238 - 0.228701I$	$-0.31910 - 5.18786I$	$0.87451 + 7.38022I$
$u = -0.902521 - 0.400409I$ $a = 0.444652 + 1.290242I$ $b = -1.054325 - 0.045528I$	$3.54338 - 2.85043I$	$7.75460 + 3.66431I$
$u = -0.902521 + 0.400409I$ $a = 0.444652 - 1.290242I$ $b = -1.054325 + 0.045528I$	$3.54338 + 2.85043I$	$7.75460 - 3.66431I$
$u = -0.754686 - 0.314010I$ $a = 1.69196 - 0.93222I$ $b = 0.315807 + 0.807809I$	$-2.56211 + 1.56337I$	$-4.21827 - 5.29407I$
$u = -0.754686 + 0.314010I$ $a = 1.69196 + 0.93222I$ $b = 0.315807 - 0.807809I$	$-2.56211 - 1.56337I$	$-4.21827 + 5.29407I$
$u = -0.728555 - 0.361797I$ $a = 1.20006 - 1.09998I$ $b = 0.104359 + 1.261441I$	$-2.62639 + 1.64108I$	$-5.77512 - 6.11884I$
$u = -0.728555 + 0.361797I$ $a = 1.20006 + 1.09998I$ $b = 0.104359 - 1.261441I$	$-2.62639 - 1.64108I$	$-5.77512 + 6.11884I$
$u = -0.723255 - 0.345420I$ $a = 1.18650 - 1.33883I$ $b = 0.080366 + 1.149697I$	$-2.63047 + 1.63595I$	$-5.72674 - 5.14319I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.723255 + 0.345420I$		
$a = 1.18650 + 1.33883I$	$-2.63047 - 1.63595I$	$-5.72674 + 5.14319I$
$b = 0.080366 - 1.149697I$		
$u = -0.666621 - 0.487837I$		
$a = -0.544124 + 0.993962I$	$-1.16295 + 7.26280I$	$0.93396 - 8.40376I$
$b = -1.325169 - 0.034639I$		
$u = -0.666621 + 0.487837I$		
$a = -0.544124 - 0.993962I$	$-1.16295 - 7.26280I$	$0.93396 + 8.40376I$
$b = -1.325169 + 0.034639I$		
$u = -0.620175 - 0.676778I$		
$a = -0.101177 - 0.281451I$	$-1.33088 - 2.75508I$	$-0.97768 + 4.59798I$
$b = 0.926159 - 0.574802I$		
$u = -0.620175 + 0.676778I$		
$a = -0.101177 + 0.281451I$	$-1.33088 + 2.75508I$	$-0.97768 - 4.59798I$
$b = 0.926159 + 0.574802I$		
$u = -0.473726 - 0.726376I$		
$a = 1.214667 - 0.478694I$	$-1.87990 - 0.88255I$	$-1.00701 + 4.06362I$
$b = -0.275723 + 0.695996I$		
$u = -0.473726 + 0.726376I$		
$a = 1.214667 + 0.478694I$	$-1.87990 + 0.88255I$	$-1.00701 - 4.06362I$
$b = -0.275723 - 0.695996I$		
$u = -0.406025 - 0.276507I$		
$a = -2.48635 + 0.70817I$	$-0.84000 - 7.70761I$	$0.25185 + 3.67559I$
$b = -0.957307 - 0.818654I$		
$u = -0.406025 + 0.276507I$		
$a = -2.48635 - 0.70817I$	$-0.84000 + 7.70761I$	$0.25185 - 3.67559I$
$b = -0.957307 + 0.818654I$		
$u = -0.353484 - 0.426613I$		
$a = 1.56137 + 0.67169I$	$-1.90205 - 1.81393I$	$-1.82423 + 1.78717I$
$b = -0.103953 - 0.615400I$		

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.353484 + 0.426613I$ $a = 1.56137 - 0.67169I$ $b = -0.103953 + 0.615400I$	$-1.90205 + 1.81393I$	$-1.82423 - 1.78717I$
$u = -0.222879 - 0.437713I$ $a = 1.92072 - 1.10769I$ $b = -0.361004 + 0.071038I$	$-1.81230 - 1.33593I$	$-2.04288 + 1.77817I$
$u = -0.222879 + 0.437713I$ $a = 1.92072 + 1.10769I$ $b = -0.361004 - 0.071038I$	$-1.81230 + 1.33593I$	$-2.04288 - 1.77817I$
$u = -0.202862 - 0.644395I$ $a = 1.52764 + 0.82615I$ $b = -0.971016 - 0.386930I$	$3.09709 - 2.40486I$	$7.21718 + 2.36179I$
$u = -0.202862 + 0.644395I$ $a = 1.52764 - 0.82615I$ $b = -0.971016 + 0.386930I$	$3.09709 + 2.40486I$	$7.21718 - 2.36179I$
$u = -0.164338 - 0.905321I$ $a = 0.365425 - 1.091493I$ $b = -0.502584 + 0.731753I$	$-3.01569 - 1.80444I$	$-4.17954 + 5.36592I$
$u = -0.164338 + 0.905321I$ $a = 0.365425 + 1.091493I$ $b = -0.502584 - 0.731753I$	$-3.01569 + 1.80444I$	$-4.17954 - 5.36592I$
$u = -0.130974 - 1.391328I$ $a = -0.373037 + 0.241256I$ $b = 0.303924 - 0.360032I$	$-4.06171 - 4.34396I$	$-4.9222 + 18.6308I$
$u = -0.130974 + 1.391328I$ $a = -0.373037 - 0.241256I$ $b = 0.303924 + 0.360032I$	$-4.06171 + 4.34396I$	$-4.9222 - 18.6308I$
$u = -0.130351 - 1.065563I$ $a = 1.060260 - 0.669104I$ $b = -0.928596 + 0.693787I$	$-1.66000 - 5.39588I$	$-2.39328 + 9.80507I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.130351 + 1.065563I$ $a = 1.060260 + 0.669104I$ $b = -0.928596 - 0.693787I$	$-1.66000 + 5.39588I$	$-2.39328 - 9.80507I$
$u = -0.056287 - 1.124513I$ $a = -0.627066 + 0.498686I$ $b = 0.823769 - 0.715592I$	$0.63793 - 5.24548I$	$7.8605 + 13.2097I$
$u = -0.056287 + 1.124513I$ $a = -0.627066 - 0.498686I$ $b = 0.823769 + 0.715592I$	$0.63793 + 5.24548I$	$7.8605 - 13.2097I$
$u = 0.135528 - 1.139775I$ $a = 0.909860 + 0.639420I$ $b = -0.995014 - 0.762423I$	$-0.38053 + 13.73559I$	$2.72176 - 8.87383I$
$u = 0.135528 + 1.139775I$ $a = 0.909860 - 0.639420I$ $b = -0.995014 + 0.762423I$	$-0.38053 - 13.73559I$	$2.72176 + 8.87383I$
$u = 0.204781 - 0.248646I$ $a = 0.908752 + 0.152647I$ $b = 0.524269 - 0.994387I$	$0.63025 - 2.44930I$	$0.344766 + 0.605560I$
$u = 0.204781 + 0.248646I$ $a = 0.908752 - 0.152647I$ $b = 0.524269 + 0.994387I$	$0.63025 + 2.44930I$	$0.344766 - 0.605560I$
$u = 0.209325 - 0.665517I$ $a = -0.446341 + 1.156356I$ $b = 0.873908 - 0.720217I$	$1.42391 - 2.71255I$	$9.02648 + 4.76506I$
$u = 0.209325 + 0.665517I$ $a = -0.446341 - 1.156356I$ $b = 0.873908 + 0.720217I$	$1.42391 + 2.71255I$	$9.02648 - 4.76506I$
$u = 0.279917 - 0.908578I$ $a = -0.727471 - 0.254710I$ $b = 0.643948 - 0.220659I$	$0.412874 - 0.819655I$	$7.56140 + 0.60785I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.279917 + 0.908578I$ $a = -0.727471 + 0.254710I$ $b = 0.643948 + 0.220659I$	$0.412874 + 0.819655I$	$7.56140 - 0.60785I$
$u = 0.286796 - 1.148043I$ $a = -0.760176 - 0.226633I$ $b = 0.989083 + 0.438122I$	$1.05806 + 3.93290I$	$11.93197 - 6.63096I$
$u = 0.286796 + 1.148043I$ $a = -0.760176 + 0.226633I$ $b = 0.989083 - 0.438122I$	$1.05806 - 3.93290I$	$11.93197 + 6.63096I$
$u = 0.306946 - 1.234065I$ $a = 0.148516 + 0.378047I$ $b = -0.300540 - 0.478215I$	$-4.24023 - 4.13181I$	$-7.13387 - 1.92851I$
$u = 0.306946 + 1.234065I$ $a = 0.148516 - 0.378047I$ $b = -0.300540 + 0.478215I$	$-4.24023 + 4.13181I$	$-7.13387 + 1.92851I$
$u = 0.378914 - 0.858907I$ $a = -1.224345 - 0.355291I$ $b = 1.108482 + 0.790196I$	$-0.68132 + 4.84270I$	$-4.54475 - 11.52841I$
$u = 0.378914 + 0.858907I$ $a = -1.224345 + 0.355291I$ $b = 1.108482 - 0.790196I$	$-0.68132 - 4.84270I$	$-4.54475 + 11.52841I$
$u = 0.415249 - 0.881418I$ $a = 1.043863 - 0.800954I$ $b = -0.737227 + 0.595686I$	$1.58492 - 6.17096I$	$4.31256 + 13.00490I$
$u = 0.415249 + 0.881418I$ $a = 1.043863 + 0.800954I$ $b = -0.737227 - 0.595686I$	$1.58492 + 6.17096I$	$4.31256 - 13.00490I$
$u = 0.580493$ $a = 0.598355$ $b = 0.803283$	$1.11567$	$9.71798$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.604325 - 0.233411I$ $a = 0.875607 + 0.139292I$ $b = 0.967821 - 0.447808I$	$1.125908 + 0.058649I$	$9.77966 - 1.14371I$
$u = 0.604325 + 0.233411I$ $a = 0.875607 - 0.139292I$ $b = 0.967821 + 0.447808I$	$1.125908 - 0.058649I$	$9.77966 + 1.14371I$
$u = 0.718578 - 0.271560I$ $a = 0.73614 + 2.23244I$ $b = -0.353143 - 0.997828I$	$0.14344 + 6.85085I$	$0.89434 - 3.58931I$
$u = 0.718578 + 0.271560I$ $a = 0.73614 - 2.23244I$ $b = -0.353143 + 0.997828I$	$0.14344 - 6.85085I$	$0.89434 + 3.58931I$
$u = 0.778187 - 0.053999I$ $a = 0.238480 - 0.645550I$ $b = 1.37632 + 1.01669I$	$0.90588 + 1.95079I$	$19.8667 + 3.8950I$
$u = 0.778187 + 0.053999I$ $a = 0.238480 + 0.645550I$ $b = 1.37632 - 1.01669I$	$0.90588 - 1.95079I$	$19.8667 - 3.8950I$
$u = 0.787800 - 0.133246I$ $a = -2.11122 - 0.07839I$ $b = -0.516699 + 0.958806I$	$-1.281750 - 0.477205I$	$6.26687 + 4.21091I$
$u = 0.787800 + 0.133246I$ $a = -2.11122 + 0.07839I$ $b = -0.516699 - 0.958806I$	$-1.281750 + 0.477205I$	$6.26687 - 4.21091I$
$u = 0.887361$ $a = -1.21494$ $b = -3.43727$	$-0.348139$	$308.513$
$u = 0.910883 - 0.103249I$ $a = -0.029605 + 0.334130I$ $b = -0.48468 - 2.94007I$	$1.26801 - 2.24082I$	$115.5926 + 24.6052I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.910883 + 0.103249I$ $a = -0.029605 - 0.334130I$ $b = -0.48468 + 2.94007I$	$1.26801 + 2.24082I$	$115.5926 - 24.6052I$
$u = 0.922490 - 0.200559I$ $a = 2.96827 + 0.00577I$ $b = 0.366441 - 0.434684I$	$0.58612 - 9.17333I$	$3.8786 + 14.1705I$
$u = 0.922490 + 0.200559I$ $a = 2.96827 - 0.00577I$ $b = 0.366441 + 0.434684I$	$0.58612 + 9.17333I$	$3.8786 - 14.1705I$
$u = 0.974071 - 0.190755I$ $a = -0.738936 - 1.051967I$ $b = 0.18852 + 1.65134I$	$-0.577215 - 1.239638I$	$3.85277 - 4.02028I$
$u = 0.974071 + 0.190755I$ $a = -0.738936 + 1.051967I$ $b = 0.18852 - 1.65134I$	$-0.577215 + 1.239638I$	$3.85277 + 4.02028I$
$u = 1.018328 - 0.170276I$ $a = -1.006165 + 0.272646I$ $b = -1.51339 + 0.05960I$	$1.91161 - 3.30620I$	$7.62618 - 2.48693I$
$u = 1.018328 + 0.170276I$ $a = -1.006165 - 0.272646I$ $b = -1.51339 - 0.05960I$	$1.91161 + 3.30620I$	$7.62618 + 2.48693I$
$u = 1.053562 - 0.259839I$ $a = -0.256838 - 0.122159I$ $b = 1.15540 + 1.00135I$	$1.29889 - 0.96212I$	$2.44778 - 6.04509I$
$u = 1.053562 + 0.259839I$ $a = -0.256838 + 0.122159I$ $b = 1.15540 - 1.00135I$	$1.29889 + 0.96212I$	$2.44778 + 6.04509I$
$u = 1.175831 - 0.567049I$ $a = -0.271660 - 1.338510I$ $b = -1.50816 + 0.91766I$	$1.83731 - 10.15765I$	$-0.90423 + 10.59297I$



Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.175831 + 0.567049I$ $a = -0.271660 + 1.338510I$ $b = -1.50816 - 0.91766I$	$1.83731 + 10.15765I$	$-0.90423 - 10.59297I$
$u = 1.185908 - 0.649910I$ $a = 0.220858 - 0.571953I$ $b = -0.801512 - 0.145810I$	$3.67966 - 2.39413I$	$10.56719 + 6.03684I$
$u = 1.185908 + 0.649910I$ $a = 0.220858 + 0.571953I$ $b = -0.801512 + 0.145810I$	$3.67966 + 2.39413I$	$10.56719 - 6.03684I$
$u = 1.227066 - 0.361377I$ $a = 0.247165 + 1.120765I$ $b = 1.53283 - 0.92594I$	$7.16425 - 1.23899I$	$11.23142 + 0.33642I$
$u = 1.227066 + 0.361377I$ $a = 0.247165 - 1.120765I$ $b = 1.53283 + 0.92594I$	$7.16425 + 1.23899I$	$11.23142 - 0.33642I$
$u = 1.237590 - 0.200677I$ $a = 0.97205 + 1.64452I$ $b = 0.612212 - 0.277647I$	$3.80630 - 8.79406I$	$12.8229 + 10.4565I$
$u = 1.237590 + 0.200677I$ $a = 0.97205 - 1.64452I$ $b = 0.612212 + 0.277647I$	$3.80630 + 8.79406I$	$12.8229 - 10.4565I$
$u = 1.247093 - 0.604854I$ $a = 0.349314 + 0.761437I$ $b = 0.921060 - 0.661147I$	$-1.12331 - 2.07608I$	$-0.244191 + 1.313936I$
$u = 1.247093 + 0.604854I$ $a = 0.349314 - 0.761437I$ $b = 0.921060 + 0.661147I$	$-1.12331 + 2.07608I$	$-0.244191 - 1.313936I$
$u = 1.27280 - 0.66609I$ $a = 0.058695 - 0.954674I$ $b = -0.664241 + 0.474436I$	$3.09909 - 5.04243I$	$15.1291 + 4.7126I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.27280 + 0.66609I$ $a = 0.058695 + 0.954674I$ $b = -0.664241 - 0.474436I$	$3.09909 + 5.04243I$	$15.1291 - 4.7126I$
$u = 1.30440 - 0.63891I$ $a = -0.120689 - 1.045730I$ $b = -1.33399 + 0.63559I$	$4.33583 - 10.29565I$	$11.5638 + 10.3832I$
$u = 1.30440 + 0.63891I$ $a = -0.120689 + 1.045730I$ $b = -1.33399 - 0.63559I$	$4.33583 + 10.29565I$	$11.5638 - 10.3832I$
$u = 1.32500 - 0.59302I$ $a = 0.269558 + 1.204262I$ $b = 1.36335 - 0.98073I$	$3.3644 - 19.8329I$	$5.14709 + 10.41537I$
$u = 1.32500 + 0.59302I$ $a = 0.269558 - 1.204262I$ $b = 1.36335 + 0.98073I$	$3.3644 + 19.8329I$	$5.14709 - 10.41537I$
$u = 1.361952 - 0.132338I$ $a = -0.183706 - 0.468742I$ $b = -0.511936 + 1.025275I$	$3.21210 - 0.97964I$	$3.00399 + 3.74230I$
$u = 1.361952 + 0.132338I$ $a = -0.183706 + 0.468742I$ $b = -0.511936 - 1.025275I$	$3.21210 + 0.97964I$	$3.00399 - 3.74230I$
$u = 1.38103 - 0.32486I$ $a = -0.207501 + 0.523064I$ $b = 1.106957 - 0.221913I$	$3.58744 + 0.34494I$	$5.29198 - 8.26897I$
$u = 1.38103 + 0.32486I$ $a = -0.207501 - 0.523064I$ $b = 1.106957 + 0.221913I$	$3.58744 - 0.34494I$	$5.29198 + 8.26897I$
$u = 1.38822 - 0.62525I$ $a = -0.316093 + 0.623687I$ $b = 0.801730 - 0.353444I$	$4.35720 - 0.37879I$	$13.1840 + 12.9689I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.38822 + 0.62525I$ $a = -0.316093 - 0.623687I$ $b = 0.801730 + 0.353444I$	$4.35720 + 0.37879I$	$13.1840 - 12.9689I$
$u = 1.44240 - 0.31637I$ $a = -0.166684 - 0.669338I$ $b = -0.642803 + 0.062231I$	$6.05427 - 0.44106I$	$14.4964 + 3.1324I$
$u = 1.44240 + 0.31637I$ $a = -0.166684 + 0.669338I$ $b = -0.642803 - 0.062231I$	$6.05427 + 0.44106I$	$14.4964 - 3.1324I$
$u = 1.63558$ $a = -0.556886$ $b = -0.672269$	$6.58901$	$-21.2281$

### III. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1$	$(u^{25} - 7u^{24} + \dots - u + 1)(u^{124} + 4u^{123} + \dots + 455u + 106)$
$c_2$	$(u^{25} - 7u^{23} + \dots - 2u - 1)(u^{124} + u^{123} + \dots - 72u - 139)$
$c_3$	$(u^{25} + 4u^{24} + \dots + u + 1)(u^{124} + 9u^{123} + \dots - 97u - 1)$
$c_4$	$(u^{25} + 2u^{24} + \dots - 4u + 1)(u^{124} + u^{123} + \dots + 107262u^{110} + 18)$
$c_5$	$(u^{25} - 7u^{23} + \dots - 2u + 1)(u^{124} + u^{123} + \dots - 72u - 139)$
$c_6$	$(u^{25} - 6u^{24} + \dots - 4u + 1)(u^{124} + 3u^{123} + \dots - 5093u + 1919)$
$c_7$	$(u^{25} + 2u^{24} + \dots - 5u + 1)(u^{124} + 3u^{123} + \dots - 19u - 1)$
$c_8$	$(u^{25} + 2u^{24} + \dots - 16u - 1)(u^{124} + u^{123} + \dots - 104u + 13)$
$c_9$	$(u^{25} + 3u^{24} + \dots - 6u + 1)(u^{124} - 13u^{122} + \dots - 27900u - 5737)$
$c_{10}$	$(u^{25} + 10u^{24} + \dots + 4u - 1)(u^{124} + 3u^{123} + \dots - 26u - 5)$
$c_{11}$	$(u^{25} + 2u^{24} + \dots - 17u + 1)(u^{124} + u^{123} + \dots - 23u - 1)$

#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1$	$(y^{25} - 23y^{24} + \dots + 23y - 1)(y^{124} - 32y^{123} + \dots - 782641y + 11444)$
$c_2, c_5$	$(y^{25} - 14y^{24} + \dots + 2y - 1)(y^{124} - 75y^{123} + \dots - 605108y + 19321)$
$c_3$	$(y^{25} - 4y^{24} + \dots + 99y - 1)(y^{124} + 27y^{123} + \dots - 8505y + 1)$
$c_4$	$(y^{25} - 8y^{24} + \dots + 30y^2 - 1)(y^{124} + 3y^{123} + \dots + 15799y + 360)$
$c_6$	$(y^{25} - 12y^{24} + \dots - 28y - 1)$ $(y^{124} + 11y^{123} + \dots + 56087664y + 3682556)$
$c_7$	$(y^{25} - 4y^{24} + \dots + 9y - 1)(y^{124} - 17y^{123} + \dots - 287y + 1)$
$c_8$	$(y^{25} - 2y^{24} + \dots + 114y - 1)(y^{124} - 23y^{123} + \dots + 29224y + 169)$
$c_9$	$(y^{25} + 3y^{24} + \dots + 32y - 1)$ $(y^{124} - 26y^{123} + \dots + 93166509y + 32913168)$
$c_{10}$	$(y^{25} - 12y^{24} + \dots + 28y - 1)(y^{124} - 5y^{123} + \dots - 7526y + 25)$
$c_{11}$	$(y^{25} - 10y^{24} + \dots + 111y - 1)(y^{124} - 7y^{123} + \dots - 113y + 1)$