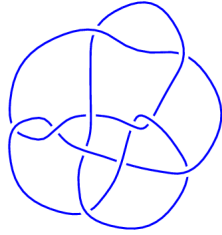
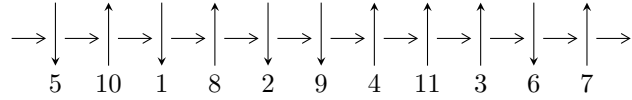


11a<sub>300</sub> (K11a<sub>300</sub>)

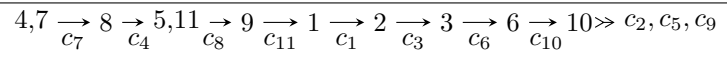


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

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

$$I_1^u = \langle u^{20} - 2u^{19} + \dots + 4u - 1, -83716u^{19} + 174490u^{18} + \dots + 26075b - 78693, \\ -427886u^{19} + 630440u^{18} + \dots + 26075a - 534178 \rangle$$

$$I_2^u = \langle u^{96} - u^{95} + \dots - 60u - 101, \\ -1.15165 \times 10^{224}u^{95} + 2.85845 \times 10^{224}u^{94} + \dots + 6.61928 \times 10^{223}b + 4.00656 \times 10^{225}, \\ -1.39175 \times 10^{226}u^{95} + 2.37648 \times 10^{226}u^{94} + \dots + 6.68548 \times 10^{225}a + 1.90811 \times 10^{228} \rangle$$

There are 2 irreducible components with 116 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.

$$I_1^u = \langle u^{20} - 2u^{19} + \dots + 4u - 1, -8.37 \times 10^4 u^{19} + 1.74 \times 10^5 u^{18} + \dots + 2.61 \times 10^4 b - 7.87 \times 10^4, -4.28 \times 10^5 u^{19} + 6.30 \times 10^5 u^{18} + \dots + 2.61 \times 10^4 a - 5.34 \times 10^5 \rangle$$

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 16.4098u^{19} - 24.1779u^{18} + \dots - 43.1378u + 20.4862 \\ 3.21058u^{19} - 6.69185u^{18} + \dots - 4.18919u + 3.01795 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -14.6256u^{19} + 19.3386u^{18} + \dots + 64.4739u - 25.6434 \\ 24.1637u^{19} - 33.4667u^{18} + \dots - 83.8067u + 33.9123 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 16.4098u^{19} - 24.1779u^{18} + \dots - 43.1378u + 20.4862 \\ -4.94221u^{19} + 6.07747u^{18} + \dots + 13.9677u - 5.62374 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 12.3386u^{19} - 17.8878u^{18} + \dots - 30.0888u + 15.6612 \\ -2.43973u^{19} + 1.22013u^{18} + \dots + 12.5420u - 3.62389 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -30.6143u^{19} + 41.7586u^{18} + \dots + 119.116u - 46.4503 \\ 25.8826u^{19} - 33.7473u^{18} + \dots - 97.4547u + 37.4879 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 14.8768u^{19} - 14.2673u^{18} + \dots - 94.1867u + 31.6433 \\ 0.251237u^{19} + 4.07133u^{18} + \dots - 29.7129u + 9.99992 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -9.41515u^{19} + 11.1496u^{18} + \dots + 40.8150u - 16.0518 \\ -51.8152u^{19} + 68.7753u^{18} + \dots + 201.898u - 80.6084 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -9.41515u^{19} + 11.1496u^{18} + \dots + 40.8150u - 16.0518 \\ -51.8152u^{19} + 68.7753u^{18} + \dots + 201.898u - 80.6084 \end{pmatrix}$$

(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
$u = -1.47088$ $a = 0.635196$ $b = 1.93439$	5.30775	14.8430
$u = -1.075040 - 0.521861I$ $a = 0.784241 - 0.459457I$ $b = 1.118013 - 0.528908I$	$2.09458 + 0.02571I$	$6.51387 + 0.81904I$
$u = -1.075040 + 0.521861I$ $a = 0.784241 + 0.459457I$ $b = 1.118013 + 0.528908I$	$2.09458 - 0.02571I$	$6.51387 - 0.81904I$
$u = -0.943250 - 0.349364I$ $a = -1.318129 - 0.221518I$ $b = -1.60990 + 0.18001I$	$1.69553 + 3.69576I$	$1.77162 - 1.96947I$
$u = -0.943250 + 0.349364I$ $a = -1.318129 + 0.221518I$ $b = -1.60990 - 0.18001I$	$1.69553 - 3.69576I$	$1.77162 + 1.96947I$
$u = -0.870518 - 0.079940I$ $a = -1.86271 + 3.21921I$ $b = -1.97718 + 2.02548I$	$-1.90449 + 0.21781I$	$-29.5538 - 14.4681I$
$u = -0.870518 + 0.079940I$ $a = -1.86271 - 3.21921I$ $b = -1.97718 - 2.02548I$	$-1.90449 - 0.21781I$	$-29.5538 + 14.4681I$
$u = 0.18394 - 1.47398I$ $a = -0.010162 - 0.193943I$ $b = 0.265936 + 0.099639I$	$-8.22954 + 1.82787I$	$11.49994 - 0.55574I$
$u = 0.18394 + 1.47398I$ $a = -0.010162 + 0.193943I$ $b = 0.265936 - 0.099639I$	$-8.22954 - 1.82787I$	$11.49994 + 0.55574I$
$u = 0.257767 - 0.750032I$ $a = -0.63846 + 1.31360I$ $b = -0.114431 + 0.221367I$	$-1.03432 + 2.65731I$	$-0.50510 - 5.09226I$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.257767 + 0.750032I$ $a = -0.63846 - 1.31360I$ $b = -0.114431 - 0.221367I$	$-1.03432 - 2.65731I$	$-0.50510 + 5.09226I$
$u = 0.327450 - 0.357934I$ $a = 1.324808 - 0.382640I$ $b = -1.071918 + 0.209283I$	$-2.35457 - 2.06275I$	$-0.52131 + 2.65726I$
$u = 0.327450 + 0.357934I$ $a = 1.324808 + 0.382640I$ $b = -1.071918 - 0.209283I$	$-2.35457 + 2.06275I$	$-0.52131 - 2.65726I$
$u = 0.665798 - 0.019209I$ $a = 0.454713 + 1.236375I$ $b = 2.27505 - 0.00824I$	$-6.31669 - 6.08976I$	$-1.60733 + 2.73564I$
$u = 0.665798 + 0.019209I$ $a = 0.454713 - 1.236375I$ $b = 2.27505 + 0.00824I$	$-6.31669 + 6.08976I$	$-1.60733 - 2.73564I$
$u = 1.139757 - 0.511268I$ $a = -1.311956 + 0.412109I$ $b = -2.22421 + 0.51632I$	$1.55717 - 7.34738I$	$4.09988 + 9.89194I$
$u = 1.139757 + 0.511268I$ $a = -1.311956 - 0.412109I$ $b = -2.22421 - 0.51632I$	$1.55717 + 7.34738I$	$4.09988 - 9.89194I$
$u = 1.283222 - 0.360701I$ $a = 0.459491 - 0.417035I$ $b = 1.62844 - 0.07437I$	$-3.05795 - 7.46965I$	$-3.02238 + 6.16209I$
$u = 1.283222 + 0.360701I$ $a = 0.459491 + 0.417035I$ $b = 1.62844 + 0.07437I$	$-3.05795 + 7.46965I$	$-3.02238 - 6.16209I$
$u = 1.53262$ $a = -0.398865$ $b = -2.51400$	$3.47385$	$-31.1937$

$$\text{II. } I_2^u = \langle u^{96} - u^{95} + \dots - 60u - 101, -1.15 \times 10^{224}u^{95} + 2.86 \times 10^{224}u^{94} + \dots + 6.62 \times 10^{223}b + 4.01 \times 10^{225}, -1.39 \times 10^{226}u^{95} + 2.38 \times 10^{226}u^{94} + \dots + 6.69 \times 10^{225}a + 1.91 \times 10^{228} \rangle$$

(i) Arc colorings

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

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

$$a_8 = \begin{pmatrix} u \\ u \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2.08176u^{95} - 3.55469u^{94} + \dots + 197.968u - 285.411 \\ 1.73985u^{95} - 4.31837u^{94} + \dots - 117.502u - 60.5286 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.24799u^{95} - 2.67874u^{94} + \dots - 28.9106u - 84.7160 \\ -4.35997u^{95} + 7.46261u^{94} + \dots - 277.555u + 544.819 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.08176u^{95} - 3.55469u^{94} + \dots + 197.968u - 285.411 \\ 0.674710u^{95} - 2.45760u^{94} + \dots - 239.384u + 88.2378 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 3.03786u^{95} - 5.50866u^{94} + \dots + 217.871u - 372.359 \\ 0.857210u^{95} - 3.31524u^{94} + \dots - 298.155u + 120.832 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.716645u^{95} - 1.23894u^{94} + \dots + 46.6136u - 88.8107 \\ 7.19143u^{95} - 13.3353u^{94} + \dots + 253.129u - 765.315 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -6.99182u^{95} + 12.9299u^{94} + \dots - 418.566u + 809.348 \\ -7.61234u^{95} + 15.3132u^{94} + \dots - 158.318u + 705.173 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.140812u^{95} - 0.0828640u^{94} + \dots + 44.4501u - 43.1144 \\ 5.40993u^{95} - 8.61300u^{94} + \dots + 626.190u - 818.869 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.140812u^{95} - 0.0828640u^{94} + \dots + 44.4501u - 43.1144 \\ 5.40993u^{95} - 8.61300u^{94} + \dots + 626.190u - 818.869 \end{pmatrix}$$

(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
$u = -1.49653$ $a = 0.431098$ $b = 2.70299$	3.59541	35.1986
$u = -1.34315 - 0.63648I$ $a = -0.758774 - 0.155327I$ $b = -1.87449 - 0.56731I$	$-4.94765 + 5.11148I$	$-4.23566 - 4.48140I$
$u = -1.34315 + 0.63648I$ $a = -0.758774 + 0.155327I$ $b = -1.87449 + 0.56731I$	$-4.94765 - 5.11148I$	$-4.23566 + 4.48140I$
$u = -1.334156 - 0.459106I$ $a = -0.447884 + 0.060286I$ $b = -0.723423 + 0.523916I$	$1.96286 - 1.30339I$	$3.03121 + 5.70430I$
$u = -1.334156 + 0.459106I$ $a = -0.447884 - 0.060286I$ $b = -0.723423 - 0.523916I$	$1.96286 + 1.30339I$	$3.03121 - 5.70430I$
$u = -1.291905 - 0.457802I$ $a = 0.542089 + 0.004792I$ $b = 1.259772 - 0.411822I$	$4.50509 + 2.67262I$	$7.25375 - 3.37476I$
$u = -1.291905 + 0.457802I$ $a = 0.542089 - 0.004792I$ $b = 1.259772 + 0.411822I$	$4.50509 - 2.67262I$	$7.25375 + 3.37476I$
$u = -1.29000 - 0.66251I$ $a = 1.031645 + 0.088942I$ $b = 2.14241 + 0.58657I$	$0.39090 + 11.66793I$	$0.87433 - 8.04211I$
$u = -1.29000 + 0.66251I$ $a = 1.031645 - 0.088942I$ $b = 2.14241 - 0.58657I$	$0.39090 - 11.66793I$	$0.87433 + 8.04211I$
$u = -1.28105 - 0.63592I$ $a = -1.146073 - 0.209540I$ $b = -2.25361 - 0.70063I$	$-3.9614 + 17.9979I$	$-0.82370 - 9.34783I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.28105 + 0.63592I$ $a = -1.146073 + 0.209540I$ $b = -2.25361 + 0.70063I$	$-3.9614 - 17.9979I$	$-0.82370 + 9.34783I$
$u = -1.239563 - 0.325165I$ $a = -0.532771 - 0.184694I$ $b = -2.03587 + 0.99913I$	$-2.24244 + 7.86585I$	$5.52086 - 10.32768I$
$u = -1.239563 + 0.325165I$ $a = -0.532771 + 0.184694I$ $b = -2.03587 - 0.99913I$	$-2.24244 - 7.86585I$	$5.52086 + 10.32768I$
$u = -1.138974 - 0.354041I$ $a = -1.065377 - 0.068325I$ $b = -1.60225 - 0.16597I$	$2.56439 + 1.51823I$	$3.61769 - 1.58173I$
$u = -1.138974 + 0.354041I$ $a = -1.065377 + 0.068325I$ $b = -1.60225 + 0.16597I$	$2.56439 - 1.51823I$	$3.61769 + 1.58173I$
$u = -1.117503 - 0.389905I$ $a = -1.348187 + 0.122688I$ $b = -2.01274 + 0.01928I$	$2.49221 + 1.38820I$	$5.62685 - 2.45875I$
$u = -1.117503 + 0.389905I$ $a = -1.348187 - 0.122688I$ $b = -2.01274 - 0.01928I$	$2.49221 - 1.38820I$	$5.62685 + 2.45875I$
$u = -1.098548 - 0.204380I$ $a = 1.17929 + 1.10757I$ $b = 1.39783 + 1.55797I$	$-0.605747 + 0.447290I$	$-3.63388 + 1.74254I$
$u = -1.098548 + 0.204380I$ $a = 1.17929 - 1.10757I$ $b = 1.39783 - 1.55797I$	$-0.605747 - 0.447290I$	$-3.63388 - 1.74254I$
$u = -1.098359 - 0.373633I$ $a = 0.655179 - 0.707878I$ $b = 1.19845 - 0.80685I$	$0.829229 + 0.160481I$	$0.241525 + 0.067951I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.098359 + 0.373633I$ $a = 0.655179 + 0.707878I$ $b = 1.19845 + 0.80685I$	$0.829229 - 0.160481I$	$0.241525 - 0.067951I$
$u = -1.012860 - 0.386691I$ $a = 1.70841 + 0.29183I$ $b = 2.43790 + 0.52929I$	$1.89831 + 4.86756I$	$3.25012 - 8.87629I$
$u = -1.012860 + 0.386691I$ $a = 1.70841 - 0.29183I$ $b = 2.43790 - 0.52929I$	$1.89831 - 4.86756I$	$3.25012 + 8.87629I$
$u = -0.920510 - 0.063243I$ $a = -2.80396 + 3.68950I$ $b = -2.91244 + 2.54911I$	$-1.83794 + 0.18273I$	$75.5057 + 43.5795I$
$u = -0.920510 + 0.063243I$ $a = -2.80396 - 3.68950I$ $b = -2.91244 - 2.54911I$	$-1.83794 - 0.18273I$	$75.5057 - 43.5795I$
$u = -0.906398 - 0.330398I$ $a = -0.225881 - 1.242691I$ $b = -0.687111 + 0.490206I$	$-5.75032 - 4.28762I$	$-3.34541 + 1.61445I$
$u = -0.906398 + 0.330398I$ $a = -0.225881 + 1.242691I$ $b = -0.687111 - 0.490206I$	$-5.75032 + 4.28762I$	$-3.34541 - 1.61445I$
$u = -0.903876 - 0.214263I$ $a = 1.025043 - 0.009649I$ $b = 2.21555 + 1.20717I$	$-1.17974 + 2.82902I$	$5.61860 - 4.60262I$
$u = -0.903876 + 0.214263I$ $a = 1.025043 + 0.009649I$ $b = 2.21555 - 1.20717I$	$-1.17974 - 2.82902I$	$5.61860 + 4.60262I$
$u = -0.854277 - 0.227234I$ $a = -0.47347 + 1.42707I$ $b = -0.512405 - 0.166876I$	$-1.28698 - 0.73115I$	$4.34059 + 0.04582I$



Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.854277 + 0.227234I$ $a = -0.47347 - 1.42707I$ $b = -0.512405 + 0.166876I$	$-1.28698 + 0.73115I$	$4.34059 - 0.04582I$
$u = -0.806144 - 0.214912I$ $a = -0.479634 - 0.510777I$ $b = -2.74269 - 1.13146I$	$-6.28639 + 6.86236I$	$-2.29076 - 11.45834I$
$u = -0.806144 + 0.214912I$ $a = -0.479634 + 0.510777I$ $b = -2.74269 + 1.13146I$	$-6.28639 - 6.86236I$	$-2.29076 + 11.45834I$
$u = -0.484663 - 0.344993I$ $a = -0.15641 + 2.03650I$ $b = -0.272220 + 0.665820I$	$0.39402 - 1.56177I$	$2.46525 + 2.62036I$
$u = -0.484663 + 0.344993I$ $a = -0.15641 - 2.03650I$ $b = -0.272220 - 0.665820I$	$0.39402 + 1.56177I$	$2.46525 - 2.62036I$
$u = -0.482036 - 0.315937I$ $a = -0.787837 - 0.903836I$ $b = 0.112088 - 0.507228I$	$0.406346 + 1.198921I$	$3.01437 - 6.03071I$
$u = -0.482036 + 0.315937I$ $a = -0.787837 + 0.903836I$ $b = 0.112088 + 0.507228I$	$0.406346 - 1.198921I$	$3.01437 + 6.03071I$
$u = -0.311941 - 1.209741I$ $a = 0.286940 + 0.820047I$ $b = -0.291640 - 0.190934I$	$-2.77482 - 5.11934I$	$-2.01941 + 6.39373I$
$u = -0.311941 + 1.209741I$ $a = 0.286940 - 0.820047I$ $b = -0.291640 + 0.190934I$	$-2.77482 + 5.11934I$	$-2.01941 - 6.39373I$
$u = -0.259269 - 1.131543I$ $a = -0.493881 - 0.981727I$ $b = 0.227318 + 0.035334I$	$-7.19197 - 11.75554I$	$-3.30340 + 7.13362I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.259269 + 1.131543I$ $a = -0.493881 + 0.981727I$ $b = 0.227318 - 0.035334I$	$-7.19197 + 11.75554I$	$-3.30340 - 7.13362I$
$u = -0.196440 - 1.339830I$ $a = -0.291523 - 0.379531I$ $b = 0.055324 + 0.273333I$	$-8.68039 + 1.55353I$	$-6.49878 + 5.32572I$
$u = -0.196440 + 1.339830I$ $a = -0.291523 + 0.379531I$ $b = 0.055324 - 0.273333I$	$-8.68039 - 1.55353I$	$-6.49878 - 5.32572I$
$u = -0.062314 - 0.872583I$ $a = -0.697958 + 0.722073I$ $b = 0.218603 - 0.035908I$	$0.67930 + 2.39127I$	$4.44117 - 2.67981I$
$u = -0.062314 + 0.872583I$ $a = -0.697958 - 0.722073I$ $b = 0.218603 + 0.035908I$	$0.67930 - 2.39127I$	$4.44117 + 2.67981I$
$u = -0.022589 - 0.476147I$ $a = -0.15988 - 1.75066I$ $b = 0.389940 - 0.426704I$	$-0.40537 + 1.96180I$	$0.24306 - 3.42560I$
$u = -0.022589 + 0.476147I$ $a = -0.15988 + 1.75066I$ $b = 0.389940 + 0.426704I$	$-0.40537 - 1.96180I$	$0.24306 + 3.42560I$
$u = -0.008073 - 0.918618I$ $a = 0.845657 - 0.866145I$ $b = -0.213671 - 0.217741I$	$-2.07883 + 6.40543I$	$-2.26835 - 7.03904I$
$u = -0.008073 + 0.918618I$ $a = 0.845657 + 0.866145I$ $b = -0.213671 + 0.217741I$	$-2.07883 - 6.40543I$	$-2.26835 + 7.03904I$
$u = 0.174730 - 0.720527I$ $a = -0.92719 + 1.47258I$ $b = -0.445127 + 0.106295I$	$-2.85619 + 3.24531I$	$-3.84884 - 3.66553I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.174730 + 0.720527I$ $a = -0.92719 - 1.47258I$ $b = -0.445127 - 0.106295I$	$-2.85619 - 3.24531I$	$-3.84884 + 3.66553I$
$u = 0.190796 - 0.503974I$ $a = 1.62713 - 1.21932I$ $b = 0.278154 + 0.391785I$	$-3.96883 + 1.64207I$	$-6.44304 - 1.04943I$
$u = 0.190796 + 0.503974I$ $a = 1.62713 + 1.21932I$ $b = 0.278154 - 0.391785I$	$-3.96883 - 1.64207I$	$-6.44304 + 1.04943I$
$u = 0.242468 - 0.772214I$ $a = 0.478051 - 1.047873I$ $b = 0.182437 - 0.334275I$	$-1.43609 + 1.70978I$	$-3.75375 + 0.93348I$
$u = 0.242468 + 0.772214I$ $a = 0.478051 + 1.047873I$ $b = 0.182437 + 0.334275I$	$-1.43609 - 1.70978I$	$-3.75375 - 0.93348I$
$u = 0.36725 - 1.37766I$ $a = -0.219632 + 0.242538I$ $b = 0.114121 + 0.239144I$	$-8.49441 + 1.95871I$	$-13.5926 - 11.4066I$
$u = 0.36725 + 1.37766I$ $a = -0.219632 - 0.242538I$ $b = 0.114121 - 0.239144I$	$-8.49441 - 1.95871I$	$-13.5926 + 11.4066I$
$u = 0.370926 - 0.648701I$ $a = -0.814789 - 1.056203I$ $b = -1.303848 + 0.413511I$	$-6.72567 - 4.75540I$	$-4.17528 + 5.46441I$
$u = 0.370926 + 0.648701I$ $a = -0.814789 + 1.056203I$ $b = -1.303848 - 0.413511I$	$-6.72567 + 4.75540I$	$-4.17528 - 5.46441I$
$u = 0.551904 - 0.378935I$ $a = -1.98161 + 0.25175I$ $b = -1.69107 + 1.02951I$	$-7.44389 + 5.44199I$	$-5.81540 - 0.88794I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.551904 + 0.378935I$ $a = -1.98161 - 0.25175I$ $b = -1.69107 - 1.02951I$	$-7.44389 - 5.44199I$	$-5.81540 + 0.88794I$
$u = 0.572749 - 0.484328I$ $a = 1.077036 - 0.000422I$ $b = 1.30179 - 0.83734I$	$-3.40821 + 0.60971I$	$-2.59694 + 1.66037I$
$u = 0.572749 + 0.484328I$ $a = 1.077036 + 0.000422I$ $b = 1.30179 + 0.83734I$	$-3.40821 - 0.60971I$	$-2.59694 - 1.66037I$
$u = 0.740637 - 0.481266I$ $a = -0.663803 + 0.527341I$ $b = 0.251382 - 0.818211I$	$-5.35019 - 1.42280I$	$-5.31734 + 3.30567I$
$u = 0.740637 + 0.481266I$ $a = -0.663803 - 0.527341I$ $b = 0.251382 + 0.818211I$	$-5.35019 + 1.42280I$	$-5.31734 - 3.30567I$
$u = 0.783146 - 0.511862I$ $a = 0.290897 + 0.060665I$ $b = -0.823598 + 1.035293I$	$-5.22833 - 2.70073I$	$-5.08810 + 3.53024I$
$u = 0.783146 + 0.511862I$ $a = 0.290897 - 0.060665I$ $b = -0.823598 - 1.035293I$	$-5.22833 + 2.70073I$	$-5.08810 - 3.53024I$
$u = 0.902669 - 0.787073I$ $a = -0.648694 - 0.664216I$ $b = -0.861874 - 0.578130I$	$-0.0489695 - 0.0733989I$	$2.02771 - 0.16681I$
$u = 0.902669 + 0.787073I$ $a = -0.648694 + 0.664216I$ $b = -0.861874 + 0.578130I$	$-0.0489695 + 0.0733989I$	$2.02771 + 0.16681I$
$u = 0.916587 - 0.428791I$ $a = 0.259816 - 1.314752I$ $b = -0.293836 - 0.416638I$	$-2.44931 - 4.41382I$	$-0.26841 + 6.59895I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.916587 + 0.428791I$ $a = 0.259816 + 1.314752I$ $b = -0.293836 + 0.416638I$	$-2.44931 + 4.41382I$	$-0.26841 - 6.59895I$
$u = 0.961050 - 0.411937I$ $a = -0.08184 + 1.77255I$ $b = 0.528220 + 1.050803I$	$-6.22408 - 8.95276I$	$-3.24646 + 8.95795I$
$u = 0.961050 + 0.411937I$ $a = -0.08184 - 1.77255I$ $b = 0.528220 - 1.050803I$	$-6.22408 + 8.95276I$	$-3.24646 - 8.95795I$
$u = 0.966071 - 0.600501I$ $a = 0.400487 + 0.858100I$ $b = 1.253814 - 0.098472I$	$-5.14389 - 0.01776I$	$-5.29391 - 0.13930I$
$u = 0.966071 + 0.600501I$ $a = 0.400487 - 0.858100I$ $b = 1.253814 + 0.098472I$	$-5.14389 + 0.01776I$	$-5.29391 + 0.13930I$
$u = 1.086654 - 0.227251I$ $a = 0.815535 - 0.372245I$ $b = 1.51093 + 0.67769I$	$2.50058 - 4.48584I$	$8.03748 + 8.13430I$
$u = 1.086654 + 0.227251I$ $a = 0.815535 + 0.372245I$ $b = 1.51093 - 0.67769I$	$2.50058 + 4.48584I$	$8.03748 - 8.13430I$
$u = 1.091271 - 0.675322I$ $a = 1.018456 + 0.114459I$ $b = 1.380440 + 0.036127I$	$0.74726 - 5.71599I$	$1.75808 + 5.73314I$
$u = 1.091271 + 0.675322I$ $a = 1.018456 - 0.114459I$ $b = 1.380440 - 0.036127I$	$0.74726 + 5.71599I$	$1.75808 - 5.73314I$
$u = 1.137249 - 0.354539I$ $a = 0.688823 - 0.326882I$ $b = 1.97294 - 0.72250I$	$-1.31348 - 5.11994I$	$-0.88249 + 6.81553I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.137249 + 0.354539I$ $a = 0.688823 + 0.326882I$ $b = 1.97294 + 0.72250I$	$-1.31348 + 5.11994I$	$-0.88249 - 6.81553I$
$u = 1.159410 - 0.498809I$ $a = -1.198746 + 0.524361I$ $b = -2.30687 + 0.48646I$	$-0.00337 - 7.83254I$	$-0.00246 + 7.65524I$
$u = 1.159410 + 0.498809I$ $a = -1.198746 - 0.524361I$ $b = -2.30687 - 0.48646I$	$-0.00337 + 7.83254I$	$-0.00246 - 7.65524I$
$u = 1.161283 - 0.524991I$ $a = 1.201881 - 0.326272I$ $b = 1.97611 - 0.33761I$	$1.29886 - 6.55523I$	$0.36651 + 1.41241I$
$u = 1.161283 + 0.524991I$ $a = 1.201881 + 0.326272I$ $b = 1.97611 + 0.33761I$	$1.29886 + 6.55523I$	$0.36651 - 1.41241I$
$u = 1.217488 - 0.082560I$ $a = -0.661628 + 0.057949I$ $b = -1.73589 - 0.75121I$	$5.03978 + 1.15243I$	$11.16857 - 5.29229I$
$u = 1.217488 + 0.082560I$ $a = -0.661628 - 0.057949I$ $b = -1.73589 + 0.75121I$	$5.03978 - 1.15243I$	$11.16857 + 5.29229I$
$u = 1.247107 - 0.461576I$ $a = -1.131769 + 0.187384I$ $b = -2.14155 + 0.67845I$	$4.54881 - 7.06507I$	$6.29646 + 4.83795I$
$u = 1.247107 + 0.461576I$ $a = -1.131769 - 0.187384I$ $b = -2.14155 - 0.67845I$	$4.54881 + 7.06507I$	$6.29646 - 4.83795I$
$u = 1.261936 - 0.481638I$ $a = 1.265621 - 0.319174I$ $b = 2.14434 - 0.85116I$	$1.76805 - 11.34404I$	$1.36910 + 9.29137I$

Solution to $I_2^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.261936 + 0.481638I$ $a = 1.265621 + 0.319174I$ $b = 2.14434 + 0.85116I$	$1.76805 + 11.34404I$	$1.36910 - 9.29137I$
$u = 1.29382 - 0.66144I$ $a = -0.754481 + 0.329603I$ $b = -1.139359 + 0.676931I$	$-5.25019 - 8.77138I$	$-4.46840 + 7.75224I$
$u = 1.29382 + 0.66144I$ $a = -0.754481 - 0.329603I$ $b = -1.139359 - 0.676931I$	$-5.25019 + 8.77138I$	$-4.46840 - 7.75224I$
$u = 1.50709 - 0.12241I$ $a = 0.578362 + 0.132329I$ $b = 1.37970 + 0.54580I$	$-0.64154 + 6.80371I$	$2.89098 - 5.94229I$
$u = 1.50709 + 0.12241I$ $a = 0.578362 - 0.132329I$ $b = 1.37970 - 0.54580I$	$-0.64154 - 6.80371I$	$2.89098 + 5.94229I$
$u = 1.61712$ $a = -0.565490$ $b = -1.80695$	$4.87233$	$-3.69304$

### III. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1$	$(u^{20} - 2u^{19} + \dots - 2u + 1)(u^{96} + u^{95} + \dots - 44434u + 5239)$
$c_2$	$(u^{20} + u^{19} + \dots + 2u - 1)(u^{96} + 32u^{94} + \dots + 1260u - 193)$
$c_3$	$(u^{20} + 2u^{19} + \dots - 6u - 1)(u^{96} + 9u^{95} + \dots - 371u - 46)$
$c_4$	$(u^{20} - 2u^{19} + \dots + 4u - 1)(u^{96} + u^{95} + \dots + 60u - 101)$
$c_5$	$(u^{20} + 2u^{19} + \dots + 2u + 1)(u^{96} + u^{95} + \dots - 44434u + 5239)$
$c_6$	$(u^{20} - 7u^{19} + \dots + 5u + 1)(u^{96} + 4u^{95} + \dots + 45u + 1)$
$c_7$	$(u^{20} + 2u^{19} + \dots - 4u - 1)(u^{96} + u^{95} + \dots + 60u - 101)$
$c_8$	$(u^{20} + 3u^{19} + \dots + u + 1)(u^{96} + 10u^{95} + \dots + 3240u + 368)$
$c_9$	$(u^{20} - u^{19} + \dots - 2u - 1)(u^{96} + 32u^{94} + \dots + 1260u - 193)$
$c_{10}$	$(u^{20} - u^{19} + \dots - 3u - 1)(u^{96} + 2u^{95} + \dots - 159407u - 226723)$
$c_{11}$	$(u^{20} - 3u^{19} + \dots + 6u + 1)(u^{96} + 6u^{95} + \dots + 14458u + 1789)$



#### IV. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1$	$(y^{20} - 14y^{19} + \dots + 40y^2 + 1)$ $(y^{96} - 73y^{95} + \dots + 553636226y + 27447121)$
$c_2$	$(y^{20} + 11y^{19} + \dots + 8y + 1)(y^{96} + 64y^{95} + \dots + 1764038y + 37249)$
$c_3$	$(y^{20} - 10y^{19} + \dots - 2y + 1)(y^{96} - y^{95} + \dots + 405435y + 2116)$
$c_4, c_7$	$(y^{20} - 10y^{19} + \dots - 8y + 1)(y^{96} - 53y^{95} + \dots - 127426y + 10201)$
$c_5$	$(y^{20} - 14y^{19} + \dots + 40y^2 + 1)$ $(y^{96} - 73y^{95} + \dots + 553636226y + 27447121)$
$c_6$	$(y^{20} - 5y^{19} + \dots - 9y + 1)(y^{96} - 4y^{95} + \dots - 559y + 1)$
$c_8$	$(y^{20} - 19y^{19} + \dots - 15y + 1)$ $(y^{96} - 10y^{95} + \dots + 3636544y + 135424)$
$c_9$	$(y^{20} + 11y^{19} + \dots + 8y + 1)(y^{96} + 64y^{95} + \dots + 1764038y + 37249)$
$c_{10}$	$(y^{20} - y^{19} + \dots - 19y + 1)$ $(y^{96} - 36y^{95} + \dots - 374201254849y + 51403318729)$
$c_{11}$	$(y^{20} + 3y^{19} + \dots - 24y + 1)$ $(y^{96} - 16y^{95} + \dots - 110849866y + 3200521)$