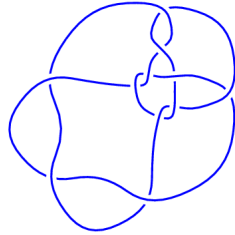
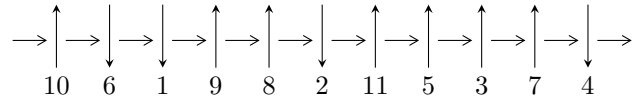


11a₃₃₁ (K11a₃₃₁)

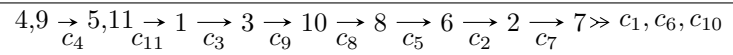


1

Arc Sequences



Solving Sequence



Representation Ideals

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

$$I_1^u = \langle u^{17} + 2u^{16} + \dots + 4u + 1, u^{14} + 2u^{13} + \dots + a + 3, u^{15} + 3u^{14} + \dots + b + 2 \rangle$$

$$I_2^u = \langle u^{74} + 3u^{73} + \dots + 209u + 47,$$

$$8.54894 \times 10^{95} u^{73} + 1.55407 \times 10^{96} u^{72} + \dots + 2.00526 \times 10^{96} b - 1.27828 \times 10^{97},$$

$$1.26968 \times 10^{97} u^{73} + 2.82020 \times 10^{97} u^{72} + \dots + 9.42470 \times 10^{97} a - 2.30720 \times 10^{99} \rangle$$

There are 2 irreducible components with 91 representations.

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

$$I_1^u = \langle u^{17} + 2u^{16} + \dots + 4u + 1, u^{14} + 2u^{13} + \dots + a + 3, u^{15} + 3u^{14} + \dots + b + 2 \rangle$$

I.

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -u^{14} - 2u^{13} + \dots - 4u - 3 \\ -u^{15} - 3u^{14} + \dots - 6u - 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u^{15} + 2u^{14} + \dots + 2u - 1 \\ -u^{15} - 3u^{14} + \dots - 6u - 2 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -2u^{16} - 4u^{15} + \dots - 12u^2 - u \\ 2u^{15} + 3u^{14} + \dots + 6u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^{16} - 3u^{15} + \dots - 7u^2 - u \\ 3u^{15} + 6u^{14} + \dots + 14u + 3 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -2u^{16} - 3u^{15} + \dots - 10u^2 + 3u \\ u^{15} + u^{14} + \dots + 6u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{16} + 3u^{15} + \dots + 8u + 4 \\ u^{16} + u^{15} + \dots + 4u + 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} u^{16} + 3u^{15} + \dots + 8u + 4 \\ u^{16} + u^{15} + \dots + 4u + 1 \end{pmatrix}$$

(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 |
|--|---------------------------------------|-------------------------|
| $u = -0.917169 - 0.197212I$ $a = 0.010044 + 0.620893I$ $b = -0.325330 - 0.891594I$ | $1.91049 - 1.40877I$ | $1.99755 + 3.08552I$ |
| $u = -0.917169 + 0.197212I$ $a = 0.010044 - 0.620893I$ $b = -0.325330 + 0.891594I$ | $1.91049 + 1.40877I$ | $1.99755 - 3.08552I$ |
| $u = -0.36245 - 1.38049I$ $a = -1.309532 + 0.036646I$ $b = -0.467784 + 1.122315I$ | $-2.18873 + 6.08260I$ | $3.68269 - 6.06370I$ |
| $u = -0.36245 + 1.38049I$ $a = -1.309532 - 0.036646I$ $b = -0.467784 - 1.122315I$ | $-2.18873 - 6.08260I$ | $3.68269 + 6.06370I$ |
| $u = -0.257452$ $a = -2.53872$ $b = -0.935779$ | -0.126778 | -3.70928 |
| $u = -0.17262 - 1.59957I$ $a = -0.156574 - 0.188805I$ $b = -0.175891 - 0.545807I$ | $-4.71707 + 2.60778I$ | $-2.21051 + 0.39909I$ |
| $u = -0.17262 + 1.59957I$ $a = -0.156574 + 0.188805I$ $b = -0.175891 + 0.545807I$ | $-4.71707 - 2.60778I$ | $-2.21051 - 0.39909I$ |
| $u = -0.124683 - 1.379790I$ $a = -1.47208 - 0.21265I$ $b = -1.044605 - 0.361468I$ | $-4.85490 + 1.43958I$ | $-1.090547 + 0.048277I$ |
| $u = -0.124683 + 1.379790I$ $a = -1.47208 + 0.21265I$ $b = -1.044605 + 0.361468I$ | $-4.85490 - 1.43958I$ | $-1.090547 - 0.048277I$ |
| $u = 0.035271 - 1.235605I$ $a = 0.895263 - 0.171951I$ $b = 0.19425 - 1.50294I$ | $5.20161 - 1.70001I$ | $5.37273 + 2.73061I$ |

| Solution to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = 0.035271 + 1.235605I$ $a = 0.895263 + 0.171951I$ $b = 0.19425 + 1.50294I$ | $5.20161 + 1.70001I$ | $5.37273 - 2.73061I$ |
| $u = 0.089248 - 0.610949I$ $a = -0.55733 + 1.73458I$ $b = 0.101471 + 1.352374I$ | $7.59288 + 1.25507I$ | $8.41084 - 0.24395I$ |
| $u = 0.089248 + 0.610949I$ $a = -0.55733 - 1.73458I$ $b = 0.101471 - 1.352374I$ | $7.59288 - 1.25507I$ | $8.41084 + 0.24395I$ |
| $u = 0.171164 - 1.296501I$ $a = 2.21486 + 0.76044I$ $b = 0.459524 + 0.755278I$ | $2.00726 - 4.91579I$ | $2.45525 + 6.27876I$ |
| $u = 0.171164 + 1.296501I$ $a = 2.21486 - 0.76044I$ $b = 0.459524 - 0.755278I$ | $2.00726 + 4.91579I$ | $2.45525 - 6.27876I$ |
| $u = 0.409969 - 0.519303I$ $a = -0.85529 + 2.07219I$ $b = 0.226258 - 0.744134I$ | $4.98146 + 2.80089I$ | $12.23664 - 2.91381I$ |
| $u = 0.409969 + 0.519303I$ $a = -0.85529 - 2.07219I$ $b = 0.226258 + 0.744134I$ | $4.98146 - 2.80089I$ | $12.23664 + 2.91381I$ |

$$\text{II. } I_2^u = \langle u^{74} + 3u^{73} + \dots + 209u + 47, 8.55 \times 10^{95}u^{73} + 1.55 \times 10^{96}u^{72} + \dots + 2.01 \times 10^{96}b - 1.28 \times 10^{97}, 1.27 \times 10^{97}u^{73} + 2.82 \times 10^{97}u^{72} + \dots + 9.42 \times 10^{97}a - 2.31 \times 10^{99} \rangle$$

(i) Arc colorings

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

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

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

$$a_{11} = \begin{pmatrix} -0.134719u^{73} - 0.299235u^{72} + \dots + 54.9754u + 24.4804 \\ -0.426327u^{73} - 0.774999u^{72} + \dots + 28.8321u + 6.37465 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.291608u^{73} + 0.475764u^{72} + \dots + 26.1433u + 18.1057 \\ -0.426327u^{73} - 0.774999u^{72} + \dots + 28.8321u + 6.37465 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.571268u^{73} + 1.64222u^{72} + \dots + 103.904u + 29.6284 \\ -0.233836u^{73} - 0.733389u^{72} + \dots - 35.5006u - 10.6620 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.160882u^{73} + 0.784015u^{72} + \dots + 215.233u + 63.4002 \\ -0.0885971u^{73} - 1.07134u^{72} + \dots - 178.043u - 55.1254 \end{pmatrix}$$

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

$$a_6 = \begin{pmatrix} u^2 + 1 \\ -u^4 - 2u^2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 0.756401u^{73} + 2.23671u^{72} + \dots + 147.047u + 42.9701 \\ -0.261940u^{73} - 0.983478u^{72} + \dots - 64.0355u - 19.0821 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.303078u^{73} + 0.404458u^{72} + \dots - 35.9491u - 18.0658 \\ -0.240564u^{73} - 0.355060u^{72} + \dots + 2.22918u - 2.45974 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.303078u^{73} + 0.404458u^{72} + \dots - 35.9491u - 18.0658 \\ -0.240564u^{73} - 0.355060u^{72} + \dots + 2.22918u - 2.45974 \end{pmatrix}$$

(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 |
|-----------------------------|---------------------------------------|-----------------------|
| $u = -0.977426 - 0.331531I$ | | |
| $a = 0.690016 + 0.482829I$ | $9.2153 + 11.1163I$ | $8.76412 - 7.33881I$ |
| $b = 0.495934 - 1.306619I$ | | |
| $u = -0.977426 + 0.331531I$ | | |
| $a = 0.690016 - 0.482829I$ | $9.2153 - 11.1163I$ | $8.76412 + 7.33881I$ |
| $b = 0.495934 + 1.306619I$ | | |
| $u = -0.943528 - 0.160031I$ | | |
| $a = -0.191643 + 0.620823I$ | $3.11842 - 2.09291I$ | $6.72185 + 3.93353I$ |
| $b = -0.498139 - 0.748835I$ | | |
| $u = -0.943528 + 0.160031I$ | | |
| $a = -0.191643 - 0.620823I$ | $3.11842 + 2.09291I$ | $6.72185 - 3.93353I$ |
| $b = -0.498139 + 0.748835I$ | | |
| $u = -0.781242 - 1.028165I$ | | |
| $a = -0.246443 + 0.341740I$ | $7.24129 - 5.12075I$ | $7.62204 + 4.88636I$ |
| $b = 0.342776 + 1.173761I$ | | |
| $u = -0.781242 + 1.028165I$ | | |
| $a = -0.246443 - 0.341740I$ | $7.24129 + 5.12075I$ | $7.62204 - 4.88636I$ |
| $b = 0.342776 - 1.173761I$ | | |
| $u = -0.672302 - 0.275487I$ | | |
| $a = 0.531259 - 0.256671I$ | $5.09446 + 5.88932I$ | $7.14918 - 5.98042I$ |
| $b = 0.994473 - 0.038479I$ | | |
| $u = -0.672302 + 0.275487I$ | | |
| $a = 0.531259 + 0.256671I$ | $5.09446 - 5.88932I$ | $7.14918 + 5.98042I$ |
| $b = 0.994473 + 0.038479I$ | | |
| $u = -0.605325 - 0.154014I$ | | |
| $a = 1.238580 + 0.359049I$ | $9.24632 - 0.28330I$ | $12.69819 - 0.63805I$ |
| $b = 0.50294 - 1.38892I$ | | |
| $u = -0.605325 + 0.154014I$ | | |
| $a = 1.238580 - 0.359049I$ | $9.24632 + 0.28330I$ | $12.69819 + 0.63805I$ |
| $b = 0.50294 + 1.38892I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|----------------------|
| $u = -0.546934 - 0.540048I$ | | |
| $a = 0.00093 + 1.56615I$ | $4.14609 - 2.20221I$ | $4.65992 - 1.32874I$ |
| $b = 0.276972 - 0.159839I$ | | |
| $u = -0.546934 + 0.540048I$ | | |
| $a = 0.00093 - 1.56615I$ | $4.14609 + 2.20221I$ | $4.65992 + 1.32874I$ |
| $b = 0.276972 + 0.159839I$ | | |
| $u = -0.480633 - 0.177328I$ | | |
| $a = -2.93166 - 0.58475I$ | $8.59018 + 2.10885I$ | $14.2741 - 3.7354I$ |
| $b = -0.012937 + 1.270616I$ | | |
| $u = -0.480633 + 0.177328I$ | | |
| $a = -2.93166 + 0.58475I$ | $8.59018 - 2.10885I$ | $14.2741 + 3.7354I$ |
| $b = -0.012937 - 1.270616I$ | | |
| $u = -0.47948 - 1.33348I$ | | |
| $a = -1.365277 - 0.247102I$ | $-0.64736 + 7.35044I$ | $5.10305 - 7.57355I$ |
| $b = -0.600996 + 0.993957I$ | | |
| $u = -0.47948 + 1.33348I$ | | |
| $a = -1.365277 + 0.247102I$ | $-0.64736 - 7.35044I$ | $5.10305 + 7.57355I$ |
| $b = -0.600996 - 0.993957I$ | | |
| $u = -0.463049 - 0.111626I$ | | |
| $a = -0.25991 - 1.81201I$ | $0.80708 + 2.42495I$ | $0.09499 - 4.46298I$ |
| $b = -0.354673 + 1.019577I$ | | |
| $u = -0.463049 + 0.111626I$ | | |
| $a = -0.25991 + 1.81201I$ | $0.80708 - 2.42495I$ | $0.09499 + 4.46298I$ |
| $b = -0.354673 - 1.019577I$ | | |
| $u = -0.38759 - 1.47330I$ | | |
| $a = 1.63427 - 0.31797I$ | $3.4628 + 16.0068I$ | $5.04221 - 8.19831I$ |
| $b = 0.64917 - 1.35397I$ | | |
| $u = -0.38759 + 1.47330I$ | | |
| $a = 1.63427 + 0.31797I$ | $3.4628 - 16.0068I$ | $5.04221 + 8.19831I$ |
| $b = 0.64917 + 1.35397I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = -0.30682 - 1.39309I$ | | |
| $a = -0.745399 - 0.447974I$ | $-1.97320 + 2.18673I$ | $3.47820 - 0.63541I$ |
| $b = -0.778543 - 0.548393I$ | | |
| $u = -0.30682 + 1.39309I$ | | |
| $a = -0.745399 + 0.447974I$ | $-1.97320 - 2.18673I$ | $3.47820 + 0.63541I$ |
| $b = -0.778543 + 0.548393I$ | | |
| $u = -0.26985 - 1.40575I$ | | |
| $a = 1.54639 + 0.48300I$ | $-0.26002 + 9.34220I$ | $2.81694 - 6.21073I$ |
| $b = 1.265840 + 0.184891I$ | | |
| $u = -0.26985 + 1.40575I$ | | |
| $a = 1.54639 - 0.48300I$ | $-0.26002 - 9.34220I$ | $2.81694 + 6.21073I$ |
| $b = 1.265840 - 0.184891I$ | | |
| $u = -0.243787 - 1.360412I$ | | |
| $a = 1.88348 - 0.88508I$ | $4.42124 + 2.83103I$ | $6.55687 - 2.50833I$ |
| $b = 0.755260 - 1.157051I$ | | |
| $u = -0.243787 + 1.360412I$ | | |
| $a = 1.88348 + 0.88508I$ | $4.42124 - 2.83103I$ | $6.55687 + 2.50833I$ |
| $b = 0.755260 + 1.157051I$ | | |
| $u = -0.195271 - 1.386516I$ | | |
| $a = -1.76616 + 1.14049I$ | $3.52909 + 4.64112I$ | $8.65848 - 3.75420I$ |
| $b = -0.143149 + 1.028895I$ | | |
| $u = -0.195271 + 1.386516I$ | | |
| $a = -1.76616 - 1.14049I$ | $3.52909 - 4.64112I$ | $8.65848 + 3.75420I$ |
| $b = -0.143149 - 1.028895I$ | | |
| $u = -0.173008 - 1.356913I$ | | |
| $a = -1.60540 + 0.20914I$ | $-3.89386 + 4.74590I$ | $-0.50055 - 1.92117I$ |
| $b = -0.593612 + 1.233655I$ | | |
| $u = -0.173008 + 1.356913I$ | | |
| $a = -1.60540 - 0.20914I$ | $-3.89386 - 4.74590I$ | $-0.50055 + 1.92117I$ |
| $b = -0.593612 - 1.233655I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = -0.159658 - 1.194763I$ $a = 0.203470 + 1.143180I$ $b = 0.29274 + 1.69325I$ | $6.20327 + 3.01035I$ | $6.64872 - 5.23258I$ |
| $u = -0.159658 + 1.194763I$ $a = 0.203470 - 1.143180I$ $b = 0.29274 - 1.69325I$ | $6.20327 - 3.01035I$ | $6.64872 + 5.23258I$ |
| $u = -0.107310 - 1.251046I$ $a = 0.029146 + 0.203328I$ $b = -0.03954 - 1.50942I$ | $5.33288 - 0.16111I$ | $6.20593 - 0.69767I$ |
| $u = -0.107310 + 1.251046I$ $a = 0.029146 - 0.203328I$ $b = -0.03954 + 1.50942I$ | $5.33288 + 0.16111I$ | $6.20593 + 0.69767I$ |
| $u = -0.077830 - 1.356392I$ $a = 1.062246 - 0.082923I$ $b = 0.343236 - 0.909674I$ | $-2.84114 - 0.89469I$ | $2.07500 + 2.04338I$ |
| $u = -0.077830 + 1.356392I$ $a = 1.062246 + 0.082923I$ $b = 0.343236 + 0.909674I$ | $-2.84114 + 0.89469I$ | $2.07500 - 2.04338I$ |
| $u = -0.040289 - 1.123612I$ $a = 2.28789 + 0.81639I$ $b = 0.755296 + 0.806599I$ | $3.32334 - 3.24254I$ | $5.50031 + 2.79227I$ |
| $u = -0.040289 + 1.123612I$ $a = 2.28789 - 0.81639I$ $b = 0.755296 - 0.806599I$ | $3.32334 + 3.24254I$ | $5.50031 - 2.79227I$ |
| $u = -0.024389 - 0.433644I$ $a = -0.058581 - 0.726996I$ $b = -0.542238 - 0.411060I$ | $-0.93889 - 1.06996I$ | $-3.82834 + 4.75783I$ |
| $u = -0.024389 + 0.433644I$ $a = -0.058581 + 0.726996I$ $b = -0.542238 + 0.411060I$ | $-0.93889 + 1.06996I$ | $-3.82834 - 4.75783I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = -0.00514 - 1.42211I$ | | |
| $a = -1.305782 - 0.526359I$ | $-6.82153 - 0.92955I$ | $-3.87229 + 1.10558I$ |
| $b = -0.964892 - 0.318084I$ | | |
| $u = -0.00514 + 1.42211I$ | | |
| $a = -1.305782 + 0.526359I$ | $-6.82153 + 0.92955I$ | $-3.87229 - 1.10558I$ |
| $b = -0.964892 + 0.318084I$ | | |
| $u = 0.000251 - 1.184520I$ | | |
| $a = -2.08563 + 0.24082I$ | $2.78997 + 3.49775I$ | $5.65348 - 2.30922I$ |
| $b = -0.096365 - 0.840334I$ | | |
| $u = 0.000251 + 1.184520I$ | | |
| $a = -2.08563 - 0.24082I$ | $2.78997 - 3.49775I$ | $5.65348 + 2.30922I$ |
| $b = -0.096365 + 0.840334I$ | | |
| $u = 0.09320 - 1.45012I$ | | |
| $a = 0.937848 - 0.335155I$ | $-3.23957 - 0.97155I$ | $4.31141 - 0.40699I$ |
| $b = 0.570488 - 0.736664I$ | | |
| $u = 0.09320 + 1.45012I$ | | |
| $a = 0.937848 + 0.335155I$ | $-3.23957 + 0.97155I$ | $4.31141 + 0.40699I$ |
| $b = 0.570488 + 0.736664I$ | | |
| $u = 0.13112 - 1.67227I$ | | |
| $a = 0.296405 + 0.685667I$ | $-4.10246 - 2.99543I$ | $7.37968 + 5.01672I$ |
| $b = 0.047190 + 0.821814I$ | | |
| $u = 0.13112 + 1.67227I$ | | |
| $a = 0.296405 - 0.685667I$ | $-4.10246 + 2.99543I$ | $7.37968 - 5.01672I$ |
| $b = 0.047190 - 0.821814I$ | | |
| $u = 0.14497 - 1.48045I$ | | |
| $a = 1.041016 - 0.368774I$ | $-5.30403 - 4.22277I$ | $-1.62857 + 4.78227I$ |
| $b = 0.732906 - 0.027438I$ | | |
| $u = 0.14497 + 1.48045I$ | | |
| $a = 1.041016 + 0.368774I$ | $-5.30403 + 4.22277I$ | $-1.62857 - 4.78227I$ |
| $b = 0.732906 + 0.027438I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|----------------------|
| $u = 0.162659 - 1.334778I$ $a = -1.92025 + 0.62075I$ $b = -1.40639 + 0.48404I$ | $-4.07205 - 2.16735I$ | $5.81890 + 4.57415I$ |
| $u = 0.162659 + 1.334778I$ $a = -1.92025 - 0.62075I$ $b = -1.40639 - 0.48404I$ | $-4.07205 + 2.16735I$ | $5.81890 - 4.57415I$ |
| $u = 0.25598 - 1.42903I$ $a = 1.53166 + 0.00791I$ $b = 0.429957 + 1.299692I$ | $-1.37538 - 8.63536I$ | $4.44478 + 7.40077I$ |
| $u = 0.25598 + 1.42903I$ $a = 1.53166 - 0.00791I$ $b = 0.429957 - 1.299692I$ | $-1.37538 + 8.63536I$ | $4.44478 - 7.40077I$ |
| $u = 0.31043 - 1.46205I$ $a = -1.62485 - 0.57666I$ $b = -0.70775 - 1.34146I$ | $-0.93880 - 9.51927I$ | $3.54801 + 6.62763I$ |
| $u = 0.31043 + 1.46205I$ $a = -1.62485 + 0.57666I$ $b = -0.70775 + 1.34146I$ | $-0.93880 + 9.51927I$ | $3.54801 - 6.62763I$ |
| $u = 0.327994 - 1.351609I$ $a = -0.729787 + 0.028244I$ $b = -0.290077 - 1.121426I$ | $-2.02174 - 4.04028I$ | $4.14152 + 2.22321I$ |
| $u = 0.327994 + 1.351609I$ $a = -0.729787 - 0.028244I$ $b = -0.290077 + 1.121426I$ | $-2.02174 + 4.04028I$ | $4.14152 - 2.22321I$ |
| $u = 0.33909 - 1.42618I$ $a = 1.310328 + 0.140939I$ $b = 0.412854 + 0.931526I$ | $-2.65219 - 4.84548I$ | $1.56916 + 0.74507I$ |
| $u = 0.33909 + 1.42618I$ $a = 1.310328 - 0.140939I$ $b = 0.412854 - 0.931526I$ | $-2.65219 + 4.84548I$ | $1.56916 - 0.74507I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|----------------------|
| $u = 0.413553$ $a = 1.49133$ $b = 0.0976025$ | 1.01618 | 11.7028 |
| $u = 0.437958$ $a = -1.04481$ $b = -1.22248$ | 0.260961 | 17.7584 |
| $u = 0.534184 - 0.471782I$ $a = 0.365573 - 0.473234I$ $b = 0.568753 - 0.043415I$ | $1.09531 - 1.83562I$ | $2.55599 + 4.19616I$ |
| $u = 0.534184 + 0.471782I$ $a = 0.365573 + 0.473234I$ $b = 0.568753 + 0.043415I$ | $1.09531 + 1.83562I$ | $2.55599 - 4.19616I$ |
| $u = 0.639752 - 0.538004I$ $a = -0.121179 + 0.549117I$ $b = 0.366420 - 1.022379I$ | $3.84856 + 1.30465I$ | $7.86722 - 0.04651I$ |
| $u = 0.639752 + 0.538004I$ $a = -0.121179 - 0.549117I$ $b = 0.366420 + 1.022379I$ | $3.84856 - 1.30465I$ | $7.86722 + 0.04651I$ |
| $u = 0.643915 - 0.344718I$ $a = 1.02174 - 1.52960I$ $b = 0.339896 + 1.158023I$ | $4.28355 - 5.31590I$ | $8.32121 + 6.98455I$ |
| $u = 0.643915 + 0.344718I$ $a = 1.02174 + 1.52960I$ $b = 0.339896 - 1.158023I$ | $4.28355 + 5.31590I$ | $8.32121 - 6.98455I$ |
| $u = 0.729537 - 0.676863I$ $a = 0.705628 + 0.294822I$ $b = -0.163050 + 1.175523I$ | $4.14808 + 0.48807I$ | $6.45527 + 0.42959I$ |
| $u = 0.729537 + 0.676863I$ $a = 0.705628 - 0.294822I$ $b = -0.163050 - 1.175523I$ | $4.14808 - 0.48807I$ | $6.45527 - 0.42959I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|----------------------|
| $u = 0.795743 - 0.391782I$ $a = -0.779030 + 0.323330I$ $b = -0.446696 - 1.338067I$ | $4.98505 - 5.49905I$ | $7.28766 + 5.67795I$ |
| $u = 0.795743 + 0.391782I$ $a = -0.779030 - 0.323330I$ $b = -0.446696 + 1.338067I$ | $4.98505 + 5.49905I$ | $7.28766 - 5.67795I$ |
| $u = 0.906285 - 0.046309I$ $a = 0.429876 - 0.705443I$ $b = 0.058387 + 0.883000I$ | $2.31155 - 0.31959I$ | $6.67473 - 1.17791I$ |
| $u = 0.906285 + 0.046309I$ $a = 0.429876 + 0.705443I$ $b = 0.058387 - 0.883000I$ | $2.31155 + 0.31959I$ | $6.67473 + 1.17791I$ |

III. u-Polynomials

| Crossings | u-Polynomials at each crossings |
|------------|--|
| c_1 | $(u^{17} - 6u^{16} + \dots + 6u - 1)(u^{74} + 3u^{73} + \dots + 59049u + 17047)$ |
| c_2 | $(u^{17} + u^{16} + \dots - 5u^2 - 1)(u^{74} + 2u^{73} + \dots - 349u - 241)$ |
| c_3 | $(u^{17} + 3u^{16} + \dots + 3u + 1)(u^{74} + 4u^{73} + \dots - 578u - 28)$ |
| c_4, c_5 | $(u^{17} + 2u^{16} + \dots + 4u + 1)(u^{74} + 3u^{73} + \dots + 209u + 47)$ |
| c_6 | $(u^{17} - u^{16} + \dots + 5u^2 + 1)(u^{74} + 2u^{73} + \dots - 349u - 241)$ |
| c_7 | $(u^{17} - 3u^{16} + \dots - u + 1)(u^{74} - 29u^{72} + \dots - 4312u - 2881)$ |
| c_8 | $(u^{17} - 2u^{16} + \dots + 4u - 1)(u^{74} + 3u^{73} + \dots + 209u + 47)$ |
| c_9 | $(u^{17} - 8u^{14} + \dots + 9u + 1)(u^{74} + u^{73} + \dots + 2616u + 589)$ |
| c_{10} | $(u^{17} + 3u^{16} + \dots - u - 1)(u^{74} - 29u^{72} + \dots - 4312u - 2881)$ |
| c_{11} | $(u^{17} - 3u^{16} + \dots + 3u - 1)(u^{74} + 4u^{73} + \dots - 578u - 28)$ |

IV. Riley Polynomials

| Crossings | Riley Polynomials at each crossings |
|-----------------|---|
| c_1 | $(y^{17} - 4y^{16} + \dots + 12y - 1)$ $(y^{74} - 33y^{73} + \dots - 6606862717y + 290600209)$ |
| c_2, c_6 | $(y^{17} + 11y^{16} + \dots - 10y - 1)(y^{74} + 50y^{73} + \dots - 32631y + 58081)$ |
| c_3 | $(y^{17} + 11y^{16} + \dots - 11y - 1)(y^{74} + 46y^{73} + \dots - 79788y + 784)$ |
| c_4, c_5, c_8 | $(y^{17} + 18y^{16} + \dots + 6y - 1)(y^{74} + 69y^{73} + \dots - 23847y + 2209)$ |
| c_7 | $(y^{17} - 17y^{16} + \dots + 15y - 1)$ $(y^{74} - 58y^{73} + \dots - 75786956y + 8300161)$ |
| c_9 | $(y^{17} - 12y^{14} + \dots + 55y - 1)$ $(y^{74} - 9y^{73} + \dots - 10759128y + 346921)$ |
| c_{10} | $(y^{17} - 17y^{16} + \dots + 15y - 1)$ $(y^{74} - 58y^{73} + \dots - 75786956y + 8300161)$ |
| c_{11} | $(y^{17} + 11y^{16} + \dots - 11y - 1)(y^{74} + 46y^{73} + \dots - 79788y + 784)$ |