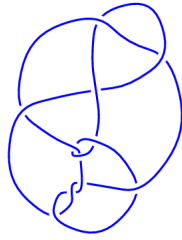
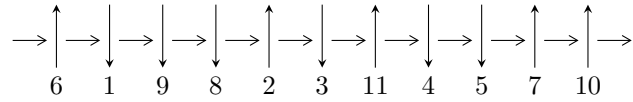


11a₈₇ (K11a₈₇)

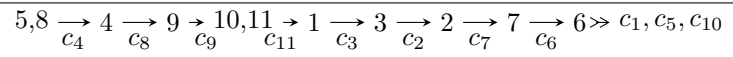


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = \bigcap_{i=1}^2 I_i^u \cap I_1^v$$

$$I_1^u = \langle b^4 - 2b^3 + 7b^2 - 6b + 3, 2b^3 - 3b^2 + 15b + 5u - 7, 2b^3 - 3b^2 + 15b + 10a - 7 \rangle$$

$$I_2^u = \langle u^{66} - u^{65} + \dots - 16u + 4, 9.20724 \times 10^{31}u^{65} - 1.36205 \times 10^{34}u^{64} + \dots + 9.36862 \times 10^{33}b - 7.77123 \times 10^{34} \\ 5.76968 \times 10^{33}u^{65} + 2.44492 \times 10^{34}u^{64} + \dots + 2.81059 \times 10^{34}a + 1.46982 \times 10^{35} \rangle$$

$$I_1^v = \langle b - v + 1, v^2 - v + 1, a \rangle$$

There are 3 irreducible components with 72 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.

$$I_1^u = \langle b^4 - 2b^3 + 7b^2 - 6b + 3, 2b^3 - 3b^2 + 15b + 5u - 7, 2b^3 - 3b^2 + 15b + 10a - 7 \rangle$$

(i) Arc colorings

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

$$a_8 = \begin{pmatrix} 0 \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 3b + \frac{7}{5} \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{2}{5}b^3 - \frac{3}{5}b^2 + 3b - \frac{7}{5} \\ \frac{3}{5}b^3 - \frac{3}{5}b^2 + 3b - \frac{7}{5} \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0 \\ \frac{2}{5}b^3 - \frac{3}{5}b^2 + 3b - \frac{7}{5} \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -\frac{1}{5}b^3 + \frac{3}{10}b^2 - \frac{3}{2}b + \frac{7}{10} \\ b \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -\frac{1}{5}b^3 + \frac{3}{10}b^2 - \frac{3}{2}b + \frac{7}{10} \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 2b + \frac{7}{5} \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} -\frac{1}{10}b^3 - \frac{1}{10}b^2 - \frac{1}{2}b - \frac{7}{5} \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 2b + \frac{7}{5} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -\frac{1}{5}b^3 + \frac{3}{10}b^2 - \frac{3}{2}b + \frac{7}{10} \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 2b + \frac{7}{5} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{5}b^3 + \frac{9}{10}b^2 - \frac{7}{2}b + \frac{21}{10} \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 2b + \frac{7}{5} \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -\frac{3}{5}b^3 + \frac{9}{10}b^2 - \frac{7}{2}b + \frac{21}{10} \\ -\frac{2}{5}b^3 + \frac{3}{5}b^2 - 2b + \frac{7}{5} \end{pmatrix}$$

(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 |
|-------|------------------------|---------------------------------------|----------------------|
| $u =$ | $1.41421I$ | | |
| $a =$ | $0.707107I$ | $6.57974 + 2.02988I$ | $6.00000 - 3.46410I$ |
| $b =$ | $0.50000 - 2.28024I$ | | |
| $u =$ | $-1.41421I$ | | |
| $a =$ | $-0.707107I$ | $6.57974 - 2.02988I$ | $6.00000 + 3.46410I$ |
| $b =$ | $0.50000 + 2.28024I$ | | |
| $u =$ | $1.41421I$ | | |
| $a =$ | $0.707107I$ | $6.57974 - 2.02988I$ | $6.00000 + 3.46410I$ |
| $b =$ | $0.500000 - 0.548188I$ | | |
| $u =$ | $-1.41421I$ | | |
| $a =$ | $-0.707107I$ | $6.57974 + 2.02988I$ | $6.00000 - 3.46410I$ |
| $b =$ | $0.500000 + 0.548188I$ | | |

$$\text{II. } I_2^u = \langle u^{66} - u^{65} + \dots - 16u + 4, 9.21 \times 10^{31}u^{65} - 1.36 \times 10^{34}u^{64} + \dots + 9.37 \times 10^{33}b - 7.77 \times 10^{34}, 5.77 \times 10^{33}u^{65} + 2.44 \times 10^{34}u^{64} + \dots + 2.81 \times 10^{34}a + 1.47 \times 10^{35} \rangle$$

(i) Arc colorings

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

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

$$a_4 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^3 - 2u \\ u^3 + u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.205284u^{65} - 0.869896u^{64} + \dots + 6.84902u - 5.22958 \\ -0.00982774u^{65} + 1.45384u^{64} + \dots - 18.5273u + 8.29495 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1.50448u^{65} + 0.165429u^{64} + \dots - 7.72735u + 0.973642 \\ 0.243249u^{65} - 0.0886886u^{64} + \dots - 0.904671u + 2.08668 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 2.00167u^{65} - 1.39883u^{64} + \dots + 23.4304u - 9.01528 \\ 1.03297u^{65} - 0.749801u^{64} + \dots + 10.2708u - 2.01532 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.756501u^{65} - 0.757764u^{64} + \dots + 23.4437u - 9.88498 \\ -0.541389u^{65} + 0.173816u^{64} + \dots - 11.7654u + 6.81960 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.624305u^{65} - 0.799842u^{64} + \dots + 24.0390u - 8.41654 \\ -0.417093u^{65} - 0.510021u^{64} + \dots - 11.0058u + 6.74075 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.624305u^{65} - 0.799842u^{64} + \dots + 24.0390u - 8.41654 \\ -0.417093u^{65} - 0.510021u^{64} + \dots - 11.0058u + 6.74075 \end{pmatrix}$$

(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 |
|---|---------------------------------------|-----------------------|
| $u = -0.766455 - 0.077529I$ $a = 0.889976 + 0.922821I$ $b = -0.484978 - 1.069893I$ | $-5.71596 + 2.27676I$ | $-8.12812 - 2.88502I$ |
| $u = -0.766455 + 0.077529I$ $a = 0.889976 - 0.922821I$ $b = -0.484978 + 1.069893I$ | $-5.71596 - 2.27676I$ | $-8.12812 + 2.88502I$ |
| $u = -0.761343 - 0.220500I$ $a = 0.796739 + 0.883818I$ $b = -0.331605 - 1.007213I$ | $-4.51086 - 5.70416I$ | $-6.27075 + 4.89802I$ |
| $u = -0.761343 + 0.220500I$ $a = 0.796739 - 0.883818I$ $b = -0.331605 + 1.007213I$ | $-4.51086 + 5.70416I$ | $-6.27075 - 4.89802I$ |
| $u = -0.736932 - 0.299064I$ $a = 0.98828 - 1.19408I$ $b = -0.69790 + 1.41887I$ | $0.08192 - 6.09483I$ | $0.06758 + 5.72110I$ |
| $u = -0.736932 + 0.299064I$ $a = 0.98828 + 1.19408I$ $b = -0.69790 - 1.41887I$ | $0.08192 + 6.09483I$ | $0.06758 - 5.72110I$ |
| $u = -0.566771 - 0.249521I$ $a = 1.19811 - 1.23870I$ $b = -0.94873 + 1.41476I$ | $1.97562 - 3.83931I$ | $0.43158 + 7.99484I$ |
| $u = -0.566771 + 0.249521I$ $a = 1.19811 + 1.23870I$ $b = -0.94873 - 1.41476I$ | $1.97562 + 3.83931I$ | $0.43158 - 7.99484I$ |
| $u = -0.420033 - 0.333266I$ $a = -1.87607 + 0.93838I$ $b = -0.0016954 + 0.0607084I$ | $2.51441 + 1.02533I$ | $3.07736 + 2.06010I$ |
| $u = -0.420033 + 0.333266I$ $a = -1.87607 - 0.93838I$ $b = -0.0016954 - 0.0607084I$ | $2.51441 - 1.02533I$ | $3.07736 - 2.06010I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = -0.415219 - 0.663799I$ $a = -1.200974 + 0.722105I$ $b = -0.094176 + 0.170005I$ | $1.45545 + 2.02266I$ | $2.54801 - 0.95165I$ |
| $u = -0.415219 + 0.663799I$ $a = -1.200974 - 0.722105I$ $b = -0.094176 - 0.170005I$ | $1.45545 - 2.02266I$ | $2.54801 + 0.95165I$ |
| $u = -0.345241 - 0.895093I$ $a = 0.488880 + 0.826822I$ $b = 0.636542 - 0.637033I$ | $-2.36959 + 1.62048I$ | $-3.73825 + 0.07874I$ |
| $u = -0.345241 + 0.895093I$ $a = 0.488880 - 0.826822I$ $b = 0.636542 + 0.637033I$ | $-2.36959 - 1.62048I$ | $-3.73825 - 0.07874I$ |
| $u = -0.339570 - 1.123424I$ $a = 0.403562 + 0.819356I$ $b = 1.134630 - 0.828201I$ | $-2.51166 - 6.30368I$ | $-3.44752 + 7.00698I$ |
| $u = -0.339570 + 1.123424I$ $a = 0.403562 - 0.819356I$ $b = 1.134630 + 0.828201I$ | $-2.51166 + 6.30368I$ | $-3.44752 - 7.00698I$ |
| $u = -0.30797 - 1.38816I$ $a = -0.673773 + 0.069757I$ $b = -0.125527 + 0.875734I$ | $0.59224 - 9.57146I$ | $-1.56973 + 6.21759I$ |
| $u = -0.30797 + 1.38816I$ $a = -0.673773 - 0.069757I$ $b = -0.125527 - 0.875734I$ | $0.59224 + 9.57146I$ | $-1.56973 - 6.21759I$ |
| $u = -0.303981 - 1.292764I$ $a = -0.686383 + 0.183704I$ $b = -0.221859 + 0.786876I$ | $-1.45645 - 1.57837I$ | $-4.18409 + 0.17354I$ |
| $u = -0.303981 + 1.292764I$ $a = -0.686383 - 0.183704I$ $b = -0.221859 - 0.786876I$ | $-1.45645 + 1.57837I$ | $-4.18409 - 0.17354I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|----------------------|
| $u = -0.29256 - 1.42563I$ | | |
| $a = 0.235019 + 0.861729I$ | $5.59217 - 9.84151I$ | $4.35993 + 5.90567I$ |
| $b = 1.89943 - 1.94072I$ | | |
| $u = -0.29256 + 1.42563I$ | | |
| $a = 0.235019 - 0.861729I$ | $5.59217 + 9.84151I$ | $4.35993 - 5.90567I$ |
| $b = 1.89943 + 1.94072I$ | | |
| $u = -0.230210 - 1.389366I$ | | |
| $a = 0.226447 + 0.813635I$ | $7.19005 - 6.79978I$ | $5.09513 + 6.93835I$ |
| $b = 2.40600 - 1.68298I$ | | |
| $u = -0.230210 + 1.389366I$ | | |
| $a = 0.226447 - 0.813635I$ | $7.19005 + 6.79978I$ | $5.09513 - 6.93835I$ |
| $b = 2.40600 + 1.68298I$ | | |
| $u = -0.173505 - 1.394469I$ | | |
| $a = 0.287523 - 0.847353I$ | $7.96080 - 1.22074I$ | $6.79923 + 0.85488I$ |
| $b = -0.14057 + 1.45553I$ | | |
| $u = -0.173505 + 1.394469I$ | | |
| $a = 0.287523 + 0.847353I$ | $7.96080 + 1.22074I$ | $6.79923 - 0.85488I$ |
| $b = -0.14057 - 1.45553I$ | | |
| $u = -0.11906 - 1.47509I$ | | |
| $a = 0.293226 - 0.704626I$ | $8.21032 + 0.24162I$ | $6.87319 - 1.62100I$ |
| $b = -0.121165 + 1.386833I$ | | |
| $u = -0.11906 + 1.47509I$ | | |
| $a = 0.293226 + 0.704626I$ | $8.21032 - 0.24162I$ | $6.87319 + 1.62100I$ |
| $b = -0.121165 - 1.386833I$ | | |
| $u = -0.042998 - 1.299040I$ | | |
| $a = -0.280255 + 0.357820I$ | $4.56888 + 2.29703I$ | $0.80484 - 4.23550I$ |
| $b = -0.80884 + 1.39949I$ | | |
| $u = -0.042998 + 1.299040I$ | | |
| $a = -0.280255 - 0.357820I$ | $4.56888 - 2.29703I$ | $0.80484 + 4.23550I$ |
| $b = -0.80884 - 1.39949I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-------------------------|
| $u = 0.01658 - 1.49295I$ | | |
| $a = -0.186391 - 0.475190I$ | $5.19371 + 1.45398I$ | $-1.91227 - 0.25472I$ |
| $b = 0.042645 + 1.324276I$ | | |
| $u = 0.01658 + 1.49295I$ | | |
| $a = -0.186391 + 0.475190I$ | $5.19371 - 1.45398I$ | $-1.91227 + 0.25472I$ |
| $b = 0.042645 - 1.324276I$ | | |
| $u = 0.10345 - 1.51840I$ | | |
| $a = -0.334761 - 0.639683I$ | $6.42459 - 4.74081I$ | $2.29833 + 6.78281I$ |
| $b = 0.126466 + 1.350731I$ | | |
| $u = 0.10345 + 1.51840I$ | | |
| $a = -0.334761 + 0.639683I$ | $6.42459 + 4.74081I$ | $2.29833 - 6.78281I$ |
| $b = 0.126466 - 1.350731I$ | | |
| $u = 0.117062 - 1.270442I$ | | |
| $a = -0.164437 - 0.981061I$ | $4.37513 - 0.91344I$ | $-0.007678 + 0.946209I$ |
| $b = 0.08962 + 1.53870I$ | | |
| $u = 0.117062 + 1.270442I$ | | |
| $a = -0.164437 + 0.981061I$ | $4.37513 + 0.91344I$ | $-0.007678 - 0.946209I$ |
| $b = 0.08962 - 1.53870I$ | | |
| $u = 0.125047 - 1.353268I$ | | |
| $a = 0.396657 + 0.154506I$ | $4.99477 + 2.60395I$ | $2.08066 - 2.86296I$ |
| $b = 0.346717 + 1.152098I$ | | |
| $u = 0.125047 + 1.353268I$ | | |
| $a = 0.396657 - 0.154506I$ | $4.99477 - 2.60395I$ | $2.08066 + 2.86296I$ |
| $b = 0.346717 - 1.152098I$ | | |
| $u = 0.200489 - 1.366257I$ | | |
| $a = -0.226668 + 0.784151I$ | $6.21106 + 1.42535I$ | $3.39335 - 2.09108I$ |
| $b = -2.66682 - 1.37411I$ | | |
| $u = 0.200489 + 1.366257I$ | | |
| $a = -0.226668 - 0.784151I$ | $6.21106 - 1.42535I$ | $3.39335 + 2.09108I$ |
| $b = -2.66682 + 1.37411I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = 0.208619 - 1.062941I$ $a = -0.441431 + 0.755191I$ $b = -1.083186 - 0.384149I$ | $0.77779 + 2.28714I$ | $0.68771 - 3.78757I$ |
| $u = 0.208619 + 1.062941I$ $a = -0.441431 - 0.755191I$ $b = -1.083186 + 0.384149I$ | $0.77779 - 2.28714I$ | $0.68771 + 3.78757I$ |
| $u = 0.219460 - 1.365061I$ $a = -0.321817 - 0.904961I$ $b = 0.16655 + 1.48073I$ | $5.95344 + 5.84050I$ | $2.74925 - 5.61234I$ |
| $u = 0.219460 + 1.365061I$ $a = -0.321817 + 0.904961I$ $b = 0.16655 - 1.48073I$ | $5.95344 - 5.84050I$ | $2.74925 + 5.61234I$ |
| $u = 0.271575 - 1.368455I$ $a = 0.630153 + 0.097365I$ $b = 0.177353 + 0.899528I$ | $3.05327 + 4.56939I$ | $1.49874 - 2.48258I$ |
| $u = 0.271575 + 1.368455I$ $a = 0.630153 - 0.097365I$ $b = 0.177353 - 0.899528I$ | $3.05327 - 4.56939I$ | $1.49874 + 2.48258I$ |
| $u = 0.30990 - 1.44029I$ $a = -0.235493 + 0.875502I$ $b = -1.77660 - 2.00272I$ | $3.2588 + 15.1381I$ | $1.46461 - 9.54124I$ |
| $u = 0.30990 + 1.44029I$ $a = -0.235493 - 0.875502I$ $b = -1.77660 + 2.00272I$ | $3.2588 - 15.1381I$ | $1.46461 + 9.54124I$ |
| $u = 0.31321 - 1.38221I$ $a = -0.263742 + 0.855004I$ $b = -1.79380 - 1.67306I$ | $0.48993 + 7.02185I$ | $-1.69759 - 4.68375I$ |
| $u = 0.31321 + 1.38221I$ $a = -0.263742 - 0.855004I$ $b = -1.79380 + 1.67306I$ | $0.48993 - 7.02185I$ | $-1.69759 + 4.68375I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = 0.317586 - 0.361795I$ $a = -0.507119 + 0.657734I$ $b = 0.074617 - 0.449630I$ | $-0.280767 + 1.133579I$ | $-3.39541 - 6.11783I$ |
| $u = 0.317586 + 0.361795I$ $a = -0.507119 - 0.657734I$ $b = 0.074617 + 0.449630I$ | $-0.280767 - 1.133579I$ | $-3.39541 + 6.11783I$ |
| $u = 0.355892 - 0.901733I$ $a = 0.937463 + 0.544982I$ $b = 0.216878 + 0.311390I$ | $-2.37023 + 1.02641I$ | $-3.70545 - 1.47223I$ |
| $u = 0.355892 + 0.901733I$ $a = 0.937463 - 0.544982I$ $b = 0.216878 - 0.311390I$ | $-2.37023 - 1.02641I$ | $-3.70545 + 1.47223I$ |
| $u = 0.478599 - 0.172696I$ $a = -1.46322 - 1.14871I$ $b = 1.23106 + 1.27599I$ | $1.29731 - 1.14051I$ | $-2.73104 - 3.13180I$ |
| $u = 0.478599 + 0.172696I$ $a = -1.46322 + 1.14871I$ $b = 1.23106 - 1.27599I$ | $1.29731 + 1.14051I$ | $-2.73104 + 3.13180I$ |
| $u = 0.513440 - 0.734763I$ $a = 1.205766 + 0.559168I$ $b = 0.060889 + 0.234866I$ | $-0.97780 - 6.67256I$ | $-1.35483 + 4.69695I$ |
| $u = 0.513440 + 0.734763I$ $a = 1.205766 - 0.559168I$ $b = 0.060889 - 0.234866I$ | $-0.97780 + 6.67256I$ | $-1.35483 - 4.69695I$ |
| $u = 0.536105 - 0.161043I$ $a = 2.16249 + 0.41726I$ $b = -0.0450618 + 0.0361179I$ | $1.07785 + 3.02843I$ | $-3.36953 - 6.29869I$ |
| $u = 0.536105 + 0.161043I$ $a = 2.16249 - 0.41726I$ $b = -0.0450618 - 0.0361179I$ | $1.07785 - 3.02843I$ | $-3.36953 + 6.29869I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = 0.683795 - 0.172650I$ $a = -0.841270 + 0.831802I$ $b = 0.410618 - 0.925992I$ | $-1.84194 + 1.10470I$ | $-3.59487 - 1.11336I$ |
| $u = 0.683795 + 0.172650I$ $a = -0.841270 - 0.831802I$ $b = 0.410618 + 0.925992I$ | $-1.84194 - 1.10470I$ | $-3.59487 + 1.11336I$ |
| $u = 0.769555 - 0.212766I$ $a = -0.98425 - 1.12194I$ $b = 0.66763 + 1.33226I$ | $-4.56064 + 3.10867I$ | $-6.29627 - 3.31859I$ |
| $u = 0.769555 + 0.212766I$ $a = -0.98425 + 1.12194I$ $b = 0.66763 - 1.33226I$ | $-4.56064 - 3.10867I$ | $-6.29627 + 3.31859I$ |
| $u = 0.781478 - 0.320364I$ $a = -0.95225 - 1.19184I$ $b = 0.65487 + 1.43015I$ | $-2.37082 + 11.17442I$ | $-2.82609 - 9.10390I$ |
| $u = 0.781478 + 0.320364I$ $a = -0.95225 + 1.19184I$ $b = 0.65487 - 1.43015I$ | $-2.37082 - 11.17442I$ | $-2.82609 + 9.10390I$ |

$$\text{III. } I_1^v = \langle b - v + 1, v^2 - v + 1, a \rangle$$

(i) Arc colorings

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

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

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

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

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

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

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

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

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

$$a_7 = \begin{pmatrix} v \\ -v + 1 \end{pmatrix}$$

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

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

(ii) Obstruction class = -1

(iii) Cusp Shapes = unknown

(iv) Complex Volumes and Cusp Shapes

| Solution to I_1^v | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-------------|
| $v = 0.500000 - 0.866025I$ | $1.64493 - 2.02988I$ | $3.46410I$ |
| $a = 0$ | | |
| $b = -0.500000 - 0.866025I$ | | |
| $v = 0.500000 + 0.866025I$ | $1.64493 + 2.02988I$ | $-3.46410I$ |
| $a = 0$ | | |
| $b = -0.500000 + 0.866025I$ | | |

IV. u-Polynomials

| Crossings | u-Polynomials at each crossings |
|-----------------|---|
| c_1 | $(u^2 - u + 1)^3(u^{66} + 2u^{65} + \dots + 9u + 3)$ |
| c_2 | $(u^2 - u + 1)(u^2 + u + 1)^2(u^{66} + 32u^{65} + \dots + 33u + 9)$ |
| c_3, c_4, c_8 | $u^2(u^2 + 2)^2(u^{66} + u^{65} + \dots + 16u + 4)$ |
| c_5 | $(u^2 + u + 1)^3(u^{66} + 2u^{65} + \dots + 9u + 3)$ |
| c_6 | $(u^2 - u + 1)^2(u^2 + u + 1)(u^{66} + 2u^{65} + \dots + 9195u + 2391)$ |
| c_7 | $(u - 1)^4(u + 1)^2(u^{66} + 3u^{65} + \dots + 16u + 3)$ |
| c_9 | $u^2(u^2 + 2)^2(u^{66} + u^{65} + \dots + 64u + 548)$ |
| c_{10} | $(u + 1)^6(u^{66} + 3u^{65} + \dots + 16u + 3)$ |
| c_{11} | $(u - 1)^4(u + 1)^2(u^{66} + 33u^{65} + \dots + 4u + 9)$ |

V. Riley Polynomials

| Crossings | Riley Polynomials at each crossings |
|-----------------|--|
| c_1 | $(y^2 + y + 1)^3(y^{66} + 32y^{65} + \dots + 33y + 9)$ |
| c_2 | $(y^2 + y + 1)^3(y^{66} + 8y^{65} + \dots + 873y + 81)$ |
| c_3, c_4, c_8 | $y^2(y + 2)^4(y^{66} + 61y^{65} + \dots - 128y + 16)$ |
| c_5 | $(y^2 + y + 1)^3(y^{66} + 32y^{65} + \dots + 33y + 9)$ |
| c_6 | $(y^2 + y + 1)^3(y^{66} - 16y^{65} + \dots - 6.01072 \times 10^7 y + 5716881)$ |
| c_7 | $(y - 1)^6(y^{66} - 33y^{65} + \dots - 4y + 9)$ |
| c_9 | $y^2(y + 2)^4(y^{66} + y^{65} + \dots - 1284224y + 300304)$ |
| c_{10} | $(y - 1)^6(y^{66} - 33y^{65} + \dots - 4y + 9)$ |
| c_{11} | $(y - 1)^6(y^{66} + 7y^{65} + \dots - 2176y + 81)$ |