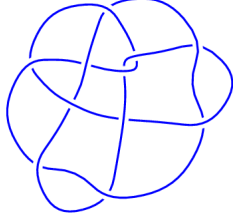
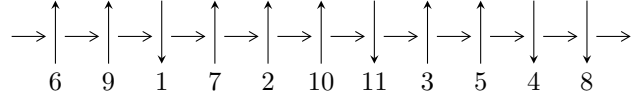


11a₂₉₀ (K11a₂₉₀)

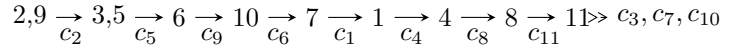


1

Arc Sequences



Solving Sequence



Representation Ideals

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

$$\begin{aligned} I_1^u &= \langle u^{16} - u^{15} + 4u^{14} - 2u^{13} + 6u^{12} - 4u^{11} + 6u^{10} - 7u^9 + 5u^8 - 2u^7 + 13u^6 + 13u^5 + 20u^4 + 14u^3 + 9u^2 + 3u \\ &\quad - 227u^{15} - 235u^{14} + \dots + 883b - 1966, 7914u^{15} - 35148u^{14} + \dots + 16777a - 84058 \rangle \\ I_2^u &= \langle u^{86} + 28u^{84} + \dots - 558u + 43, \\ &\quad - 1.84724 \times 10^{213}u^{85} + 1.97680 \times 10^{212}u^{84} + \dots + 1.12592 \times 10^{212}b + 2.51395 \times 10^{214}, \\ &\quad 1.43066 \times 10^{215}u^{85} - 9.60941 \times 10^{213}u^{84} + \dots + 4.84147 \times 10^{213}a - 1.67644 \times 10^{216} \rangle \end{aligned}$$

There are 2 irreducible components with 102 representations.

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

$$\text{I. } I_1^u = \langle u^{16} - u^{15} + \dots + 3u + 1, -227u^{15} - 235u^{14} + \dots + 883b - 1966, 7914u^{15} - 35148u^{14} + \dots + 16777a - 84058 \rangle$$

(i) Arc colorings

$$\begin{aligned} a_2 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} -0.471717u^{15} + 2.09501u^{14} + \dots + 10.1220u + 5.01031 \\ 0.257078u^{15} + 0.266138u^{14} + \dots + 5.43148u + 2.22650 \end{pmatrix} \\ a_3 &= \begin{pmatrix} -2.43321u^{15} + 2.74280u^{14} + \dots - 6.61072u + 2.24247 \\ -u^{15} + u^{14} + \dots - 3u^2 + 1 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_6 &= \begin{pmatrix} u \\ u \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -0.471717u^{15} + 2.09501u^{14} + \dots + 10.1220u + 5.01031 \\ 0.640043u^{15} - 0.123860u^{14} + \dots + 9.82965u + 3.84979 \end{pmatrix} \\ a_7 &= \begin{pmatrix} 0.525124u^{15} - 0.676402u^{14} + \dots - 2.89372u - 2.93288 \\ 0.393336u^{15} + 0.0104906u^{14} + \dots - 0.436967u - 0.676402 \end{pmatrix} \\ a_1 &= \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix} \\ a_4 &= \begin{pmatrix} -1.88860u^{15} + 2.14663u^{14} + \dots - 6.53943u + 1.09120 \\ -1.36347u^{15} + 1.47023u^{14} + \dots - 0.433153u + 1.15831 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -2.67843u^{15} + 2.35423u^{14} + \dots - 13.6812u - 2.49920 \\ -2.46319u^{15} + 3.38392u^{14} + \dots - 1.15629u + 1.17780 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 3.44519u^{15} - 3.98707u^{14} + \dots + 13.3874u + 1.82512 \\ -1.03892u^{15} + 0.778625u^{14} + \dots - 1.72218u - 0.771830 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} 3.44519u^{15} - 3.98707u^{14} + \dots + 13.3874u + 1.82512 \\ -1.03892u^{15} + 0.778625u^{14} + \dots - 1.72218u - 0.771830 \end{pmatrix} \end{aligned}$$

(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 |
|--|---------------------------------------|-----------------------|
| $u = -0.761615 - 0.708206I$ $a = 0.083349 + 0.592965I$ $b = -0.021984 + 0.564934I$ | $0.61323 + 2.78453I$ | $-4.10721 - 5.83574I$ |
| $u = -0.761615 + 0.708206I$ $a = 0.083349 - 0.592965I$ $b = -0.021984 - 0.564934I$ | $0.61323 - 2.78453I$ | $-4.10721 + 5.83574I$ |
| $u = -0.487953 - 0.407538I$ $a = -0.684011 + 0.989829I$ $b = 0.132204 + 0.702423I$ | $0.59940 + 2.95194I$ | $3.83398 - 7.26920I$ |
| $u = -0.487953 + 0.407538I$ $a = -0.684011 - 0.989829I$ $b = 0.132204 - 0.702423I$ | $0.59940 - 2.95194I$ | $3.83398 + 7.26920I$ |
| $u = -0.425355 - 0.816659I$ $a = -0.497300 - 1.014901I$ $b = 0.336771 + 0.246995I$ | $-3.30428 + 2.37215I$ | $-2.07418 - 4.57437I$ |
| $u = -0.425355 + 0.816659I$ $a = -0.497300 + 1.014901I$ $b = 0.336771 - 0.246995I$ | $-3.30428 - 2.37215I$ | $-2.07418 + 4.57437I$ |
| $u = -0.073329 - 0.541610I$ $a = 0.42320 - 3.13257I$ $b = -0.378111 - 0.978487I$ | $-4.37357 + 6.52510I$ | $1.74145 - 8.04405I$ |
| $u = -0.073329 + 0.541610I$ $a = 0.42320 + 3.13257I$ $b = -0.378111 + 0.978487I$ | $-4.37357 - 6.52510I$ | $1.74145 + 8.04405I$ |
| $u = -0.045764 - 1.056208I$ $a = -0.521680 + 0.056450I$ $b = -2.22322 + 1.25773I$ | $-4.75104 - 0.34808I$ | $-9.6091 - 17.4795I$ |
| $u = -0.045764 + 1.056208I$ $a = -0.521680 - 0.056450I$ $b = -2.22322 - 1.25773I$ | $-4.75104 + 0.34808I$ | $-9.6091 + 17.4795I$ |

| Solution to I_1^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = 0.33437 - 1.38072I$ | $-8.53798 - 7.71046I$ | $-6.07633 + 6.67688I$ |
| $a = 1.067502 + 0.711427I$ | | |
| $b = 0.352631 - 1.343289I$ | | |
| $u = 0.33437 + 1.38072I$ | $-8.53798 + 7.71046I$ | $-6.07633 - 6.67688I$ |
| $a = 1.067502 - 0.711427I$ | | |
| $b = 0.352631 + 1.343289I$ | | |
| $u = 0.73097 - 1.35093I$ | $-8.08336 - 3.63657I$ | $2.99708 + 2.92692I$ |
| $a = -0.975586 + 0.258185I$ | | |
| $b = -0.179458 + 1.283900I$ | | |
| $u = 0.73097 + 1.35093I$ | $-8.08336 + 3.63657I$ | $2.99708 - 2.92692I$ |
| $a = -0.975586 - 0.258185I$ | | |
| $b = -0.179458 - 1.283900I$ | | |
| $u = 1.228673 - 0.432911I$ | $-1.77120 - 2.90292I$ | $2.29428 + 12.81390I$ |
| $a = -0.395471 + 0.413165I$ | | |
| $b = -0.018830 + 1.228112I$ | | |
| $u = 1.228673 + 0.432911I$ | $-1.77120 + 2.90292I$ | $2.29428 - 12.81390I$ |
| $a = -0.395471 - 0.413165I$ | | |
| $b = -0.018830 - 1.228112I$ | | |

$$\text{II. } I_2^u = \langle u^{86} + 28u^{84} + \dots - 558u + 43, -1.85 \times 10^{213}u^{85} + 1.98 \times 10^{212}u^{84} + \dots + 1.13 \times 10^{212}b + 2.51 \times 10^{214}, 1.43 \times 10^{215}u^{85} - 9.61 \times 10^{213}u^{84} + \dots + 4.84 \times 10^{213}a - 1.68 \times 10^{216} \rangle$$

(i) Arc colorings

$$\begin{aligned} a_2 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_9 &= \begin{pmatrix} -29.5502u^{85} + 1.98481u^{84} + \dots - 5594.38u + 346.267 \\ 16.4064u^{85} - 1.75572u^{84} + \dots + 3460.34u - 223.279 \end{pmatrix} \\ a_3 &= \begin{pmatrix} 7.03050u^{85} - 2.46256u^{84} + \dots + 2063.67u - 143.018 \\ -1.22951u^{85} - 6.62550u^{84} + \dots + 3197.16u - 254.215 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_6 &= \begin{pmatrix} u \\ u \end{pmatrix} \\ a_{10} &= \begin{pmatrix} -29.5502u^{85} + 1.98481u^{84} + \dots - 5594.38u + 346.267 \\ -17.5338u^{85} - 7.52231u^{84} + \dots + 1082.15u - 137.932 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -2.02256u^{85} - 2.97391u^{84} + \dots + 1153.91u - 101.086 \\ -6.86446u^{85} - 5.28095u^{84} + \dots + 1569.03u - 144.188 \end{pmatrix} \\ a_1 &= \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 8.33605u^{85} - 0.716638u^{84} + \dots + 1420.40u - 88.5044 \\ 7.46175u^{85} - 5.36087u^{84} + \dots + 3783.30u - 274.911 \end{pmatrix} \\ a_8 &= \begin{pmatrix} -7.78248u^{85} + 10.7514u^{84} + \dots - 6627.06u + 489.264 \\ 4.25892u^{85} - 8.25590u^{84} + \dots + 4612.41u - 347.988 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -1.19291u^{85} - 6.45466u^{84} + \dots + 2672.78u - 221.057 \\ 10.2597u^{85} + 7.60433u^{84} + \dots - 2006.34u + 187.176 \end{pmatrix} \\ a_{11} &= \begin{pmatrix} -1.19291u^{85} - 6.45466u^{84} + \dots + 2672.78u - 221.057 \\ 10.2597u^{85} + 7.60433u^{84} + \dots - 2006.34u + 187.176 \end{pmatrix} \end{aligned}$$

(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 |
|---|---------------------------------------|-----------------------|
| $u = -1.371904 - 0.103900I$ $a = -0.155477 + 0.754372I$ $b = -0.159848 + 1.234047I$ | $-1.05879 - 4.77375I$ | $0.11683 + 8.21426I$ |
| $u = -1.371904 + 0.103900I$ $a = -0.155477 - 0.754372I$ $b = -0.159848 - 1.234047I$ | $-1.05879 + 4.77375I$ | $0.11683 - 8.21426I$ |
| $u = -1.225801 - 0.072859I$ $a = 0.356312 - 0.930550I$ $b = 0.32019 - 1.40690I$ | $-6.75829 - 10.98078I$ | $-1.30442 + 6.89269I$ |
| $u = -1.225801 + 0.072859I$ $a = 0.356312 + 0.930550I$ $b = 0.32019 + 1.40690I$ | $-6.75829 + 10.98078I$ | $-1.30442 - 6.89269I$ |
| $u = -1.043668 - 0.552437I$ $a = -0.422498 - 1.044598I$ $b = -0.176487 - 1.270571I$ | $-6.11732 + 3.95002I$ | $-1.89606 - 6.52179I$ |
| $u = -1.043668 + 0.552437I$ $a = -0.422498 + 1.044598I$ $b = -0.176487 + 1.270571I$ | $-6.11732 - 3.95002I$ | $-1.89606 + 6.52179I$ |
| $u = -0.898880 - 0.683918I$ $a = -0.270158 + 0.220060I$ $b = -0.102691 - 0.229037I$ | $1.09250 + 2.96405I$ | $12.5613 - 9.8421I$ |
| $u = -0.898880 + 0.683918I$ $a = -0.270158 - 0.220060I$ $b = -0.102691 + 0.229037I$ | $1.09250 - 2.96405I$ | $12.5613 + 9.8421I$ |
| $u = -0.83796 - 1.48737I$ $a = -0.802232 - 0.244695I$ $b = -0.179144 - 1.277073I$ | $-8.41301 + 3.69610I$ | $-21.7934 - 7.9796I$ |
| $u = -0.83796 + 1.48737I$ $a = -0.802232 + 0.244695I$ $b = -0.179144 + 1.277073I$ | $-8.41301 - 3.69610I$ | $-21.7934 + 7.9796I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = -0.677470 - 0.043888I$ $a = 1.054436 - 0.048386I$ $b = 0.531703 + 0.023026I$ | $1.105699 + 0.002392I$ | $9.73011 + 0.07496I$ |
| $u = -0.677470 + 0.043888I$ $a = 1.054436 + 0.048386I$ $b = 0.531703 - 0.023026I$ | $1.105699 - 0.002392I$ | $9.73011 - 0.07496I$ |
| $u = -0.60345 - 1.42770I$ $a = 1.056733 - 0.070666I$ $b = 0.42393 + 1.40684I$ | $-5.44322 + 11.59019I$ | $-0.22237 - 8.38584I$ |
| $u = -0.60345 + 1.42770I$ $a = 1.056733 + 0.070666I$ $b = 0.42393 - 1.40684I$ | $-5.44322 - 11.59019I$ | $-0.22237 + 8.38584I$ |
| $u = -0.590173 - 0.816881I$ $a = 0.318240 + 0.868516I$ $b = -0.086601 + 0.438946I$ | $0.92382 + 2.38456I$ | $6.67469 + 4.68387I$ |
| $u = -0.590173 + 0.816881I$ $a = 0.318240 - 0.868516I$ $b = -0.086601 - 0.438946I$ | $0.92382 - 2.38456I$ | $6.67469 - 4.68387I$ |
| $u = -0.59006 - 1.38905I$ $a = -1.219284 + 0.112835I$ $b = -0.47210 - 1.56780I$ | $-10.9523 + 17.3442I$ | $-2.84132 - 8.63061I$ |
| $u = -0.59006 + 1.38905I$ $a = -1.219284 - 0.112835I$ $b = -0.47210 + 1.56780I$ | $-10.9523 - 17.3442I$ | $-2.84132 + 8.63061I$ |
| $u = -0.472121 - 1.150992I$ $a = -0.598321 + 0.227039I$ $b = -0.714002 - 0.312630I$ | $-2.08518 + 4.50257I$ | $1.84178 - 8.26392I$ |
| $u = -0.472121 + 1.150992I$ $a = -0.598321 - 0.227039I$ $b = -0.714002 + 0.312630I$ | $-2.08518 - 4.50257I$ | $1.84178 + 8.26392I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|-----------------------|
| $u = -0.43425 - 1.53897I$ $a = 0.624446 - 0.041177I$ $b = -0.019101 + 1.401047I$ | $-12.14742 - 4.74643I$ | $-5.60639 + 3.73153I$ |
| $u = -0.43425 + 1.53897I$ $a = 0.624446 + 0.041177I$ $b = -0.019101 - 1.401047I$ | $-12.14742 + 4.74643I$ | $-5.60639 - 3.73153I$ |
| $u = -0.416327 - 0.832614I$ $a = 1.033597 + 0.281734I$ $b = 0.538060 + 0.526043I$ | $0.75640 + 1.97088I$ | $6.98873 - 3.30851I$ |
| $u = -0.416327 + 0.832614I$ $a = 1.033597 - 0.281734I$ $b = 0.538060 - 0.526043I$ | $0.75640 - 1.97088I$ | $6.98873 + 3.30851I$ |
| $u = -0.414687 - 0.836442I$ $a = 0.02469 - 1.80893I$ $b = 0.674546 - 0.412385I$ | $-3.09982 + 3.89257I$ | $0.11000 - 7.60203I$ |
| $u = -0.414687 + 0.836442I$ $a = 0.02469 + 1.80893I$ $b = 0.674546 + 0.412385I$ | $-3.09982 - 3.89257I$ | $0.11000 + 7.60203I$ |
| $u = -0.31957 - 1.56887I$ $a = -0.643851 + 0.129511I$ $b = -0.261605 - 1.326885I$ | $-7.29801 + 1.70122I$ | $-7.81516 + 2.22973I$ |
| $u = -0.31957 + 1.56887I$ $a = -0.643851 - 0.129511I$ $b = -0.261605 + 1.326885I$ | $-7.29801 - 1.70122I$ | $-7.81516 - 2.22973I$ |
| $u = -0.30166 - 1.40852I$ $a = 0.753175 - 0.174175I$ $b = 0.45071 + 1.62342I$ | $-12.3927 + 8.1607I$ | $-6.36197 - 5.50755I$ |
| $u = -0.30166 + 1.40852I$ $a = 0.753175 + 0.174175I$ $b = 0.45071 - 1.62342I$ | $-12.3927 - 8.1607I$ | $-6.36197 + 5.50755I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|---|---------------------------------------|------------------------|
| $u = -0.176471 - 0.796902I$ $a = -1.78319 + 0.53325I$ $b = -0.791405 - 0.487265I$ | $-2.76919 - 0.86190I$ | $2.48800 + 0.79362I$ |
| $u = -0.176471 + 0.796902I$ $a = -1.78319 - 0.53325I$ $b = -0.791405 + 0.487265I$ | $-2.76919 + 0.86190I$ | $2.48800 - 0.79362I$ |
| $u = -0.088188 - 1.153446I$ $a = -0.789812 + 0.321501I$ $b = -0.796875 + 0.085423I$ | $-2.78970 + 1.91473I$ | $-0.14583 - 3.13596I$ |
| $u = -0.088188 + 1.153446I$ $a = -0.789812 - 0.321501I$ $b = -0.796875 - 0.085423I$ | $-2.78970 - 1.91473I$ | $-0.14583 + 3.13596I$ |
| $u = -0.072665 - 1.004207I$ $a = 0.362898 - 0.418650I$ $b = 2.79686 + 0.72592I$ | $-4.97029 - 0.39838I$ | $-20.3226 - 21.2708I$ |
| $u = -0.072665 + 1.004207I$ $a = 0.362898 + 0.418650I$ $b = 2.79686 - 0.72592I$ | $-4.97029 + 0.39838I$ | $-20.3226 + 21.2708I$ |
| $u = -0.003349 - 1.290414I$ $a = 0.904001 - 0.456554I$ $b = 0.077135 - 0.222987I$ | $-6.67412 + 4.74942I$ | $-4.72582 - 5.55088I$ |
| $u = -0.003349 + 1.290414I$ $a = 0.904001 + 0.456554I$ $b = 0.077135 + 0.222987I$ | $-6.67412 - 4.74942I$ | $-4.72582 + 5.55088I$ |
| $u = 0.0426813 - 0.1283239I$ $a = -4.34140 + 4.79964I$ $b = -0.714469 - 0.107760I$ | $-2.61985 - 1.17605I$ | $1.036569 + 0.187938I$ |
| $u = 0.0426813 + 0.1283239I$ $a = -4.34140 - 4.79964I$ $b = -0.714469 + 0.107760I$ | $-2.61985 + 1.17605I$ | $1.036569 - 0.187938I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = 0.045174 - 1.060190I$ | $-4.31969 - 0.37021I$ | $2.74067 - 3.11098I$ |
| $a = 0.641022 + 0.270076I$ | | |
| $b = 0.66832 - 1.87320I$ | | |
| $u = 0.045174 + 1.060190I$ | $-4.31969 + 0.37021I$ | $2.74067 + 3.11098I$ |
| $a = 0.641022 - 0.270076I$ | | |
| $b = 0.66832 + 1.87320I$ | | |
| $u = 0.109699 - 1.037279I$ | $-3.91481 + 0.17244I$ | $-2.40628 + 0.92361I$ |
| $a = -0.075262 + 0.678065I$ | | |
| $b = -0.62650 - 1.36361I$ | | |
| $u = 0.109699 + 1.037279I$ | $-3.91481 - 0.17244I$ | $-2.40628 - 0.92361I$ |
| $a = -0.075262 - 0.678065I$ | | |
| $b = -0.62650 + 1.36361I$ | | |
| $u = 0.110874 - 1.089878I$ | $-9.95220 - 0.65712I$ | $-6.99959 - 0.10132I$ |
| $a = -1.58183 - 0.43553I$ | | |
| $b = -0.148079 + 1.400726I$ | | |
| $u = 0.110874 + 1.089878I$ | $-9.95220 + 0.65712I$ | $-6.99959 + 0.10132I$ |
| $a = -1.58183 + 0.43553I$ | | |
| $b = -0.148079 - 1.400726I$ | | |
| $u = 0.113725 - 1.064061I$ | $-5.93474 - 7.14233I$ | $-2.64081 + 6.48910I$ |
| $a = 0.32571 + 2.25322I$ | | |
| $b = 0.246587 - 1.249729I$ | | |
| $u = 0.113725 + 1.064061I$ | $-5.93474 + 7.14233I$ | $-2.64081 - 6.48910I$ |
| $a = 0.32571 - 2.25322I$ | | |
| $b = 0.246587 + 1.249729I$ | | |
| $u = 0.119574 - 1.052106I$ | $-1.32630 - 3.41399I$ | $1.48737 + 4.76783I$ |
| $a = 0.02566 - 1.65957I$ | | |
| $b = -0.054741 + 1.153842I$ | | |
| $u = 0.119574 + 1.052106I$ | $-1.32630 + 3.41399I$ | $1.48737 - 4.76783I$ |
| $a = 0.02566 + 1.65957I$ | | |
| $b = -0.054741 - 1.153842I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = 0.184332 - 0.437485I$ $a = 1.335323 + 0.341015I$ $b = 0.433257 + 0.809408I$ | $0.18140 + 1.93771I$ | $1.59406 - 1.02707I$ |
| $u = 0.184332 + 0.437485I$ $a = 1.335323 - 0.341015I$ $b = 0.433257 - 0.809408I$ | $0.18140 - 1.93771I$ | $1.59406 + 1.02707I$ |
| $u = 0.200801 - 0.661210I$ $a = -1.03291 - 1.43278I$ $b = -0.526037 - 1.072217I$ | $-4.76421 + 5.78091I$ | $-3.26098 - 0.44165I$ |
| $u = 0.200801 + 0.661210I$ $a = -1.03291 + 1.43278I$ $b = -0.526037 + 1.072217I$ | $-4.76421 - 5.78091I$ | $-3.26098 + 0.44165I$ |
| $u = 0.354521 - 1.348505I$ $a = 1.48936 + 0.48179I$ $b = 0.078198 - 1.275434I$ | $-10.13014 - 5.46901I$ | $-6.66572 + 5.41172I$ |
| $u = 0.354521 + 1.348505I$ $a = 1.48936 - 0.48179I$ $b = 0.078198 + 1.275434I$ | $-10.13014 + 5.46901I$ | $-6.66572 - 5.41172I$ |
| $u = 0.363451 - 1.148076I$ $a = -0.980075 + 0.397799I$ $b = -0.439430 - 0.147669I$ | $-4.80669 - 1.43419I$ | $-5.07531 + 5.47709I$ |
| $u = 0.363451 + 1.148076I$ $a = -0.980075 - 0.397799I$ $b = -0.439430 + 0.147669I$ | $-4.80669 + 1.43419I$ | $-5.07531 - 5.47709I$ |
| $u = 0.384724 - 1.167243I$ $a = 0.936946 + 0.087081I$ $b = 1.058501 - 0.166799I$ | $-0.44655 - 6.40335I$ | $2.14454 + 7.02506I$ |
| $u = 0.384724 + 1.167243I$ $a = 0.936946 - 0.087081I$ $b = 1.058501 + 0.166799I$ | $-0.44655 + 6.40335I$ | $2.14454 - 7.02506I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|--|---------------------------------------|-----------------------|
| $u = 0.414651 - 1.174810I$ $a = -1.034607 - 0.275306I$ $b = -1.280747 + 0.519114I$ | $-4.46055 - 11.18417I$ | $-1.30197 + 9.10978I$ |
| $u = 0.414651 + 1.174810I$ $a = -1.034607 + 0.275306I$ $b = -1.280747 - 0.519114I$ | $-4.46055 + 11.18417I$ | $-1.30197 - 9.10978I$ |
| $u = 0.428512 - 1.305690I$ $a = -1.316314 - 0.284166I$ $b = -0.378360 + 1.326519I$ | $-6.77744 - 6.30203I$ | $-1.74361 + 5.32894I$ |
| $u = 0.428512 + 1.305690I$ $a = -1.316314 + 0.284166I$ $b = -0.378360 - 1.326519I$ | $-6.77744 + 6.30203I$ | $-1.74361 - 5.32894I$ |
| $u = 0.464293 - 1.266196I$ $a = 1.383771 + 0.197955I$ $b = 0.59453 - 1.60446I$ | $-11.17033 - 7.76159I$ | $-6.60929 + 5.98930I$ |
| $u = 0.464293 + 1.266196I$ $a = 1.383771 - 0.197955I$ $b = 0.59453 + 1.60446I$ | $-11.17033 + 7.76159I$ | $-6.60929 - 5.98930I$ |
| $u = 0.47939 - 1.46461I$ $a = -0.894038 - 0.505683I$ $b = -0.27512 + 1.42570I$ | $-7.64272 - 8.09055I$ | $1.70549 + 9.82828I$ |
| $u = 0.47939 + 1.46461I$ $a = -0.894038 + 0.505683I$ $b = -0.27512 - 1.42570I$ | $-7.64272 + 8.09055I$ | $1.70549 - 9.82828I$ |
| $u = 0.550954 - 1.178572I$ $a = -1.032693 + 0.306243I$ $b = 0.00350 + 1.52364I$ | $-10.65740 - 1.60329I$ | $-6.40803 + 1.36583I$ |
| $u = 0.550954 + 1.178572I$ $a = -1.032693 - 0.306243I$ $b = 0.00350 - 1.52364I$ | $-10.65740 + 1.60329I$ | $-6.40803 - 1.36583I$ |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|-----------------------------|---------------------------------------|-----------------------|
| $u = 0.585323 - 0.305477I$ | | |
| $a = -1.42711 + 0.63177I$ | $-5.18226 - 1.85610I$ | $0.99539 + 2.64658I$ |
| $b = 0.26743 + 1.43796I$ | | |
| $u = 0.585323 + 0.305477I$ | | |
| $a = -1.42711 - 0.63177I$ | $-5.18226 + 1.85610I$ | $0.99539 - 2.64658I$ |
| $b = 0.26743 - 1.43796I$ | | |
| $u = 0.62071 - 1.36597I$ | | |
| $a = 0.830722 + 0.118040I$ | $-5.12935 - 4.31635I$ | $2.02590 + 5.02570I$ |
| $b = 0.18402 - 1.40665I$ | | |
| $u = 0.62071 + 1.36597I$ | | |
| $a = 0.830722 - 0.118040I$ | $-5.12935 + 4.31635I$ | $2.02590 - 5.02570I$ |
| $b = 0.18402 + 1.40665I$ | | |
| $u = 0.674909 - 0.297545I$ | | |
| $a = -0.670593 - 1.155578I$ | $2.29978 + 2.36466I$ | $8.84869 - 2.14342I$ |
| $b = -0.491963 + 0.128609I$ | | |
| $u = 0.674909 + 0.297545I$ | | |
| $a = -0.670593 + 1.155578I$ | $2.29978 - 2.36466I$ | $8.84869 + 2.14342I$ |
| $b = -0.491963 - 0.128609I$ | | |
| $u = 0.725573 - 0.219124I$ | | |
| $a = 0.91812 + 1.30741I$ | $-1.52512 + 6.90858I$ | $3.48753 - 5.41149I$ |
| $b = 0.822552 + 0.231435I$ | | |
| $u = 0.725573 + 0.219124I$ | | |
| $a = 0.91812 - 1.30741I$ | $-1.52512 - 6.90858I$ | $3.48753 + 5.41149I$ |
| $b = 0.822552 - 0.231435I$ | | |
| $u = 0.729471 - 0.142215I$ | | |
| $a = 0.873503 - 0.946093I$ | $-2.46468 - 1.92737I$ | $-2.41058 + 2.87768I$ |
| $b = 0.079218 - 1.178318I$ | | |
| $u = 0.729471 + 0.142215I$ | | |
| $a = 0.873503 + 0.946093I$ | $-2.46468 + 1.92737I$ | $-2.41058 - 2.87768I$ |
| $b = 0.079218 + 1.178318I$ | | |

| Solution to I_2^u | $\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$ | Cusp shape |
|----------------------------|---------------------------------------|-----------------------|
| $u = 0.750237 - 0.353855I$ | $-1.75556 - 2.96398I$ | $2.82161 + 4.93207I$ |
| $a = 0.553538 + 0.172927I$ | | |
| $b = 0.273563 - 0.969299I$ | | |
| $u = 0.750237 + 0.353855I$ | $-1.75556 + 2.96398I$ | $2.82161 - 4.93207I$ |
| $a = 0.553538 - 0.172927I$ | | |
| $b = 0.273563 + 0.969299I$ | | |
| $u = 0.833294 - 0.003827I$ | $-7.36616 + 3.03836I$ | $-3.31324 - 3.10065I$ |
| $a = -0.50951 - 1.41374I$ | | |
| $b = -0.35726 - 1.39065I$ | | |
| $u = 0.833294 + 0.003827I$ | $-7.36616 - 3.03836I$ | $-3.31324 + 3.10065I$ |
| $a = -0.50951 + 1.41374I$ | | |
| $b = -0.35726 + 1.39065I$ | | |
| $u = 1.251788 - 0.400798I$ | $-1.72544 - 2.47755I$ | $3.47157 - 4.71967I$ |
| $a = 0.209192 - 0.391098I$ | | |
| $b = 0.029748 - 1.211969I$ | | |
| $u = 1.251788 + 0.400798I$ | $-1.72544 + 2.47755I$ | $3.47157 + 4.71967I$ |
| $a = 0.209192 + 0.391098I$ | | |
| $b = 0.029748 + 1.211969I$ | | |

III. u-Polynomials

| Crossings | u-Polynomials at each crossings |
|-----------|--|
| c_1 | $(u^{16} - u^{15} + \dots + 3u + 1)(u^{86} + 28u^{84} + \dots + 558u + 43)$ |
| c_2 | $(u^{16} + 4u^{15} + \dots - 3u + 1)(u^{86} + 3u^{85} + \dots - 1252u + 181)$ |
| c_3 | $(u^{16} + 3u^{15} + \dots - 6u + 1)(u^{86} + 10u^{85} + \dots + 377377u + 57122)$ |
| c_4 | $(u^{16} + 2u^{15} + \dots - u + 1)(u^{86} + 9u^{85} + \dots + 6249u + 722)$ |
| c_5 | $(u^{16} + u^{15} + \dots - 3u + 1)(u^{86} + 28u^{84} + \dots + 558u + 43)$ |
| c_6 | $(u^{16} - 3u^{15} + \dots - 2u + 1)(u^{86} + 2u^{85} + \dots - 31u + 1)$ |
| c_7 | $(u^{16} + 3u^{15} + \dots - 4u + 3)(u^{86} + 2u^{85} + \dots - 15u + 1)$ |
| c_8 | $(u^{16} - 4u^{15} + \dots + 3u + 1)(u^{86} + 3u^{85} + \dots - 1252u + 181)$ |
| c_9 | $(u^{16} + u^{15} + \dots - 2u + 1)(u^{86} + 18u^{84} + \dots + 257661u + 27211)$ |
| c_{10} | $(u^{16} - 3u^{15} + \dots + 4u + 1)(u^{86} + 2u^{85} + \dots + 11u + 1)$ |
| c_{11} | $(u^{16} - 3u^{15} + \dots + 4u + 3)(u^{86} + 2u^{85} + \dots - 15u + 1)$ |

IV. Riley Polynomials

| Crossings | Riley Polynomials at each crossings |
|------------|---|
| c_1, c_5 | $(y^{16} + 7y^{15} + \dots + 9y + 1)(y^{86} + 56y^{85} + \dots + 192768y + 1849)$ |
| c_2 | $(y^{16} + 6y^{15} + \dots + 11y + 1)(y^{86} + 67y^{85} + \dots + 1561986y + 32761)$ |
| c_3 | $(y^{16} - 13y^{15} + \dots - 34y + 1)$ $(y^{86} - 40y^{85} + \dots - 106949549161y + 3262922884)$ |
| c_4 | $(y^{16} + 14y^{14} + \dots + 9y + 1)$ $(y^{86} + 21y^{85} + \dots + 18203155y + 521284)$ |
| c_6 | $(y^{16} + y^{15} + \dots - 8y + 1)(y^{86} + 2y^{85} + \dots - 173y + 1)$ |
| c_7 | $(y^{16} - 15y^{15} + \dots - 52y + 9)(y^{86} - 70y^{85} + \dots + 163y + 1)$ |
| c_8 | $(y^{16} + 6y^{15} + \dots + 11y + 1)(y^{86} + 67y^{85} + \dots + 1561986y + 32761)$ |
| c_9 | $(y^{16} - y^{15} + \dots + 8y + 1)$ $(y^{86} + 36y^{85} + \dots - 1107389665y + 740438521)$ |
| c_{10} | $(y^{16} - 11y^{15} + \dots + 6y + 1)(y^{86} - 18y^{85} + \dots - 43y + 1)$ |
| c_{11} | $(y^{16} - 15y^{15} + \dots - 52y + 9)(y^{86} - 70y^{85} + \dots + 163y + 1)$ |