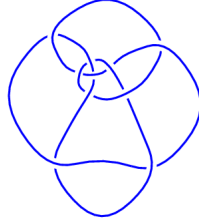
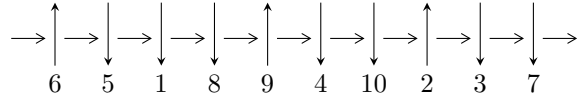


10₁₂₁ (K10a₉₀)

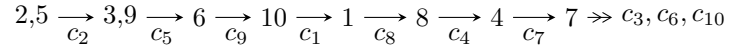


1

Arc Sequences



Solving Sequence



Representation Ideals

$$I = \bigcap_{i=1}^3 I_i^u$$

$$I_1^u = \langle u^{10} - 5u^9 + 12u^8 - 16u^7 + 12u^6 - 3u^5 - 3u^4 + 4u^3 - u^2 - u + 1, \\ u^9 - 5u^8 + 11u^7 - 12u^6 + 5u^5 + 3u^4 - 5u^3 + 3u^2 + b + u - 2, \\ 2u^9 - 9u^8 + 19u^7 - 21u^6 + 12u^5 - u^4 - 3u^3 + 3u^2 + a + u - 1 \rangle$$

$$I_2^u = \langle b^{44} + 3b^{43} + \dots - 14b + 1, 1.14181 \times 10^{88}u - 1.41282 \times 10^{88}b^{43} + \dots - 3.37078 \times 10^{89}b + 3.05314 \times 10^{88}, \\ - 4.08635 \times 10^{90}b^{43} - 1.16927 \times 10^{91}b^{42} + \dots + 3.61954 \times 10^{90}a - 6.71899 \times 10^{90} \rangle$$

$$I_3^u = \langle u^{23} + 16u^{22} + \dots - 10u - 4, \\ - 1260218947u^{22} - 19109508090u^{21} + \dots + 984316106b + 5089661734, \\ - 2544830867u^{22} - 38196855978u^{21} + \dots + 1968632212a + 17497959996 \rangle$$

There are 3 irreducible components with 77 representations.

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

$$I_1^u = \langle u^{10} - 5u^9 + \dots - u + 1, u^9 - 5u^8 + \dots + b - 2, 2u^9 - 9u^8 + \dots + a - 1 \rangle$$

I.

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

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

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

$$a_9 = \begin{pmatrix} -2u^9 + 9u^8 - 19u^7 + 21u^6 - 12u^5 + u^4 + 3u^3 - 3u^2 - u + 1 \\ -u^9 + 5u^8 - 11u^7 + 12u^6 - 5u^5 - 3u^4 + 5u^3 - 3u^2 - u + 2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -u^9 + 3u^8 - 4u^7 + u^6 + u^5 - 2u^3 + u^2 - 2u - 1 \\ -2u^9 + 8u^8 - 15u^7 + 13u^6 - 3u^5 - 5u^4 + 5u^3 - 3u^2 - u + 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -u^9 + 5u^8 - 12u^7 + 16u^6 - 13u^5 + 6u^4 - u^3 - 2u^2 + u \\ -u^9 + 4u^8 - 8u^7 + 8u^6 - 3u^5 - 3u^4 + 4u^3 - 2u^2 - u + 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 4u^9 - 18u^8 + 38u^7 - 42u^6 + 23u^5 - 9u^3 + 8u^2 + u - 3 \\ -u^8 + 3u^7 - 4u^6 + u^5 + 2u^4 - 3u^3 + 2u^2 - u - 2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -u^9 + 4u^8 - 8u^7 + 9u^6 - 7u^5 + 4u^4 - 2u^3 - 1 \\ -u^9 + 5u^8 - 11u^7 + 12u^6 - 5u^5 - 3u^4 + 5u^3 - 3u^2 - u + 2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} u^9 - 4u^8 + 7u^7 - 4u^6 - 4u^5 + 9u^4 - 7u^3 + 3u^2 + u - 1 \\ -u^8 + 4u^7 - 8u^6 + 8u^5 - 4u^4 + u^2 - 1 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^9 + 3u^8 - 4u^7 + u^6 + 2u^5 - 3u^4 + 2u^3 - 2u^2 - 2 \\ -u^9 + 4u^8 - 7u^7 + 5u^6 - 3u^4 + 2u^3 - u^2 - 2u + 1 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = $14u^9 - 60u^8 + 124u^7 - 133u^6 + 74u^5 - 2u^4 - 25u^3 + 27u^2 + 6u - 16$

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.561171 - 0.194255I$ $a = -0.531466 + 1.276611I$ $b = 0.546232 - 0.613157I$	$0.66134 + 7.13925I$	$-2.98492 - 4.64046I$
$u = -0.561171 + 0.194255I$ $a = -0.531466 - 1.276611I$ $b = 0.546232 + 0.613157I$	$0.66134 - 7.13925I$	$-2.98492 + 4.64046I$
$u = 0.117471 - 0.884570I$ $a = -0.748660 - 0.130004I$ $b = -0.202944 + 0.646971I$	$-2.84633 + 2.07393I$	$-9.25779 - 2.43239I$
$u = 0.117471 + 0.884570I$ $a = -0.748660 + 0.130004I$ $b = -0.202944 - 0.646971I$	$-2.84633 - 2.07393I$	$-9.25779 + 2.43239I$
$u = 0.689571 - 0.575966I$ $a = -0.12950 + 1.62825I$ $b = 0.84852 + 1.19738I$	$0.99844 + 4.62197I$	$-7.4943 - 13.1842I$
$u = 0.689571 + 0.575966I$ $a = -0.12950 - 1.62825I$ $b = 0.84852 - 1.19738I$	$0.99844 - 4.62197I$	$-7.4943 + 13.1842I$
$u = 1.08219 - 1.11471I$ $a = 0.150423 - 0.880176I$ $b = -0.818356 - 1.120194I$	$-1.44035 + 6.19794I$	$-4.57589 - 3.75444I$
$u = 1.08219 + 1.11471I$ $a = 0.150423 + 0.880176I$ $b = -0.818356 + 1.120194I$	$-1.44035 - 6.19794I$	$-4.57589 + 3.75444I$
$u = 1.171942 - 0.674004I$ $a = -0.240799 + 0.606453I$ $b = 0.126549 + 0.873027I$	$-2.30790 + 1.97177I$	$-10.18714 - 3.25987I$
$u = 1.171942 + 0.674004I$ $a = -0.240799 - 0.606453I$ $b = 0.126549 - 0.873027I$	$-2.30790 - 1.97177I$	$-10.18714 + 3.25987I$

II.

$$I_2^u = \langle b^{44} + 3b^{43} + \dots - 14b + 1, 1.14 \times 10^{88}u - 1.41 \times 10^{88}b^{43} + \dots - 3.37 \times 10^{89}b + 3.05 \times 10^{88}, -4.09 \times 10^{90}b^{43} - 1.17 \times 10^{91}b^{42} + \dots + 3.62 \times 10^{90}a - 6.72 \times 10^{90} \rangle$$

(i) Arc colorings

$$a_2 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0 \\ 1.23735b^{43} + 4.00109b^{42} + \dots + 29.5213b - 2.67395 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 1 \\ 0.412516b^{43} + 1.57188b^{42} + \dots + 9.23561b - 1.91939 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.12897b^{43} + 3.23045b^{42} + \dots - 6.74422b + 1.85631 \\ b \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 3.36479b^{43} + 11.6120b^{42} + \dots - 8.03924b + 1.65648 \\ 0.987803b^{43} + 3.51424b^{42} + \dots + 9.12468b - 0.911617 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 1.99768b^{43} + 6.07271b^{42} + \dots + 8.51188b + 0.785768 \\ 0.277402b^{43} + 1.36576b^{42} + \dots - 5.60792b - 0.490398 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 2.01353b^{43} + 5.54339b^{42} + \dots + 29.2789b + 1.43586 \\ 0.987803b^{43} + 3.51424b^{42} + \dots + 9.12468b - 1.91162 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 1.12897b^{43} + 3.23045b^{42} + \dots - 7.74422b + 1.85631 \\ b \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 3.74009b^{43} + 12.0247b^{42} + \dots + 35.5634b - 2.15723 \\ 1.11159b^{43} + 4.07521b^{42} + \dots + 6.31534b - 0.622567 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.993456b^{43} - 5.13950b^{42} + \dots + 24.6595b - 1.22098 \\ 1.68077b^{43} + 4.94233b^{42} + \dots + 41.8913b - 3.91323 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $-3.05779b^{43} - 14.3961b^{42} + \dots + 140.912b - 13.1336$

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.577598 - 0.283449I$ $a = -0.081013 - 0.913235I$ $b = -1.57832 - 1.34962I$	$0.11530 - 7.95431I$	$-9.1705 + 13.4876I$
$u = -0.577598 + 0.283449I$ $a = -0.081013 + 0.913235I$ $b = -1.57832 + 1.34962I$	$0.11530 + 7.95431I$	$-9.1705 - 13.4876I$
$u = 0.864248 - 0.407709I$ $a = -0.129704 - 0.797794I$ $b = -1.09220 - 1.32253I$	$-2.06894 + 4.27767I$	$-9.63582 - 8.52770I$
$u = 0.864248 + 0.407709I$ $a = -0.129704 + 0.797794I$ $b = -1.09220 + 1.32253I$	$-2.06894 - 4.27767I$	$-9.63582 + 8.52770I$
$u = 0.326966 - 0.916688I$ $a = -0.083576 - 0.118139I$ $b = -1.086021 - 0.677732I$	$2.98579 + 2.97085I$	$1.84059 - 2.76341I$
$u = 0.326966 + 0.916688I$ $a = -0.083576 + 0.118139I$ $b = -1.086021 + 0.677732I$	$2.98579 - 2.97085I$	$1.84059 + 2.76341I$
$u = 1.110197 - 0.862988I$ $a = 0.094059 - 0.812487I$ $b = -1.00987 - 1.23356I$	$-2.44783 + 4.73429I$	$-9.46762 - 3.38077I$
$u = 1.110197 + 0.862988I$ $a = 0.094059 + 0.812487I$ $b = -1.00987 + 1.23356I$	$-2.44783 - 4.73429I$	$-9.46762 + 3.38077I$
$u = 0.326966 - 0.916688I$ $a = 1.23128 - 1.31612I$ $b = -0.948517 - 0.378099I$	$2.98579 + 7.03062I$	$1.84059 - 9.69161I$
$u = 0.326966 + 0.916688I$ $a = 1.23128 + 1.31612I$ $b = -0.948517 + 0.378099I$	$2.98579 - 7.03062I$	$1.84059 + 9.69161I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.577598 + 0.283449I$ $a = 0.76538 - 1.71451I$ $b = -0.918479 - 0.926010I$	$0.11530 + 3.89454I$	$-9.17045 - 6.55945I$
$u = -0.577598 - 0.283449I$ $a = 0.76538 + 1.71451I$ $b = -0.918479 + 0.926010I$	$0.11530 - 3.89454I$	$-9.17045 + 6.55945I$
$u = 1.05941 - 1.17096I$ $a = 0.014454 - 0.953147I$ $b = -0.651229 - 1.243083I$	$-1.50728 + 7.24617I$	$-6.43603 - 12.47688I$
$u = 1.05941 + 1.17096I$ $a = 0.014454 + 0.953147I$ $b = -0.651229 + 1.243083I$	$-1.50728 - 7.24617I$	$-6.43603 + 12.47688I$
$u = 1.05941 - 1.17096I$ $a = 0.426989 - 0.526407I$ $b = -0.201428 - 0.560153I$	$-1.50728 + 3.18641I$	$-6.43603 - 5.54868I$
$u = 1.05941 + 1.17096I$ $a = 0.426989 + 0.526407I$ $b = -0.201428 + 0.560153I$	$-1.50728 - 3.18641I$	$-6.43603 + 5.54868I$
$u = -0.577598 + 0.283449I$ $a = -0.64749 - 1.92095I$ $b = -0.043897 - 1.207241I$	$0.11530 + 3.89454I$	$-9.17045 - 6.55945I$
$u = -0.577598 - 0.283449I$ $a = -0.64749 + 1.92095I$ $b = -0.043897 + 1.207241I$	$0.11530 - 3.89454I$	$-9.17045 + 6.55945I$
$u = -0.566454$ $a = 2.24127 - 2.50202I$ $b = -0.034953 - 0.721156I$	$-4.02369 + 2.02988I$	$-18.2613 - 3.4641I$
$u = -0.566454$ $a = 2.24127 + 2.50202I$ $b = -0.034953 + 0.721156I$	$-4.02369 - 2.02988I$	$-18.2613 + 3.4641I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.864248 + 0.407709I$ $a = -1.193505 - 0.275075I$ $b = 0.002110 - 0.500193I$	$-2.06894 - 0.21790I$	$-9.63582 + 1.59949I$
$u = 0.864248 - 0.407709I$ $a = -1.193505 + 0.275075I$ $b = 0.002110 + 0.500193I$	$-2.06894 + 0.21790I$	$-9.63582 - 1.59949I$
$u = 0.326966 - 0.916688I$ $a = -0.281007 + 1.284953I$ $b = 0.1356232 - 0.0379857I$	$2.98579 + 2.97085I$	$1.84059 - 2.76341I$
$u = 0.326966 + 0.916688I$ $a = -0.281007 - 1.284953I$ $b = 0.1356232 + 0.0379857I$	$2.98579 - 2.97085I$	$1.84059 + 2.76341I$
$u = 1.05941 + 1.17096I$ $a = -0.177470 - 0.332583I$ $b = 0.164043 - 1.057669I$	$-1.50728 - 3.18641I$	$-6.43603 + 5.54868I$
$u = 1.05941 - 1.17096I$ $a = -0.177470 + 0.332583I$ $b = 0.164043 + 1.057669I$	$-1.50728 + 3.18641I$	$-6.43603 - 5.54868I$
$u = 1.110197 + 0.862988I$ $a = -0.521303 - 0.385563I$ $b = 0.177376 - 0.645337I$	$-2.44783 - 0.67452I$	$-9.46762 - 3.54743I$
$u = 1.110197 - 0.862988I$ $a = -0.521303 + 0.385563I$ $b = 0.177376 + 0.645337I$	$-2.44783 + 0.67452I$	$-9.46762 + 3.54743I$
$u = -0.577598 - 0.283449I$ $a = -3.12633 - 0.80240I$ $b = 0.212063 - 0.550445I$	$0.11530 - 7.95431I$	$-9.1705 + 13.4876I$
$u = -0.577598 + 0.283449I$ $a = -3.12633 + 0.80240I$ $b = 0.212063 + 0.550445I$	$0.11530 + 7.95431I$	$-9.1705 - 13.4876I$

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.110197 - 0.862988I$		
$a = 0.182065 - 0.439757I$	$-2.44783 + 0.67452I$	$-9.46762 + 3.54743I$
$b = 0.246013 - 0.877929I$		
$u = 1.110197 + 0.862988I$		
$a = 0.182065 + 0.439757I$	$-2.44783 - 0.67452I$	$-9.46762 - 3.54743I$
$b = 0.246013 + 0.877929I$		
$u = 0.864248 + 0.407709I$		
$a = 0.44322 - 1.73936I$	$-2.06894 - 4.27767I$	$-9.63582 + 8.52770I$
$b = 0.437365 - 0.636610I$		
$u = 0.864248 - 0.407709I$		
$a = 0.44322 + 1.73936I$	$-2.06894 + 4.27767I$	$-9.63582 - 8.52770I$
$b = 0.437365 + 0.636610I$		
$u = 1.110197 + 0.862988I$		
$a = 0.028627 - 1.133373I$	$-2.44783 - 4.73429I$	$-9.46762 + 3.38077I$
$b = 0.596743 - 0.983192I$		
$u = 1.110197 - 0.862988I$		
$a = 0.028627 + 1.133373I$	$-2.44783 + 4.73429I$	$-9.46762 - 3.38077I$
$b = 0.596743 + 0.983192I$		
$u = 0.326966 + 0.916688I$		
$a = -0.038498 - 1.048453I$	$2.98579 - 7.03062I$	$1.84059 + 9.69161I$
$b = 0.80389 - 1.55903I$		
$u = 0.326966 - 0.916688I$		
$a = -0.038498 + 1.048453I$	$2.98579 + 7.03062I$	$1.84059 - 9.69161I$
$b = 0.80389 + 1.55903I$		
$u = 0.864248 - 0.407709I$		
$a = 0.221332 - 0.474348I$	$-2.06894 + 0.21790I$	$-9.63582 - 1.59949I$
$b = 0.919334 - 0.724336I$		
$u = 0.864248 + 0.407709I$		
$a = 0.221332 + 0.474348I$	$-2.06894 - 0.21790I$	$-9.63582 + 1.59949I$
$b = 0.919334 + 0.724336I$		

Solution to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.05941 + 1.17096I$ $a = -0.307069 - 0.833969I$ $b = 1.10078 - 1.02670I$	$-1.50728 - 7.24617I$	$-6.43603 + 12.47688I$
$u = 1.05941 - 1.17096I$ $a = -0.307069 + 0.833969I$ $b = 1.10078 + 1.02670I$	$-1.50728 + 7.24617I$	$-6.43603 - 12.47688I$
$u = -0.566454$ $a = -0.061706 - 1.273107I$ $b = 1.26958 - 1.41728I$	$-4.02369 + 2.02988I$	$-18.2613 - 3.4641I$
$u = -0.566454$ $a = -0.061706 + 1.273107I$ $b = 1.26958 + 1.41728I$	$-4.02369 - 2.02988I$	$-18.2613 + 3.4641I$

III.

$$I_3^u = \langle u^{23} + 16u^{22} + \dots - 10u - 4, -1.26 \times 10^9 u^{22} - 1.91 \times 10^{10} u^{21} + \dots + 9.84 \times 10^8 b + 5.09 \times 10^9, -2.54 \times 10^9 u^{22} - 3.82 \times 10^{10} u^{21} + \dots + 1.97 \times 10^9 a + 1.75 \times 10^{10} \rangle$$

(i) Arc colorings

$$\begin{aligned} a_2 &= \begin{pmatrix} 1 \\ 0 \end{pmatrix} \\ a_5 &= \begin{pmatrix} 0 \\ u \end{pmatrix} \\ a_3 &= \begin{pmatrix} 1 \\ u^2 \end{pmatrix} \\ a_9 &= \begin{pmatrix} 1.29269u^{22} + 19.4027u^{21} + \dots - 9.50831u - 8.88838 \\ 1.28030u^{22} + 19.4140u^{21} + \dots - 4.03851u - 5.17076 \end{pmatrix} \\ a_6 &= \begin{pmatrix} 0.319249u^{22} + 5.03061u^{21} + \dots + 6.76619u - 4.03209 \\ 0.0773747u^{22} + 0.861665u^{21} + \dots + 1.83960u - 1.27700 \end{pmatrix} \\ a_{10} &= \begin{pmatrix} 1.08318u^{22} + 16.7864u^{21} + \dots - 13.1020u - 8.83882 \\ -0.0242790u^{22} - 0.125186u^{21} + \dots + 2.48170u - 2.22746 \end{pmatrix} \\ a_1 &= \begin{pmatrix} 1.02071u^{22} + 13.6913u^{21} + \dots - 4.25396u + 6.74097 \\ 2.26372u^{22} + 33.8581u^{21} + \dots - 16.4513u - 3.77333 \end{pmatrix} \\ a_8 &= \begin{pmatrix} 0.0123908u^{22} - 0.0112566u^{21} + \dots - 5.46979u - 3.71763 \\ 1.28030u^{22} + 19.4140u^{21} + \dots - 4.03851u - 5.17076 \end{pmatrix} \\ a_4 &= \begin{pmatrix} 0.540830u^{22} + 8.50923u^{21} + \dots + 5.59024u - 1.78760 \\ -0.298956u^{22} - 4.34029u^{21} + \dots + 1.33635u - 0.967496 \end{pmatrix} \\ a_7 &= \begin{pmatrix} -0.221415u^{22} - 3.51881u^{21} + \dots - 1.62252u - 3.99396 \\ 0.519049u^{22} + 7.71688u^{21} + \dots + 1.74955u - 3.39079 \end{pmatrix} \end{aligned}$$

(ii) Obstruction class = -1

$$(iii) \text{ Cusp Shapes} = -\frac{3396085143}{492158053} u^{22} - \frac{53190862554}{492158053} u^{21} + \dots + \frac{29461471174}{492158053} u + \frac{13339530290}{492158053}$$

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.45365 - 1.27820I$		
$a = -0.325009 - 0.193081I$	$-0.52992 + 8.08521I$	$-9.33582 - 10.31624I$
$b = -0.225654 - 0.696100I$		
$u = -1.45365 + 1.27820I$		
$a = -0.325009 + 0.193081I$	$-0.52992 - 8.08521I$	$-9.33582 + 10.31624I$
$b = -0.225654 + 0.696100I$		
$u = -1.37621 - 1.06752I$		
$a = 0.189943 - 0.547859I$	$3.21418 - 8.47524I$	$0.10617 + 9.70003I$
$b = 0.846254 - 0.551200I$		
$u = -1.37621 + 1.06752I$		
$a = 0.189943 + 0.547859I$	$3.21418 + 8.47524I$	$0.10617 - 9.70003I$
$b = 0.846254 + 0.551200I$		
$u = -1.14560 - 0.90839I$		
$a = 0.060381 - 1.065802I$	$-4.47926 - 10.82164I$	$-7.18200 + 7.95225I$
$b = 1.03734 - 1.16613I$		
$u = -1.14560 + 0.90839I$		
$a = 0.060381 + 1.065802I$	$-4.47926 + 10.82164I$	$-7.18200 - 7.95225I$
$b = 1.03734 + 1.16613I$		
$u = -1.14496 - 1.09496I$		
$a = 0.038158 + 1.004394I$	$-0.6004 - 16.9749I$	$-3.92962 + 9.34400I$
$b = -1.05609 + 1.19178I$		
$u = -1.14496 + 1.09496I$		
$a = 0.038158 - 1.004394I$	$-0.6004 + 16.9749I$	$-3.92962 - 9.34400I$
$b = -1.05609 - 1.19178I$		
$u = -1.119711 - 0.513718I$		
$a = -0.452909 + 0.773390I$	$0.95729 - 2.04351I$	$2.51837 + 2.36281I$
$b = -0.904431 + 0.633306I$		
$u = -1.119711 + 0.513718I$		
$a = -0.452909 - 0.773390I$	$0.95729 + 2.04351I$	$2.51837 - 2.36281I$
$b = -0.904431 - 0.633306I$		

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.84300 - 1.61883I$		
$a = 0.299587 + 0.003010I$	$-2.90076 + 2.91786I$	$-11.0818 - 11.0469I$
$b = 0.247680 + 0.487517I$		
$u = -0.84300 + 1.61883I$		
$a = 0.299587 - 0.003010I$	$-2.90076 - 2.91786I$	$-11.0818 + 11.0469I$
$b = 0.247680 - 0.487517I$		
$u = -0.799030 - 0.571303I$		
$a = -0.12013 + 1.57743I$	$1.35281 - 4.50771I$	$12.5679 + 8.0453I$
$b = -0.99718 + 1.19178I$		
$u = -0.799030 + 0.571303I$		
$a = -0.12013 - 1.57743I$	$1.35281 + 4.50771I$	$12.5679 - 8.0453I$
$b = -0.99718 - 1.19178I$		
$u = -0.587912 - 0.172198I$		
$a = -0.88228 + 1.27862I$	$1.10859 - 1.69807I$	$0.99491 + 2.62569I$
$b = -0.738880 + 0.599789I$		
$u = -0.587912 + 0.172198I$		
$a = -0.88228 - 1.27862I$	$1.10859 + 1.69807I$	$0.99491 - 2.62569I$
$b = -0.738880 - 0.599789I$		
$u = -0.517217 - 1.045825I$		
$a = -0.047708 - 0.890847I$	$6.24675 + 0.93599I$	$3.26085 - 0.04991I$
$b = 0.906994 - 0.510655I$		
$u = -0.517217 + 1.045825I$		
$a = -0.047708 + 0.890847I$	$6.24675 - 0.93599I$	$3.26085 + 0.04991I$
$b = 0.906994 + 0.510655I$		
$u = 0.257593 - 0.139438I$		
$a = -3.87302 - 0.15811I$	$1.57996 - 1.95049I$	$0.00371 + 3.34610I$
$b = 1.019708 - 0.499316I$		
$u = 0.257593 + 0.139438I$		
$a = -3.87302 + 0.15811I$	$1.57996 + 1.95049I$	$0.00371 - 3.34610I$
$b = 1.019708 + 0.499316I$		

Solution to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.267486 - 0.510215I$	$2.14619 + 2.15516I$	$1.26567 - 4.32711I$
$a = 0.57156 + 1.32428I$		
$b = -0.828550 - 0.062607I$		
$u = 0.267486 + 0.510215I$	$2.14619 - 2.15516I$	$1.26567 + 4.32711I$
$a = 0.57156 - 1.32428I$		
$b = -0.828550 + 0.062607I$		
$u = 0.924432$	-1.38648	-7.37674
$a = -0.417135$		
$b = 0.385613$		

IV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u^2 + u + 1)^{22}(u^{10} + 4u^8 + \dots - 2u + 1)$ $(u^{23} - 19u^{22} + \dots - 18432u + 2048)$
c_2	$(u^{10} - 5u^9 + 12u^8 - 16u^7 + 12u^6 - 3u^5 - 3u^4 + 4u^3 - u^2 - u + 1)$ $(u^{11} + 5u^{10} + 12u^9 + 15u^8 + 8u^7 - 4u^6 - 8u^5 - 3u^4 + 3u^3 + 3u^2 - 1)^4$ $(u^{23} - 16u^{22} + \dots - 10u + 4)$
c_3, c_6	$(u^{10} + 3u^9 + 3u^8 - u^7 - u^6 + 7u^5 + 11u^4 + 3u^3 - 3u^2 - u + 1)$ $(u^{23} + u^{22} + \dots + 2u + 1)(u^{44} + u^{43} + \dots - 8u + 1)$
c_4	$(u^{10} + u^9 - u^8 - 2u^7 + 3u^6 - 2u^4 - u^3 + 5u^2 - 4u + 1)$ $(u^{23} - u^{22} + \dots + u - 1)(u^{44} + u^{43} + \dots + 918u + 289)$
c_5, c_8	$(u^{10} + u^9 + 3u^8 + 2u^7 + 7u^6 + 5u^5 + 8u^4 + 4u^3 + 4u^2 + u + 1)$ $(u^{23} + u^{22} + \dots + 2u - 1)(u^{44} + 3u^{43} + \dots - 14u + 1)$
c_7	$(u^{10} - 3u^9 + 9u^8 - 16u^7 + 24u^6 - 27u^5 + 24u^4 - 18u^3 + 10u^2 - 4u + 1)$ $(1 + 2u + 5u^2 + 9u^3 + 15u^4 + 18u^5 + 20u^6 + 18u^7 + 13u^8 + 8u^9 + 3u^{10} + u^{11})^4$ $(u^{23} - 10u^{22} + \dots - 108u + 16)$
c_9	$(u^{10} + u^9 - u^8 - 2u^7 + 3u^6 - 2u^4 - u^3 + 5u^2 - 4u + 1)$ $(u^{23} - u^{22} + \dots + u - 1)(u^{44} + u^{43} + \dots + 918u + 289)$
c_{10}	$(u^{10} + 3u^9 + 9u^8 + 16u^7 + 24u^6 + 27u^5 + 24u^4 + 18u^3 + 10u^2 + 4u + 1)$ $(1 + 2u + 5u^2 + 9u^3 + 15u^4 + 18u^5 + 20u^6 + 18u^7 + 13u^8 + 8u^9 + 3u^{10} + u^{11})^4$ $(u^{23} - 10u^{22} + \dots - 108u + 16)$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1	$(y^{10} + 8y^9 + \dots + 4y + 1)(y^{23} + 9y^{22} + \dots + 2097152y - 4194304)$ $(y^{44} + 22y^{43} + \dots + 22y + 1)$
c_2	$(y^{10} - y^9 + 8y^8 - 4y^7 + 14y^6 + 15y^5 + y^4 + 8y^3 + 3y^2 - 3y + 1)$ $(-1 + 6y - 15y^2 + 19y^3 - 3y^4 + 8y^5 - 12y^6 + 28y^7 - 9y^8 + 10y^9 - y^{10} + y^{11})^4$ $(y^{23} - 2y^{22} + \dots + 252y - 16)$
c_3	$(y^{10} - 3y^9 + \dots - 7y + 1)(y^{23} + 9y^{22} + \dots - 16y - 1)$ $(y^{44} - 9y^{43} + \dots - 8y + 1)$
c_4	$(y^{10} - 3y^9 + \dots - 6y + 1)(y^{23} - 7y^{22} + \dots - y - 1)$ $(y^{44} - 13y^{43} + \dots - 899368y + 83521)$
c_5, c_8	$(y^{10} + 5y^9 + \dots + 7y + 1)(y^{23} - 3y^{22} + \dots + 6y - 1)$ $(y^{44} + 15y^{43} + \dots - 56y + 1)$
c_6	$(y^{10} - 3y^9 + \dots - 7y + 1)(y^{23} + 9y^{22} + \dots - 16y - 1)$ $(y^{44} - 9y^{43} + \dots - 8y + 1)$
c_7, c_{10}	$(y^{10} + 9y^9 + 33y^8 + 62y^7 + 56y^6 + 5y^5 - 26y^4 - 12y^3 + 4y^2 + 4y + 1)$ $(-1 - 6y - 19y^2 - 37y^3 - 55y^4 - 56y^5 - 24y^6 + 20y^7 + 35y^8 + 22y^9 + 7y^{10} + y^{11})^4$ $(y^{23} + 16y^{22} + \dots - 1360y - 256)$
c_9	$(y^{10} - 3y^9 + \dots - 6y + 1)(y^{23} - 7y^{22} + \dots - y - 1)$ $(y^{44} - 13y^{43} + \dots - 899368y + 83521)$