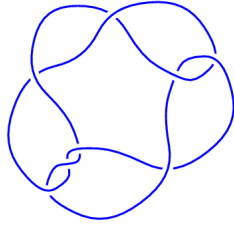
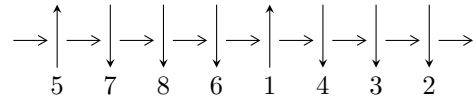


8<sub>6</sub> (K8a<sub>10</sub>)

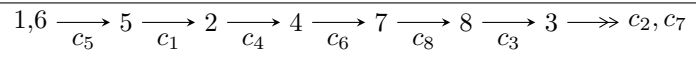


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

$$I_1^u = \langle u^{11} + u^{10} + 2u^9 + u^8 + 4u^7 + 2u^6 + 4u^5 + u^4 + 3u^3 - u^2 - 1 \rangle$$

There are 1 irreducible components with 11 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>”

$$\text{I. } I_1^u = \langle u^{11} + u^{10} + 2u^9 + u^8 + 4u^7 + 2u^6 + 4u^5 + u^4 + 3u^3 - u^2 - 1 \rangle$$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -u^3 \\ u^5 + u^3 + u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} u^4 + u^2 + 1 \\ -u^4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -u^{10} - u^8 - 2u^6 - u^4 + u^2 + 1 \\ u^{10} + u^9 + u^8 + 2u^7 + 2u^6 + 3u^5 + u^4 + 4u^3 - u^2 + u - 1 \end{pmatrix}$$

(ii) Obstruction class = -1

$$\text{(iii) Cusp Shapes} = -4u^{10} - 4u^8 + 4u^7 - 12u^6 + 4u^5 - 8u^4 + 8u^3 - 8u^2 + 8u - 6$$

(iv) Complex Volumes and Cusp Shapes

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.838197 - 0.796762I$	$1.97705 - 1.41699I$	$-3.20869 + 0.63373I$
$u = -0.838197 + 0.796762I$	$1.97705 + 1.41699I$	$-3.20869 - 0.63373I$
$u = -0.783273 - 0.973706I$	$1.43178 + 7.47524I$	$-4.22908 - 5.55460I$
$u = -0.783273 + 0.973706I$	$1.43178 - 7.47524I$	$-4.22908 + 5.55460I$
$u = -0.267638 - 0.666716I$	$-0.304732 + 1.131298I$	$-4.01220 - 6.05785I$
$u = -0.267638 + 0.666716I$	$-0.304732 - 1.131298I$	$-4.01220 + 6.05785I$
$u = 0.274458 - 0.988557I$	$-5.18162 - 2.94672I$	$-9.79937 + 4.11787I$
$u = 0.274458 + 0.988557I$	$-5.18162 + 2.94672I$	$-9.79937 - 4.11787I$
$u = 0.602288$	$-2.19537$	$-3.62374$
$u = 0.813506 - 0.895281I$	$5.64260 - 3.04152I$	$0.06121 + 2.82242I$
$u = 0.813506 + 0.895281I$	$5.64260 + 3.04152I$	$0.06121 - 2.82242I$

## II. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1, c_5$	$(u^{11} + u^{10} + 2u^9 + u^8 + 4u^7 + 2u^6 + 4u^5 + u^4 + 3u^3 - u^2 - 1)$
$c_2, c_3, c_7$	$(u^{11} + u^{10} - 4u^9 - 3u^8 + 6u^7 + 2u^6 - 2u^5 + 3u^4 - 3u^3 - 3u^2 + 2u - 1)$
$c_4, c_6, c_8$	$(u^{11} + 3u^{10} + \dots - 2u - 1)$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1, c_5$	$(y^{11} + 3y^{10} + \dots - 2y - 1)$
$c_2, c_3, c_7$	$(y^{11} - 9y^{10} + \dots - 2y - 1)$
$c_4, c_6, c_8$	$(y^{11} + 11y^{10} + \dots + 6y - 1)$