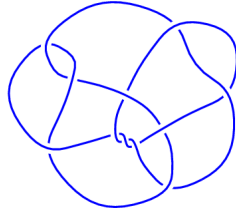
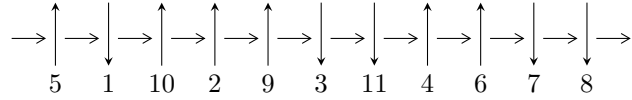


11a<sub>28</sub> (K11a<sub>28</sub>)

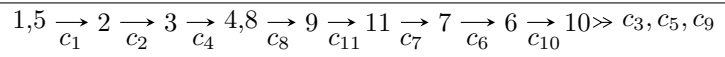


1

**Arc Sequences**



**Solving Sequence**



**Representation Ideals**

$$I = I_1^u$$

$$I_1^u = \langle u^{60} - u^{59} + \dots + 2u + 1, 7.84555 \times 10^{60}u^{59} - 6.43675 \times 10^{60}u^{58} + \dots + 7.39081 \times 10^{60}b - 1.10746 \times 10^{61}, \\ - 1.38500 \times 10^{61}u^{59} + 4.52352 \times 10^{60}u^{58} + \dots + 7.39081 \times 10^{60}a - 2.10503 \times 10^{61} \rangle$$

There are 1 irreducible components with 60 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>”

$$I_1^u = \langle u^{60} - u^{59} + \dots + 2u + 1, \overset{\text{I.}}{7.85 \times 10^{60} u^{59} - 6.44 \times 10^{60} u^{58} + \dots + 7.39 \times 10^{60} b - 1.11 \times 10^{61}}, -1.38 \times 10^{61} u^{59} + 4.52 \times 10^{60} u^{58} + \dots + 7.39 \times 10^{60} a - 2.11 \times 10^{61} \rangle$$

(i) Arc colorings

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

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

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

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

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

$$a_8 = \begin{pmatrix} 1.87394u^{59} - 0.612047u^{58} + \dots + 11.2165u + 2.84817 \\ -1.06153u^{59} + 0.870914u^{58} + \dots - 1.16026u + 1.49843 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1.80124u^{59} - 0.688293u^{58} + \dots + 8.96602u + 2.18126 \\ -0.838467u^{59} + 0.794799u^{58} + \dots + 0.719619u + 2.01640 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -3.35064u^{59} + 1.59006u^{58} + \dots - 9.14807u - 0.107071 \\ 1.40877u^{59} - 1.60597u^{58} + \dots - 2.57774u - 3.41256 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -3.73764u^{59} + 4.15854u^{58} + \dots + 4.26837u + 4.76862 \\ 0.100345u^{59} - 0.728775u^{58} + \dots - 6.83614u - 3.01172 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -2.86120u^{59} + 2.94876u^{58} + \dots + 1.38730u + 2.37762 \\ 0.147559u^{59} - 0.855835u^{58} + \dots - 6.73885u - 3.42491 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.73827u^{59} - 0.742110u^{58} + \dots - 17.5597u - 5.34256 \\ 2.48038u^{59} - 2.38623u^{58} + \dots + 1.86601u - 1.73827 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1.73827u^{59} - 0.742110u^{58} + \dots - 17.5597u - 5.34256 \\ 2.48038u^{59} - 2.38623u^{58} + \dots + 1.86601u - 1.73827 \end{pmatrix}$$

(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
$u = -1.14561$ $a = 0.147831$ $b = -1.27084$	1.61104	7.22734
$u = -1.073448 - 0.813202I$ $a = -0.295810 + 0.557625I$ $b = 1.310499 - 0.080285I$	$0.72651 + 3.69060I$	$5.47549 - 5.38384I$
$u = -1.073448 + 0.813202I$ $a = -0.295810 - 0.557625I$ $b = 1.310499 + 0.080285I$	$0.72651 - 3.69060I$	$5.47549 + 5.38384I$
$u = -0.949109 - 0.482501I$ $a = 0.052097 - 0.676629I$ $b = -0.058164 + 0.491656I$	$4.80170 + 1.71569I$	$12.12772 - 3.69255I$
$u = -0.949109 + 0.482501I$ $a = 0.052097 + 0.676629I$ $b = -0.058164 - 0.491656I$	$4.80170 - 1.71569I$	$12.12772 + 3.69255I$
$u = -0.728287 - 1.101947I$ $a = 0.213717 + 0.670278I$ $b = 0.224433 - 0.448869I$	$2.95363 + 4.39756I$	$7.00202 - 8.96362I$
$u = -0.728287 + 1.101947I$ $a = 0.213717 - 0.670278I$ $b = 0.224433 + 0.448869I$	$2.95363 - 4.39756I$	$7.00202 + 8.96362I$
$u = -0.69338 - 1.30915I$ $a = -0.435442 - 1.071891I$ $b = -1.389382 + 0.126415I$	$-2.17172 + 6.43280I$	$1.18055 - 8.04176I$
$u = -0.69338 + 1.30915I$ $a = -0.435442 + 1.071891I$ $b = -1.389382 - 0.126415I$	$-2.17172 - 6.43280I$	$1.18055 + 8.04176I$
$u = -0.683823 - 0.767010I$ $a = 1.49727 - 0.71206I$ $b = -1.349122 + 0.039607I$	$-3.47046 + 2.59110I$	$-5.81433 - 4.79126I$

Solution to $I_1^\mu$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.683823 + 0.767010I$ $a = 1.49727 + 0.71206I$ $b = -1.349122 - 0.039607I$	$-3.47046 - 2.59110I$	$-5.81433 + 4.79126I$
$u = -0.595998 - 0.876727I$ $a = 1.40548 - 0.77186I$ $b = 0.350200 + 0.158260I$	$2.11725 + 2.35876I$	$-9.10328 + 7.61988I$
$u = -0.595998 + 0.876727I$ $a = 1.40548 + 0.77186I$ $b = 0.350200 - 0.158260I$	$2.11725 - 2.35876I$	$-9.10328 - 7.61988I$
$u = -0.507009 - 0.872073I$ $a = 5.07854 - 13.11452I$ $b = -1.407843 + 0.014691I$	$-3.27672 + 2.05815I$	$-44.3489 + 118.4627I$
$u = -0.507009 + 0.872073I$ $a = 5.07854 + 13.11452I$ $b = -1.407843 - 0.014691I$	$-3.27672 - 2.05815I$	$-44.3489 - 118.4627I$
$u = -0.505117 - 0.952086I$ $a = -0.698662 - 0.753926I$ $b = -0.246546 + 0.282002I$	$-0.19554 + 2.59737I$	$1.80279 - 1.62726I$
$u = -0.505117 + 0.952086I$ $a = -0.698662 + 0.753926I$ $b = -0.246546 - 0.282002I$	$-0.19554 - 2.59737I$	$1.80279 + 1.62726I$
$u = -0.503259 - 1.119749I$ $a = 0.98583 + 1.70039I$ $b = 1.41880 - 0.09036I$	$-5.60317 + 3.97257I$	$-5.60547 - 3.32374I$
$u = -0.503259 + 1.119749I$ $a = 0.98583 - 1.70039I$ $b = 1.41880 + 0.09036I$	$-5.60317 - 3.97257I$	$-5.60547 + 3.32374I$
$u = -0.462038$ $a = -1.93742$ $b = -0.511763$	$2.63603$	$0.0801046$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.431817 - 0.730337I$ $a = -0.497496 + 1.129928I$ $b = -0.026377 - 0.398328I$	$0.55804 + 1.39773I$	$4.97891 - 5.04482I$
$u = -0.431817 + 0.730337I$ $a = -0.497496 - 1.129928I$ $b = -0.026377 + 0.398328I$	$0.55804 - 1.39773I$	$4.97891 + 5.04482I$
$u = -0.287455 - 0.157082I$ $a = 1.23091 - 1.58196I$ $b = 1.325720 - 0.012392I$	$-3.09648 + 0.01865I$	$-2.15658 + 0.53019I$
$u = -0.287455 + 0.157082I$ $a = 1.23091 + 1.58196I$ $b = 1.325720 + 0.012392I$	$-3.09648 - 0.01865I$	$-2.15658 - 0.53019I$
$u = -0.095351 - 1.174259I$ $a = -0.116749 - 0.127150I$ $b = -0.529233 + 0.441086I$	$-1.15016 + 4.52322I$	$-1.58408 - 7.91740I$
$u = -0.095351 + 1.174259I$ $a = -0.116749 + 0.127150I$ $b = -0.529233 - 0.441086I$	$-1.15016 - 4.52322I$	$-1.58408 + 7.91740I$
$u = 0.002505 - 1.373771I$ $a = 0.944353 + 0.196898I$ $b = 1.49614 - 0.15819I$	$-7.75326 + 6.77334I$	$-3.88267 - 5.97766I$
$u = 0.002505 + 1.373771I$ $a = 0.944353 - 0.196898I$ $b = 1.49614 + 0.15819I$	$-7.75326 - 6.77334I$	$-3.88267 + 5.97766I$
$u = 0.020451 - 0.666218I$ $a = -0.922185 + 1.016624I$ $b = -0.019258 - 0.599596I$	$0.288784 + 1.376442I$	$1.36514 - 4.13021I$
$u = 0.020451 + 0.666218I$ $a = -0.922185 - 1.016624I$ $b = -0.019258 + 0.599596I$	$0.288784 - 1.376442I$	$1.36514 + 4.13021I$

Solution to $I_1^\mu$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.158901 - 1.194155I$ $a = -0.951954 + 0.254959I$ $b = -1.54271 + 0.14787I$	$-10.59539 + 2.29159I$	$-8.03112 - 0.82729I$
$u = 0.158901 + 1.194155I$ $a = -0.951954 - 0.254959I$ $b = -1.54271 - 0.14787I$	$-10.59539 - 2.29159I$	$-8.03112 + 0.82729I$
$u = 0.217249 - 0.560610I$ $a = -1.16682 - 1.09218I$ $b = 1.201326 - 0.191717I$	$-2.92701 + 0.02185I$	$-2.76361 - 1.57896I$
$u = 0.217249 + 0.560610I$ $a = -1.16682 + 1.09218I$ $b = 1.201326 + 0.191717I$	$-2.92701 - 0.02185I$	$-2.76361 + 1.57896I$
$u = 0.234074 - 0.863478I$ $a = -0.476733 - 0.372342I$ $b = 0.911823 - 0.442516I$	$-2.94476 + 0.12365I$	$-6.35156 - 2.56893I$
$u = 0.234074 + 0.863478I$ $a = -0.476733 + 0.372342I$ $b = 0.911823 + 0.442516I$	$-2.94476 - 0.12365I$	$-6.35156 + 2.56893I$
$u = 0.413007 - 0.917472I$ $a = 0.216848 - 1.189999I$ $b = 1.72565 - 0.13500I$	$-4.67108 - 1.62217I$	$-12.48743 + 0.70918I$
$u = 0.413007 + 0.917472I$ $a = 0.216848 + 1.189999I$ $b = 1.72565 + 0.13500I$	$-4.67108 + 1.62217I$	$-12.48743 - 0.70918I$
$u = 0.421287 - 0.477539I$ $a = -0.90273 + 1.23587I$ $b = 0.240498 - 0.711477I$	$0.18899 + 1.45187I$	$1.34936 - 5.34755I$
$u = 0.421287 + 0.477539I$ $a = -0.90273 - 1.23587I$ $b = 0.240498 + 0.711477I$	$0.18899 - 1.45187I$	$1.34936 + 5.34755I$

Solution to $I_1^\mu$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.488226 - 0.968993I$ $a = 0.24966 - 2.06773I$ $b = 1.52138 + 0.44760I$	$-4.06241 - 3.68110I$	$-7.95874 + 9.64699I$
$u = 0.488226 + 0.968993I$ $a = 0.24966 + 2.06773I$ $b = 1.52138 - 0.44760I$	$-4.06241 + 3.68110I$	$-7.95874 - 9.64699I$
$u = 0.534922 - 0.997657I$ $a = 0.72112 - 1.37572I$ $b = 0.481557 + 0.943096I$	$-1.19130 - 5.66306I$	$-2.72432 + 10.76071I$
$u = 0.534922 + 0.997657I$ $a = 0.72112 + 1.37572I$ $b = 0.481557 - 0.943096I$	$-1.19130 + 5.66306I$	$-2.72432 - 10.76071I$
$u = 0.593897 - 1.112728I$ $a = -0.29722 + 1.95342I$ $b = -1.52921 - 0.32206I$	$-7.70682 - 10.17216I$	$-4.40393 + 7.43583I$
$u = 0.593897 + 1.112728I$ $a = -0.29722 - 1.95342I$ $b = -1.52921 + 0.32206I$	$-7.70682 + 10.17216I$	$-4.40393 - 7.43583I$
$u = 0.618276 - 0.995264I$ $a = 0.675732 - 0.527141I$ $b = -0.617210 + 0.869107I$	$3.47399 - 6.14744I$	$2.94126 + 7.00719I$
$u = 0.618276 + 0.995264I$ $a = 0.675732 + 0.527141I$ $b = -0.617210 - 0.869107I$	$3.47399 + 6.14744I$	$2.94126 - 7.00719I$
$u = 0.671385 - 1.084146I$ $a = -0.56682 + 1.31384I$ $b = -0.533782 - 0.834528I$	$3.66250 - 11.73974I$	$2.45717 + 9.07508I$
$u = 0.671385 + 1.084146I$ $a = -0.56682 - 1.31384I$ $b = -0.533782 + 0.834528I$	$3.66250 + 11.73974I$	$2.45717 - 9.07508I$

Solution to $I_1^u$	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.682605 - 1.157142I$		
$a = 0.30554 - 1.88422I$	$-3.0641 - 15.8799I$	$-0.92775 + 8.64946I$
$b = 1.53838 + 0.29681I$		
$u = 0.682605 + 1.157142I$		
$a = 0.30554 + 1.88422I$	$-3.0641 + 15.8799I$	$-0.92775 - 8.64946I$
$b = 1.53838 - 0.29681I$		
$u = 0.683723 - 0.624273I$		
$a = -0.23665 + 1.63178I$	$4.58804 + 1.10123I$	$5.38527 - 0.53488I$
$b = -0.698160 - 0.696499I$		
$u = 0.683723 + 0.624273I$		
$a = -0.23665 - 1.63178I$	$4.58804 - 1.10123I$	$5.38527 + 0.53488I$
$b = -0.698160 + 0.696499I$		
$u = 0.787431 - 0.363451I$		
$a = 1.072749 - 0.554781I$	$-5.51717 + 5.00817I$	$-2.18154 - 3.53465I$
$b = -1.46251 + 0.26342I$		
$u = 0.787431 + 0.363451I$		
$a = 1.072749 + 0.554781I$	$-5.51717 - 5.00817I$	$-2.18154 + 3.53465I$
$b = -1.46251 - 0.26342I$		
$u = 0.858242 - 0.533803I$		
$a = 0.536983 - 1.085616I$	$5.33401 + 6.06206I$	$5.25486 - 4.79805I$
$b = -0.435894 + 0.774361I$		
$u = 0.858242 + 0.533803I$		
$a = 0.536983 + 1.085616I$	$5.33401 - 6.06206I$	$5.25486 + 4.79805I$
$b = -0.435894 - 0.774361I$		
$u = 0.971698 - 0.453967I$		
$a = -0.726756 + 0.554466I$	$-0.89788 + 9.86974I$	$1.35103 - 5.07402I$
$b = 1.49031 - 0.27633I$		
$u = 0.971698 + 0.453967I$		
$a = -0.726756 - 0.554466I$	$-0.89788 - 9.86974I$	$1.35103 + 5.07402I$
$b = 1.49031 + 0.27633I$		



## II. u-Polynomials

Crossings	u-Polynomials at each crossings
$c_1, c_4$	$(u^{60} + u^{59} + \dots - 2u + 1)$
$c_2$	$(u^{60} + 25u^{59} + \dots + 6u + 1)$
$c_3$	$(u^{60} + 3u^{59} + \dots + 4u + 1)$
$c_5, c_9$	$(u^{60} + u^{59} + \dots + 5u^2 + 1)$
$c_6$	$(u^{60} + 13u^{59} + \dots + 46u - 1)$
$c_7, c_{10}, c_{11}$	$(u^{60} + 5u^{59} + \dots + 5u^2 + 1)$
$c_8$	$(u^{60} + 17u^{59} + \dots + 288u + 79)$

### III. Riley Polynomials

Crossings	Riley Polynomials at each crossings
$c_1, c_4$	$(y^{60} + 25y^{59} + \dots + 6y + 1)$
$c_2$	$(y^{60} + 21y^{59} + \dots + 62y + 1)$
$c_3$	$(y^{60} + 5y^{59} + \dots + 30y + 1)$
$c_5$	$(y^{60} - 43y^{59} + \dots + 10y + 1)$
$c_6$	$(y^{60} + 109y^{59} + \dots - 2526y + 1)$
$c_7$	$(y^{60} - 59y^{59} + \dots + 10y + 1)$
$c_8$	$(y^{60} + 73y^{59} + \dots - 15478y + 6241)$
$c_9$	$(y^{60} - 43y^{59} + \dots + 10y + 1)$
$c_{10}$	$(y^{60} - 59y^{59} + \dots + 10y + 1)$
$c_{11}$	$(y^{60} - 59y^{59} + \dots + 10y + 1)$