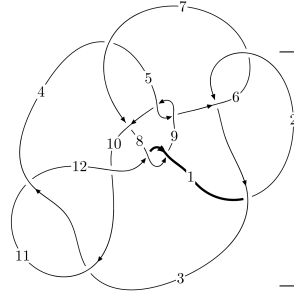
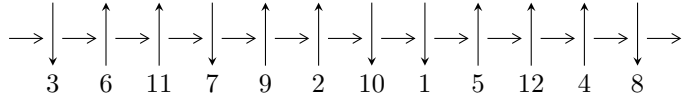


12a₀₄₆₄ (K12a₀₄₆₄)



A knot diagram¹

Linearized knot diagram



Solving Sequence

$$3,6 \xrightarrow{c_2} 2 \xrightarrow{c_6} 7 \xrightarrow{c_1} 1,9 \xrightarrow{c_5} 5 \xrightarrow{c_9} 10 \xrightarrow{c_4} 4 \xrightarrow{c_8} 8 \xrightarrow{c_{12}} 12 \xrightarrow{c_{10}} 11 \twoheadrightarrow c_3, c_7, c_{11}$$

Ideals for irreducible components² of X_{par}

$$I_1^u = \langle -9.04807 \times 10^{406} u^{147} - 2.76096 \times 10^{407} u^{146} + \dots + 1.92577 \times 10^{408} b - 2.23875 \times 10^{410}, \\ 2.14793 \times 10^{409} u^{147} - 3.51499 \times 10^{409} u^{146} + \dots + 1.34996 \times 10^{411} a - 6.24570 \times 10^{412}, \\ u^{148} + 2u^{147} + \dots + 2531u + 701 \rangle$$

$$I_2^u = \langle -3146106u^{35} + 3876595u^{34} + \dots + 1724315b + 7517731, \\ 10268268u^{35} - 15331195u^{34} + \dots + 1724315a - 6015468, u^{36} - u^{35} + \dots + u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 184 representations.

¹The image of knot diagram is generated by the software “**Draw programme**” developed by Andrew Bartholomew(<http://www.layer8.co.uk/maths/draw/index.htm#Running-draw>), where we modified some parts for our purpose(<https://github.com/CATsTAILs/LinksPainter>).

²All coefficients of polynomials are rational numbers. But the coefficients are sometimes approximated in decimal forms when there is not enough margin.

$$\text{I. } I_1^u = \langle -9.05 \times 10^{406} u^{147} - 2.76 \times 10^{407} u^{146} + \dots + 1.93 \times 10^{408} b - 2.24 \times 10^{410}, 2.15 \times 10^{409} u^{147} - 3.51 \times 10^{409} u^{146} + \dots + 1.35 \times 10^{411} a - 6.25 \times 10^{412}, u^{148} + 2u^{147} + \dots + 2531u + 701 \rangle$$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0159110u^{147} + 0.0260377u^{146} + \dots + 169.631u + 46.2657 \\ 0.0469842u^{147} + 0.143369u^{146} + \dots + 405.801u + 116.252 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0465841u^{147} + 0.0201408u^{146} + \dots + 402.993u + 158.980 \\ 0.0358114u^{147} - 0.0197006u^{146} + \dots - 137.396u - 63.0475 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0771767u^{147} + 0.00610062u^{146} + \dots - 296.017u - 141.082 \\ -0.0264258u^{147} - 0.144854u^{146} + \dots - 324.224u - 93.6180 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.0342021u^{147} + 0.101606u^{146} + \dots + 694.847u + 253.271 \\ 0.0566151u^{147} + 0.0229606u^{146} + \dots + 2.26931u - 8.50367 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -0.00994220u^{147} + 0.0634565u^{146} + \dots + 316.174u + 101.369 \\ 0.0609589u^{147} + 0.101110u^{146} + \dots + 169.224u + 49.1741 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -0.0966279u^{147} - 0.101794u^{146} + \dots + 97.6154u + 126.522 \\ 0.166862u^{147} + 0.374460u^{146} + \dots + 352.861u + 82.3272 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.271375u^{147} - 0.910200u^{146} + \dots - 1670.53u - 564.206 \\ -0.0600355u^{147} - 0.137866u^{146} + \dots - 183.561u - 47.5237 \end{pmatrix}$$

(ii) Obstruction class = -1

(iii) Cusp Shapes = $0.537377u^{147} + 0.175293u^{146} + \dots + 358.399u - 104.006$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{148} + 72u^{147} + \dots + 11695261u + 491401$
c_2, c_6	$u^{148} - 2u^{147} + \dots - 2531u + 701$
c_3, c_{11}	$u^{148} - 3u^{147} + \dots + 448u + 79$
c_4	$u^{148} - 11u^{147} + \dots - 304766u + 12641$
c_5, c_9	$u^{148} - 2u^{147} + \dots + 323478u + 28447$
c_7	$u^{148} - 6u^{147} + \dots - 95114195u + 15948193$
c_8, c_{12}	$u^{148} + 3u^{147} + \dots - 4435300u + 230749$
c_{10}	$u^{148} - 65u^{147} + \dots - 211290u + 6241$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{148} + 24y^{147} + \dots + 6272879625617y + 241474942801$
c_2, c_6	$y^{148} + 72y^{147} + \dots + 11695261y + 491401$
c_3, c_{11}	$y^{148} - 65y^{147} + \dots - 211290y + 6241$
c_4	$y^{148} - 21y^{147} + \dots + 6938479434y + 159794881$
c_5, c_9	$y^{148} + 100y^{147} + \dots + 19545541408y + 809231809$
c_7	$y^{148} - 54y^{147} + \dots - 12238567626382887y + 254344859965249$
c_8, c_{12}	$y^{148} - 121y^{147} + \dots - 6894134371112y + 53245101001$
c_{10}	$y^{148} + 55y^{147} + \dots + 170947586y + 38950081$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.425191 + 0.900886I$ $a = -0.908693 + 0.387376I$ $b = -1.11111 + 1.23624I$	$0.0966257 + 0.0356460I$	0
$u = -0.425191 - 0.900886I$ $a = -0.908693 - 0.387376I$ $b = -1.11111 - 1.23624I$	$0.0966257 - 0.0356460I$	0
$u = 0.615278 + 0.793735I$ $a = -0.444341 + 0.796795I$ $b = -1.277370 + 0.118783I$	$4.66104 + 0.59032I$	0
$u = 0.615278 - 0.793735I$ $a = -0.444341 - 0.796795I$ $b = -1.277370 - 0.118783I$	$4.66104 - 0.59032I$	0
$u = 0.955824 + 0.311247I$ $a = -0.09072 + 1.41279I$ $b = -1.046050 + 0.694704I$	$-6.54280 - 7.64347I$	0
$u = 0.955824 - 0.311247I$ $a = -0.09072 - 1.41279I$ $b = -1.046050 - 0.694704I$	$-6.54280 + 7.64347I$	0
$u = 0.827947 + 0.570448I$ $a = 0.887519 + 0.466404I$ $b = 0.862050 + 0.581341I$	$0.00196 + 4.07893I$	0
$u = 0.827947 - 0.570448I$ $a = 0.887519 - 0.466404I$ $b = 0.862050 - 0.581341I$	$0.00196 - 4.07893I$	0
$u = -0.172098 + 0.992907I$ $a = 1.089030 + 0.341264I$ $b = 1.72145 - 1.20543I$	$-5.29512 - 0.79673I$	0
$u = -0.172098 - 0.992907I$ $a = 1.089030 - 0.341264I$ $b = 1.72145 + 1.20543I$	$-5.29512 + 0.79673I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.674430 + 0.726719I$ $a = -0.907549 + 0.394204I$ $b = -0.811742 + 0.812398I$	$-0.111595 - 0.244550I$	0
$u = -0.674430 - 0.726719I$ $a = -0.907549 - 0.394204I$ $b = -0.811742 - 0.812398I$	$-0.111595 + 0.244550I$	0
$u = -0.887990 + 0.434785I$ $a = -0.11426 + 1.43706I$ $b = 0.952263 + 0.831720I$	$0.07879 + 5.21242I$	0
$u = -0.887990 - 0.434785I$ $a = -0.11426 - 1.43706I$ $b = 0.952263 - 0.831720I$	$0.07879 - 5.21242I$	0
$u = -0.786320 + 0.638765I$ $a = -0.100296 + 0.738323I$ $b = 0.043178 - 0.238664I$	$0.20776 - 5.21289I$	0
$u = -0.786320 - 0.638765I$ $a = -0.100296 - 0.738323I$ $b = 0.043178 + 0.238664I$	$0.20776 + 5.21289I$	0
$u = 0.247961 + 0.984296I$ $a = 0.427339 + 0.304533I$ $b = -0.92917 - 1.59666I$	$-5.36685 + 1.40168I$	0
$u = 0.247961 - 0.984296I$ $a = 0.427339 - 0.304533I$ $b = -0.92917 + 1.59666I$	$-5.36685 - 1.40168I$	0
$u = 0.607735 + 0.829546I$ $a = 0.833791 - 0.526187I$ $b = 0.958504 + 0.941504I$	$4.54450 + 4.21200I$	0
$u = 0.607735 - 0.829546I$ $a = 0.833791 + 0.526187I$ $b = 0.958504 - 0.941504I$	$4.54450 - 4.21200I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.254384 + 1.002620I$ $a = -0.955431 + 0.342921I$ $b = -2.39720 + 0.98938I$	$-4.70091 + 5.29807I$	0
$u = -0.254384 - 1.002620I$ $a = -0.955431 - 0.342921I$ $b = -2.39720 - 0.98938I$	$-4.70091 - 5.29807I$	0
$u = 0.734386 + 0.624295I$ $a = 0.629708 - 0.403716I$ $b = 0.816423 + 0.606510I$	$2.99338 - 2.81431I$	0
$u = 0.734386 - 0.624295I$ $a = 0.629708 + 0.403716I$ $b = 0.816423 - 0.606510I$	$2.99338 + 2.81431I$	0
$u = -0.959771 + 0.076014I$ $a = -0.026585 + 0.824774I$ $b = -0.305540 + 0.142882I$	$1.42740 + 0.99230I$	0
$u = -0.959771 - 0.076014I$ $a = -0.026585 - 0.824774I$ $b = -0.305540 - 0.142882I$	$1.42740 - 0.99230I$	0
$u = -0.090977 + 1.035350I$ $a = -0.015307 + 0.549490I$ $b = 0.0996459 + 0.0546940I$	$-2.71460 - 2.53227I$	0
$u = -0.090977 - 1.035350I$ $a = -0.015307 - 0.549490I$ $b = 0.0996459 - 0.0546940I$	$-2.71460 + 2.53227I$	0
$u = 0.912392 + 0.265374I$ $a = 0.761640 + 0.610432I$ $b = 0.827400 + 0.271618I$	$0.1094310 + 0.0814343I$	0
$u = 0.912392 - 0.265374I$ $a = 0.761640 - 0.610432I$ $b = 0.827400 - 0.271618I$	$0.1094310 - 0.0814343I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.008190 + 0.324057I$		
$a = 0.096515 + 1.338910I$	$-4.6329 + 13.5216I$	0
$b = 1.014480 + 0.645678I$		
$u = -1.008190 - 0.324057I$		
$a = 0.096515 - 1.338910I$	$-4.6329 - 13.5216I$	0
$b = 1.014480 - 0.645678I$		
$u = -0.388923 + 0.992978I$		
$a = -1.227430 + 0.579476I$	$-8.57268 - 3.06760I$	0
$b = -1.240840 - 0.473315I$		
$u = -0.388923 - 0.992978I$		
$a = -1.227430 - 0.579476I$	$-8.57268 + 3.06760I$	0
$b = -1.240840 + 0.473315I$		
$u = -0.260397 + 1.035270I$		
$a = -0.357235 + 0.222552I$	$-4.82531 - 6.86098I$	0
$b = 1.26943 - 1.28560I$		
$u = -0.260397 - 1.035270I$		
$a = -0.357235 - 0.222552I$	$-4.82531 + 6.86098I$	0
$b = 1.26943 + 1.28560I$		
$u = -0.914197 + 0.099427I$		
$a = -0.635443 + 0.649586I$	$0.36402 - 4.17697I$	0
$b = -0.789762 + 0.116454I$		
$u = -0.914197 - 0.099427I$		
$a = -0.635443 - 0.649586I$	$0.36402 + 4.17697I$	0
$b = -0.789762 - 0.116454I$		
$u = 0.282717 + 1.050840I$		
$a = 0.944793 + 0.339562I$	$-5.61649 + 0.14710I$	0
$b = 2.03412 + 0.62469I$		
$u = 0.282717 - 1.050840I$		
$a = 0.944793 - 0.339562I$	$-5.61649 - 0.14710I$	0
$b = 2.03412 - 0.62469I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.242159 + 1.061980I$ $a = -0.269463 - 0.938054I$ $b = 1.307230 + 0.454495I$	$-5.18565 - 5.65837I$	0
$u = 0.242159 - 1.061980I$ $a = -0.269463 + 0.938054I$ $b = 1.307230 - 0.454495I$	$-5.18565 + 5.65837I$	0
$u = 0.474238 + 1.011850I$ $a = 0.41753 - 1.48728I$ $b = 1.75008 + 0.44425I$	$2.53809 + 3.01205I$	0
$u = 0.474238 - 1.011850I$ $a = 0.41753 + 1.48728I$ $b = 1.75008 - 0.44425I$	$2.53809 - 3.01205I$	0
$u = -0.329706 + 1.071850I$ $a = 0.112592 - 1.063290I$ $b = -1.357660 + 0.391816I$	$-6.29447 - 0.56914I$	0
$u = -0.329706 - 1.071850I$ $a = 0.112592 + 1.063290I$ $b = -1.357660 - 0.391816I$	$-6.29447 + 0.56914I$	0
$u = -0.385820 + 1.053260I$ $a = 1.26681 - 0.97027I$ $b = 0.047621 - 0.642950I$	$-8.17532 - 5.80912I$	0
$u = -0.385820 - 1.053260I$ $a = 1.26681 + 0.97027I$ $b = 0.047621 + 0.642950I$	$-8.17532 + 5.80912I$	0
$u = 0.356491 + 1.064110I$ $a = 1.166600 + 0.483489I$ $b = 1.265760 - 0.419036I$	$-8.44747 - 1.56376I$	0
$u = 0.356491 - 1.064110I$ $a = 1.166600 - 0.483489I$ $b = 1.265760 + 0.419036I$	$-8.44747 + 1.56376I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.568167 + 0.969370I$		
$a = 0.218147 + 0.533361I$	$-0.05778 - 3.26039I$	0
$b = 1.015540 - 0.099725I$		
$u = -0.568167 - 0.969370I$		
$a = 0.218147 - 0.533361I$	$-0.05778 + 3.26039I$	0
$b = 1.015540 + 0.099725I$		
$u = -0.456106 + 1.034010I$		
$a = -0.040597 + 0.439420I$	$-0.79703 - 3.19669I$	0
$b = 0.756560 - 0.449506I$		
$u = -0.456106 - 1.034010I$		
$a = -0.040597 - 0.439420I$	$-0.79703 + 3.19669I$	0
$b = 0.756560 + 0.449506I$		
$u = -0.516238 + 1.007620I$		
$a = 1.211910 - 0.159033I$	$0.88815 - 5.53053I$	0
$b = 1.81710 - 1.15826I$		
$u = -0.516238 - 1.007620I$		
$a = 1.211910 + 0.159033I$	$0.88815 + 5.53053I$	0
$b = 1.81710 + 1.15826I$		
$u = 0.659215 + 0.920458I$		
$a = 0.102798 + 0.644833I$	$-0.99142 + 1.51047I$	0
$b = -0.266317 - 0.407081I$		
$u = 0.659215 - 0.920458I$		
$a = 0.102798 - 0.644833I$	$-0.99142 - 1.51047I$	0
$b = -0.266317 + 0.407081I$		
$u = 0.247412 + 1.111640I$		
$a = -1.040740 + 0.206539I$	$-5.33414 + 6.40217I$	0
$b = -1.72487 - 1.12685I$		
$u = 0.247412 - 1.111640I$		
$a = -1.040740 - 0.206539I$	$-5.33414 - 6.40217I$	0
$b = -1.72487 + 1.12685I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.742862 + 0.432244I$ $a = 0.28185 - 1.45500I$ $b = -0.620562 + 0.132574I$	$-0.34787 + 7.05510I$	0
$u = -0.742862 - 0.432244I$ $a = 0.28185 + 1.45500I$ $b = -0.620562 - 0.132574I$	$-0.34787 - 7.05510I$	0
$u = 0.293907 + 1.113300I$ $a = -1.27949 - 0.66882I$ $b = -0.340521 - 0.535868I$	$-10.87350 - 0.03168I$	0
$u = 0.293907 - 1.113300I$ $a = -1.27949 + 0.66882I$ $b = -0.340521 + 0.535868I$	$-10.87350 + 0.03168I$	0
$u = -0.272602 + 0.803115I$ $a = -1.62219 + 0.65036I$ $b = -1.177530 - 0.540515I$	$-7.68851 + 0.20702I$	0
$u = -0.272602 - 0.803115I$ $a = -1.62219 - 0.65036I$ $b = -1.177530 + 0.540515I$	$-7.68851 - 0.20702I$	0
$u = 0.749605 + 0.381728I$ $a = -1.146630 + 0.471610I$ $b = -1.46202 - 0.07922I$	$-0.74478 - 7.93333I$	0
$u = 0.749605 - 0.381728I$ $a = -1.146630 - 0.471610I$ $b = -1.46202 + 0.07922I$	$-0.74478 + 7.93333I$	0
$u = -0.537817 + 0.634902I$ $a = -0.776760 - 0.228723I$ $b = -0.593785 + 0.781102I$	$0.95955 - 1.21524I$	0
$u = -0.537817 - 0.634902I$ $a = -0.776760 + 0.228723I$ $b = -0.593785 - 0.781102I$	$0.95955 + 1.21524I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.535130 + 1.041350I$ $a = 0.927657 - 0.314214I$ $b = 0.91309 - 2.60935I$	$-7.45648 - 3.08397I$	0
$u = -0.535130 - 1.041350I$ $a = 0.927657 + 0.314214I$ $b = 0.91309 + 2.60935I$	$-7.45648 + 3.08397I$	0
$u = -0.505683 + 1.079170I$ $a = -1.287270 - 0.150971I$ $b = -1.28391 + 2.08622I$	$-7.30083 - 1.08481I$	0
$u = -0.505683 - 1.079170I$ $a = -1.287270 + 0.150971I$ $b = -1.28391 - 2.08622I$	$-7.30083 + 1.08481I$	0
$u = 0.666394 + 0.990905I$ $a = -0.344955 + 0.462389I$ $b = -1.153180 - 0.156168I$	$1.92086 + 8.13920I$	0
$u = 0.666394 - 0.990905I$ $a = -0.344955 - 0.462389I$ $b = -1.153180 + 0.156168I$	$1.92086 - 8.13920I$	0
$u = -0.070879 + 0.797486I$ $a = 2.01729 - 0.07230I$ $b = 1.049440 - 0.751920I$	$-6.50161 + 3.43532I$	0
$u = -0.070879 - 0.797486I$ $a = 2.01729 + 0.07230I$ $b = 1.049440 + 0.751920I$	$-6.50161 - 3.43532I$	0
$u = 0.525187 + 1.081700I$ $a = -0.933857 - 0.281649I$ $b = -1.32858 - 2.50886I$	$-7.25143 + 8.54744I$	0
$u = 0.525187 - 1.081700I$ $a = -0.933857 + 0.281649I$ $b = -1.32858 + 2.50886I$	$-7.25143 - 8.54744I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.712644 + 0.341756I$		
$a = -0.21836 - 1.50311I$	$-1.52072 - 2.26923I$	0
$b = 0.643598 + 0.074479I$		
$u = 0.712644 - 0.341756I$		
$a = -0.21836 + 1.50311I$	$-1.52072 + 2.26923I$	0
$b = 0.643598 - 0.074479I$		
$u = -0.525379 + 0.582184I$		
$a = 0.54907 - 1.51299I$	$2.19894 + 1.26322I$	0
$b = -0.579011 + 0.139100I$		
$u = -0.525379 - 0.582184I$		
$a = 0.54907 + 1.51299I$	$2.19894 - 1.26322I$	0
$b = -0.579011 - 0.139100I$		
$u = -0.859778 + 0.860733I$		
$a = 0.658030 - 0.528426I$	$-2.78266 - 3.12885I$	0
$b = -0.107268 - 1.240420I$		
$u = -0.859778 - 0.860733I$		
$a = 0.658030 + 0.528426I$	$-2.78266 + 3.12885I$	0
$b = -0.107268 + 1.240420I$		
$u = -0.527489 + 1.101300I$		
$a = -0.419554 - 1.005090I$	$-4.90983 - 6.67020I$	0
$b = -1.45388 + 0.58996I$		
$u = -0.527489 - 1.101300I$		
$a = -0.419554 + 1.005090I$	$-4.90983 + 6.67020I$	0
$b = -1.45388 - 0.58996I$		
$u = 0.471133 + 1.131210I$		
$a = 0.880267 + 0.323207I$	$-3.88849 + 2.05586I$	0
$b = 1.132990 + 0.613143I$		
$u = 0.471133 - 1.131210I$		
$a = 0.880267 - 0.323207I$	$-3.88849 - 2.05586I$	0
$b = 1.132990 - 0.613143I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.579422 + 0.512153I$		
$a = 1.00187 - 1.02881I$	$-5.86736 - 1.39887I$	0
$b = -1.34355 - 0.90802I$		
$u = -0.579422 - 0.512153I$		
$a = 1.00187 + 1.02881I$	$-5.86736 + 1.39887I$	0
$b = -1.34355 + 0.90802I$		
$u = 0.053170 + 1.225770I$		
$a = 1.137180 - 0.055777I$	$-6.15003 + 2.90162I$	0
$b = 0.817211 - 0.231044I$		
$u = 0.053170 - 1.225770I$		
$a = 1.137180 + 0.055777I$	$-6.15003 - 2.90162I$	0
$b = 0.817211 + 0.231044I$		
$u = 0.701424 + 0.307478I$		
$a = 0.06651 + 1.81202I$	$-6.82429 - 2.85653I$	0
$b = -1.18853 + 0.89936I$		
$u = 0.701424 - 0.307478I$		
$a = 0.06651 - 1.81202I$	$-6.82429 + 2.85653I$	0
$b = -1.18853 - 0.89936I$		
$u = 0.549154 + 1.108240I$		
$a = -1.048510 - 0.197845I$	$-3.75841 + 7.08824I$	0
$b = -1.90432 - 1.36379I$		
$u = 0.549154 - 1.108240I$		
$a = -1.048510 + 0.197845I$	$-3.75841 - 7.08824I$	0
$b = -1.90432 + 1.36379I$		
$u = -0.582775 + 1.091230I$		
$a = 1.077360 - 0.243486I$	$-2.30958 - 12.09970I$	0
$b = 1.99437 - 1.26316I$		
$u = -0.582775 - 1.091230I$		
$a = 1.077360 + 0.243486I$	$-2.30958 + 12.09970I$	0
$b = 1.99437 + 1.26316I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.430894 + 0.626919I$ $a = -1.37526 + 1.12401I$ $b = -1.79430 - 0.33683I$	$3.82074 + 0.82584I$	$0. + 12.01862I$
$u = 0.430894 - 0.626919I$ $a = -1.37526 - 1.12401I$ $b = -1.79430 + 0.33683I$	$3.82074 - 0.82584I$	$0. - 12.01862I$
$u = 0.544274 + 1.118720I$ $a = 1.258340 - 0.038176I$ $b = 1.35788 + 2.04204I$	$-9.17036 + 7.63502I$	0
$u = 0.544274 - 1.118720I$ $a = 1.258340 + 0.038176I$ $b = 1.35788 - 2.04204I$	$-9.17036 - 7.63502I$	0
$u = 0.573792 + 1.109700I$ $a = 0.471409 - 0.912880I$ $b = 1.40115 + 0.63013I$	$-2.89817 + 12.95310I$	0
$u = 0.573792 - 1.109700I$ $a = 0.471409 + 0.912880I$ $b = 1.40115 - 0.63013I$	$-2.89817 - 12.95310I$	0
$u = -0.529490 + 1.149960I$ $a = -0.037521 + 0.588448I$ $b = 0.365654 - 0.315473I$	$-2.64992 - 0.78801I$	0
$u = -0.529490 - 1.149960I$ $a = -0.037521 - 0.588448I$ $b = 0.365654 + 0.315473I$	$-2.64992 + 0.78801I$	0
$u = 1.087160 + 0.649434I$ $a = -0.444462 - 0.644595I$ $b = 0.231242 - 0.767105I$	$0.962404 - 0.036766I$	0
$u = 1.087160 - 0.649434I$ $a = -0.444462 + 0.644595I$ $b = 0.231242 + 0.767105I$	$0.962404 + 0.036766I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.525759 + 1.164970I$ $a = -0.936976 - 0.122219I$ $b = -1.55915 - 1.42824I$	$-3.54285 + 6.48216I$	0
$u = 0.525759 - 1.164970I$ $a = -0.936976 + 0.122219I$ $b = -1.55915 + 1.42824I$	$-3.54285 - 6.48216I$	0
$u = 0.605869 + 1.134030I$ $a = 0.044865 + 0.603584I$ $b = -0.352910 - 0.346382I$	$-2.37094 + 5.39078I$	0
$u = 0.605869 - 1.134030I$ $a = 0.044865 - 0.603584I$ $b = -0.352910 + 0.346382I$	$-2.37094 - 5.39078I$	0
$u = -0.641450 + 0.306632I$ $a = 1.34181 + 0.49511I$ $b = 1.43513 - 0.09491I$	$-2.65046 + 2.10274I$	$0.40325 - 1.49584I$
$u = -0.641450 - 0.306632I$ $a = 1.34181 - 0.49511I$ $b = 1.43513 + 0.09491I$	$-2.65046 - 2.10274I$	$0.40325 + 1.49584I$
$u = 0.689595 + 0.143585I$ $a = 0.108239 - 1.368740I$ $b = 0.554669 - 0.104054I$	$-0.65665 - 1.83643I$	$-0.11295 + 4.32768I$
$u = 0.689595 - 0.143585I$ $a = 0.108239 + 1.368740I$ $b = 0.554669 + 0.104054I$	$-0.65665 + 1.83643I$	$-0.11295 - 4.32768I$
$u = -0.633703 + 1.130960I$ $a = -1.231030 + 0.134183I$ $b = -1.32148 + 1.85019I$	$-2.05043 - 10.81250I$	0
$u = -0.633703 - 1.130960I$ $a = -1.231030 - 0.134183I$ $b = -1.32148 - 1.85019I$	$-2.05043 + 10.81250I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.368550 + 0.597343I$		
$a = 0.297253 + 0.844568I$	$-1.67598 + 1.25675I$	$-3.07060 + 0.96449I$
$b = 0.291132 - 0.649255I$		
$u = 0.368550 - 0.597343I$		
$a = 0.297253 - 0.844568I$	$-1.67598 - 1.25675I$	$-3.07060 - 0.96449I$
$b = 0.291132 + 0.649255I$		
$u = -0.646623 + 0.225320I$		
$a = -0.335863 - 0.412182I$	$1.43737 - 0.62625I$	$7.15445 + 1.17891I$
$b = -0.570590 + 0.265645I$		
$u = -0.646623 - 0.225320I$		
$a = -0.335863 + 0.412182I$	$1.43737 + 0.62625I$	$7.15445 - 1.17891I$
$b = -0.570590 - 0.265645I$		
$u = 0.566560 + 0.366560I$		
$a = -0.95301 - 1.40831I$	$-5.20625 - 4.11116I$	$-2.47779 + 3.46089I$
$b = 1.35305 - 0.44417I$		
$u = 0.566560 - 0.366560I$		
$a = -0.95301 + 1.40831I$	$-5.20625 + 4.11116I$	$-2.47779 - 3.46089I$
$b = 1.35305 + 0.44417I$		
$u = -0.608177 + 1.180210I$		
$a = -0.820478 + 0.346515I$	$-1.63073 - 6.57855I$	0
$b = -0.878124 + 0.653536I$		
$u = -0.608177 - 1.180210I$		
$a = -0.820478 - 0.346515I$	$-1.63073 + 6.57855I$	0
$b = -0.878124 - 0.653536I$		
$u = -0.136962 + 0.647085I$		
$a = -1.35124 - 0.63819I$	$0.82873 - 2.36583I$	$-3.98095 + 10.11766I$
$b = 0.183116 + 0.844149I$		
$u = -0.136962 - 0.647085I$		
$a = -1.35124 + 0.63819I$	$0.82873 + 2.36583I$	$-3.98095 - 10.11766I$
$b = 0.183116 - 0.844149I$		

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.619893 + 1.198320I$ $a = 1.138640 + 0.082672I$ $b = 1.49587 + 1.83204I$	$-9.2508 + 13.3537I$	0
$u = 0.619893 - 1.198320I$ $a = 1.138640 - 0.082672I$ $b = 1.49587 - 1.83204I$	$-9.2508 - 13.3537I$	0
$u = -0.532624 + 0.349343I$ $a = -0.41146 + 2.02083I$ $b = 1.28393 + 1.02038I$	$-5.21882 - 3.18851I$	$-2.07626 + 2.93447I$
$u = -0.532624 - 0.349343I$ $a = -0.41146 - 2.02083I$ $b = 1.28393 - 1.02038I$	$-5.21882 + 3.18851I$	$-2.07626 - 2.93447I$
$u = 0.196299 + 1.355000I$ $a = -0.965259 - 0.378087I$ $b = -0.503409 - 0.176438I$	$-12.27760 - 3.77919I$	0
$u = 0.196299 - 1.355000I$ $a = -0.965259 + 0.378087I$ $b = -0.503409 + 0.176438I$	$-12.27760 + 3.77919I$	0
$u = -0.640733 + 1.213440I$ $a = -1.114010 + 0.100736I$ $b = -1.51924 + 1.77093I$	$-7.3734 - 19.4535I$	0
$u = -0.640733 - 1.213440I$ $a = -1.114010 - 0.100736I$ $b = -1.51924 - 1.77093I$	$-7.3734 + 19.4535I$	0
$u = -0.67898 + 1.25201I$ $a = 0.711820 - 0.144794I$ $b = 1.00800 - 1.17812I$	$-2.19931 - 4.86152I$	0
$u = -0.67898 - 1.25201I$ $a = 0.711820 + 0.144794I$ $b = 1.00800 + 1.17812I$	$-2.19931 + 4.86152I$	0

Solutions to I_1^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.50181 + 1.34156I$ $a = -0.798398 + 0.031484I$ $b = -1.41214 - 1.05940I$	$-4.66830 + 4.99985I$	0
$u = 0.50181 - 1.34156I$ $a = -0.798398 - 0.031484I$ $b = -1.41214 + 1.05940I$	$-4.66830 - 4.99985I$	0
$u = -0.17091 + 1.42362I$ $a = 0.896537 - 0.330036I$ $b = 0.526780 - 0.111552I$	$-10.7752 + 9.3897I$	0
$u = -0.17091 - 1.42362I$ $a = 0.896537 + 0.330036I$ $b = 0.526780 + 0.111552I$	$-10.7752 - 9.3897I$	0
$u = 1.00653 + 1.04164I$ $a = -0.541332 - 0.403540I$ $b = -0.214952 - 0.974903I$	$-0.16056 + 7.37874I$	0
$u = 1.00653 - 1.04164I$ $a = -0.541332 + 0.403540I$ $b = -0.214952 + 0.974903I$	$-0.16056 - 7.37874I$	0
$u = -0.56499 + 1.36503I$ $a = 0.744900 + 0.011895I$ $b = 1.32344 - 1.01579I$	$-4.06489 - 9.60665I$	0
$u = -0.56499 - 1.36503I$ $a = 0.744900 - 0.011895I$ $b = 1.32344 + 1.01579I$	$-4.06489 + 9.60665I$	0

II.

$$I_2^u = \langle -3.15 \times 10^6 u^{35} + 3.88 \times 10^6 u^{34} + \dots + 1.72 \times 10^6 b + 7.52 \times 10^6, 1.03 \times 10^7 u^{35} - 1.53 \times 10^7 u^{34} + \dots + 1.72 \times 10^6 a - 6.02 \times 10^6, u^{36} - u^{35} + \dots + u + 1 \rangle$$

(i) Arc colorings

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

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

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

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

$$a_1 = \begin{pmatrix} u^2 + 1 \\ u^2 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -5.95498u^{35} + 8.89118u^{34} + \dots - 8.77859u + 3.48861 \\ 1.82455u^{35} - 2.24819u^{34} + \dots + 4.41970u - 4.35984 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 4.59957u^{35} - 13.3028u^{34} + \dots - 6.31804u - 3.67989 \\ -0.0628435u^{35} - 14.4329u^{34} + \dots - 20.8746u - 10.4327 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -3.59479u^{35} + 2.95483u^{34} + \dots - 5.76110u - 11.1871 \\ 2.08786u^{35} - 4.81507u^{34} + \dots + 2.65315u - 7.45944 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 2.81251u^{35} - 2.58409u^{34} + \dots + 8.16268u + 8.68835 \\ 0.793840u^{35} - 11.0376u^{34} + \dots - 13.5385u - 6.99606 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -5.95498u^{35} + 8.89118u^{34} + \dots - 7.77859u + 3.48861 \\ 1.82455u^{35} - 1.24819u^{34} + \dots + 5.41970u - 3.35984 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 5.64016u^{35} - 6.46472u^{34} + \dots - 4.62799u - 5.77954 \\ 4.69556u^{35} - 1.36263u^{34} + \dots + 13.2129u + 5.15749 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1.42158u^{35} - 8.55899u^{34} + \dots + 0.265641u - 9.55947 \\ 4.87101u^{35} - 8.11443u^{34} + \dots + 3.79319u + 1.51733 \end{pmatrix}$$

(ii) Obstruction class = 1

(iii) Cusp Shapes = $\frac{41645239}{1724315}u^{35} - \frac{9673393}{344863}u^{34} + \dots - \frac{8262428}{1724315}u + \frac{4618806}{1724315}$

(iv) u -Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{36} - 19u^{35} + \dots - 25u + 1$
c_2	$u^{36} - u^{35} + \dots + u + 1$
c_3	$u^{36} + 2u^{35} + \dots + 4u + 1$
c_4	$u^{36} - 2u^{35} + \dots - 6u + 1$
c_5	$u^{36} - u^{35} + \dots + 16u^2 + 1$
c_6	$u^{36} + u^{35} + \dots - u + 1$
c_7	$u^{36} - 13u^{35} + \dots - 13u + 1$
c_8	$u^{36} + 2u^{35} + \dots - 14u^2 + 1$
c_9	$u^{36} + u^{35} + \dots + 16u^2 + 1$
c_{10}	$u^{36} + 22u^{35} + \dots + 18u + 1$
c_{11}	$u^{36} - 2u^{35} + \dots - 4u + 1$
c_{12}	$u^{36} - 2u^{35} + \dots - 14u^2 + 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{36} + 11y^{35} + \dots - 39y + 1$
c_2, c_6	$y^{36} + 19y^{35} + \dots + 25y + 1$
c_3, c_{11}	$y^{36} - 22y^{35} + \dots - 18y + 1$
c_4	$y^{36} + 2y^{35} + \dots + 22y + 1$
c_5, c_9	$y^{36} + 23y^{35} + \dots + 32y + 1$
c_7	$y^{36} - 7y^{35} + \dots - 39y + 1$
c_8, c_{12}	$y^{36} - 38y^{35} + \dots - 28y + 1$
c_{10}	$y^{36} + 2y^{35} + \dots + 18y + 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.267872 + 0.969144I$		
$a = 1.310560 + 0.515277I$	$-8.47394 + 0.10484I$	$-8.00709 - 2.28501I$
$b = 0.572693 - 0.762159I$		
$u = 0.267872 - 0.969144I$		
$a = 1.310560 - 0.515277I$	$-8.47394 - 0.10484I$	$-8.00709 + 2.28501I$
$b = 0.572693 + 0.762159I$		
$u = -0.311977 + 0.985891I$		
$a = -1.24006 + 0.71430I$	$-7.24972 - 4.96839I$	$-2.65619 + 5.58522I$
$b = 0.018867 - 0.189152I$		
$u = -0.311977 - 0.985891I$		
$a = -1.24006 - 0.71430I$	$-7.24972 + 4.96839I$	$-2.65619 - 5.58522I$
$b = 0.018867 + 0.189152I$		
$u = 0.247865 + 0.919721I$		
$a = 1.46665 + 0.36943I$	$-8.26240 + 2.01908I$	$-5.39837 - 1.34689I$
$b = 1.73750 - 0.36260I$		
$u = 0.247865 - 0.919721I$		
$a = 1.46665 - 0.36943I$	$-8.26240 - 2.01908I$	$-5.39837 + 1.34689I$
$b = 1.73750 + 0.36260I$		
$u = -0.270192 + 0.878505I$		
$a = -1.66766 + 0.32956I$	$-6.79500 + 2.56150I$	$-3.78795 + 0.91855I$
$b = -1.73400 + 0.56304I$		
$u = -0.270192 - 0.878505I$		
$a = -1.66766 - 0.32956I$	$-6.79500 - 2.56150I$	$-3.78795 - 0.91855I$
$b = -1.73400 - 0.56304I$		
$u = 0.483341 + 0.983469I$		
$a = -0.446777 + 1.325560I$	$2.84973 + 2.80112I$	$7.55184 + 1.71261I$
$b = -1.51684 - 0.59207I$		
$u = 0.483341 - 0.983469I$		
$a = -0.446777 - 1.325560I$	$2.84973 - 2.80112I$	$7.55184 - 1.71261I$
$b = -1.51684 + 0.59207I$		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.648072 + 0.912270I$		
$a = -0.282904 + 0.248794I$	$-1.38069 - 2.44610I$	$-0.27055 + 2.92110I$
$b = -0.211511 - 0.255401I$		
$u = -0.648072 - 0.912270I$		
$a = -0.282904 - 0.248794I$	$-1.38069 + 2.44610I$	$-0.27055 - 2.92110I$
$b = -0.211511 + 0.255401I$		
$u = -0.846010 + 0.032787I$		
$a = -0.417181 - 1.119950I$	$1.05511 + 2.50002I$	$4.90460 - 3.96828I$
$b = -0.482815 - 0.467073I$		
$u = -0.846010 - 0.032787I$		
$a = -0.417181 + 1.119950I$	$1.05511 - 2.50002I$	$4.90460 + 3.96828I$
$b = -0.482815 + 0.467073I$		
$u = 0.468457 + 0.696657I$		
$a = 1.07826 - 1.06153I$	$3.82341 + 1.13526I$	$0.69227 - 13.44028I$
$b = 1.74977 + 0.07775I$		
$u = 0.468457 - 0.696657I$		
$a = 1.07826 + 1.06153I$	$3.82341 - 1.13526I$	$0.69227 + 13.44028I$
$b = 1.74977 - 0.07775I$		
$u = -0.574405 + 1.017030I$		
$a = -0.217450 + 0.444606I$	$-1.43817 - 2.50681I$	$-0.96440 + 2.41655I$
$b = 0.199350 - 0.274988I$		
$u = -0.574405 - 1.017030I$		
$a = -0.217450 - 0.444606I$	$-1.43817 + 2.50681I$	$-0.96440 - 2.41655I$
$b = 0.199350 + 0.274988I$		
$u = -0.431085 + 1.088440I$		
$a = 0.787248 + 0.108685I$	$-5.49826 - 2.89325I$	$-3.34806 + 4.01768I$
$b = 1.38856 - 1.96753I$		
$u = -0.431085 - 1.088440I$		
$a = 0.787248 - 0.108685I$	$-5.49826 + 2.89325I$	$-3.34806 - 4.01768I$
$b = 1.38856 + 1.96753I$		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.059560 + 0.515855I$		
$a = 0.463742 + 0.525646I$	$1.85907 + 0.26551I$	$10.23111 - 3.19118I$
$b = 0.362385 + 0.278926I$		
$u = 1.059560 - 0.515855I$		
$a = 0.463742 - 0.525646I$	$1.85907 - 0.26551I$	$10.23111 + 3.19118I$
$b = 0.362385 - 0.278926I$		
$u = -0.321307 + 0.706504I$		
$a = 0.468453 - 0.763994I$	$-3.97544 - 0.27399I$	$0.72270 + 1.34695I$
$b = -1.97938 - 0.52466I$		
$u = -0.321307 - 0.706504I$		
$a = 0.468453 + 0.763994I$	$-3.97544 + 0.27399I$	$0.72270 - 1.34695I$
$b = -1.97938 + 0.52466I$		
$u = 0.420145 + 1.159460I$		
$a = -0.804920 + 0.027986I$	$-5.41877 + 8.35501I$	$-3.84738 - 9.47959I$
$b = -1.77304 - 1.74365I$		
$u = 0.420145 - 1.159460I$		
$a = -0.804920 - 0.027986I$	$-5.41877 - 8.35501I$	$-3.84738 + 9.47959I$
$b = -1.77304 + 1.74365I$		
$u = 0.243059 + 0.668327I$		
$a = -0.750616 - 0.845989I$	$-3.35944 - 5.51600I$	$2.83988 + 4.70708I$
$b = 2.21273 + 0.08566I$		
$u = 0.243059 - 0.668327I$		
$a = -0.750616 + 0.845989I$	$-3.35944 + 5.51600I$	$2.83988 - 4.70708I$
$b = 2.21273 - 0.08566I$		
$u = 0.916085 + 1.011850I$		
$a = 0.384105 + 0.345387I$	$0.51910 + 6.78058I$	$0. - 5.65370I$
$b = 0.182528 + 0.118997I$		
$u = 0.916085 - 1.011850I$		
$a = 0.384105 - 0.345387I$	$0.51910 - 6.78058I$	$0. + 5.65370I$
$b = 0.182528 - 0.118997I$		

Solutions to I_2^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.649456 + 1.213320I$		
$a = 0.896490 - 0.212391I$	$-2.21938 - 8.11542I$	$0. + 8.67111I$
$b = 1.07185 - 1.25529I$		
$u = -0.649456 - 1.213320I$		
$a = 0.896490 + 0.212391I$	$-2.21938 + 8.11542I$	$0. - 8.67111I$
$b = 1.07185 + 1.25529I$		
$u = 0.536844 + 1.287200I$		
$a = -0.806837 - 0.102877I$	$-3.22237 + 5.19860I$	0
$b = -1.42362 - 1.08127I$		
$u = 0.536844 - 1.287200I$		
$a = -0.806837 + 0.102877I$	$-3.22237 - 5.19860I$	0
$b = -1.42362 + 1.08127I$		
$u = -0.090728 + 0.429131I$		
$a = -2.22110 - 0.68573I$	$1.12900 - 1.96865I$	$5.96224 - 1.18713I$
$b = 0.124980 + 0.981872I$		
$u = -0.090728 - 0.429131I$		
$a = -2.22110 + 0.68573I$	$1.12900 + 1.96865I$	$5.96224 + 1.18713I$
$b = 0.124980 - 0.981872I$		

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{36} - 19u^{35} + \dots - 25u + 1)$ $\cdot (u^{148} + 72u^{147} + \dots + 11695261u + 491401)$
c_2	$(u^{36} - u^{35} + \dots + u + 1)(u^{148} - 2u^{147} + \dots - 2531u + 701)$
c_3	$(u^{36} + 2u^{35} + \dots + 4u + 1)(u^{148} - 3u^{147} + \dots + 448u + 79)$
c_4	$(u^{36} - 2u^{35} + \dots - 6u + 1)(u^{148} - 11u^{147} + \dots - 304766u + 12641)$
c_5	$(u^{36} - u^{35} + \dots + 16u^2 + 1)(u^{148} - 2u^{147} + \dots + 323478u + 28447)$
c_6	$(u^{36} + u^{35} + \dots - u + 1)(u^{148} - 2u^{147} + \dots - 2531u + 701)$
c_7	$(u^{36} - 13u^{35} + \dots - 13u + 1)$ $\cdot (u^{148} - 6u^{147} + \dots - 95114195u + 15948193)$
c_8	$(u^{36} + 2u^{35} + \dots - 14u^2 + 1)(u^{148} + 3u^{147} + \dots - 4435300u + 230749)$
c_9	$(u^{36} + u^{35} + \dots + 16u^2 + 1)(u^{148} - 2u^{147} + \dots + 323478u + 28447)$
c_{10}	$(u^{36} + 22u^{35} + \dots + 18u + 1)(u^{148} - 65u^{147} + \dots - 211290u + 6241)$
c_{11}	$(u^{36} - 2u^{35} + \dots - 4u + 1)(u^{148} - 3u^{147} + \dots + 448u + 79)$
c_{12}	$(u^{36} - 2u^{35} + \dots - 14u^2 + 1)(u^{148} + 3u^{147} + \dots - 4435300u + 230749)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{36} + 11y^{35} + \dots - 39y + 1)$ $\cdot (y^{148} + 24y^{147} + \dots + 6272879625617y + 241474942801)$
c_2, c_6	$(y^{36} + 19y^{35} + \dots + 25y + 1)$ $\cdot (y^{148} + 72y^{147} + \dots + 11695261y + 491401)$
c_3, c_{11}	$(y^{36} - 22y^{35} + \dots - 18y + 1)(y^{148} - 65y^{147} + \dots - 211290y + 6241)$
c_4	$(y^{36} + 2y^{35} + \dots + 22y + 1)$ $\cdot (y^{148} - 21y^{147} + \dots + 6938479434y + 159794881)$
c_5, c_9	$(y^{36} + 23y^{35} + \dots + 32y + 1)$ $\cdot (y^{148} + 100y^{147} + \dots + 19545541408y + 809231809)$
c_7	$(y^{36} - 7y^{35} + \dots - 39y + 1)$ $\cdot (y^{148} - 54y^{147} + \dots - 12238567626382887y + 254344859965249)$
c_8, c_{12}	$(y^{36} - 38y^{35} + \dots - 28y + 1)$ $\cdot (y^{148} - 121y^{147} + \dots - 6894134371112y + 53245101001)$
c_{10}	$(y^{36} + 2y^{35} + \dots + 18y + 1)$ $\cdot (y^{148} + 55y^{147} + \dots + 170947586y + 38950081)$