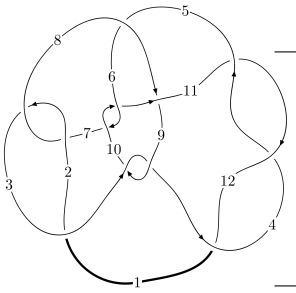
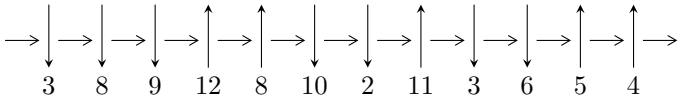
## $12n_{0662}$ $(K12n_{0662})$




A knot diagram[1]

**Linearized knot diagam**




**Solving Sequence**

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

**Ideals for irreducible components[2]of $X_{\mathbf{par}}$**

$$I_1^u = \langle 3.56429 \times 10^{66} u^{46} + 1.38822 \times 10^{67} u^{45} + \cdots + 1.35802 \times 10^{68} b - 1.96080 \times 10^{67},$$
$$- 2.47131 \times 10^{68} u^{46} - 9.94693 \times 10^{68} u^{45} + \cdots + 1.49382 \times 10^{69} a + 2.99067 \times 10^{69},\ u^{47} + 4u^{46} + \cdots + u +$$
$$I_2^u = \langle -4u^{16} + 4u^{15} + \cdots + b - 4,\ -2u^{17} + 2u^{16} + \cdots + a - 4,\ u^{18} - u^{17} + \cdots - 4u + 1 \rangle$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 65 representations.

[1]The 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`).

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

**I.**

$\boldsymbol{I_1^u = \langle 3.56\times10^{66}u^{46}+1.39\times10^{67}u^{45}+\cdots+1.36\times10^{68}b-1.96\times10^{67},\ -2.47\times10^{68}u^{46}-9.95\times10^{68}u^{45}+\cdots+1.49\times10^{69}a+2.99\times10^{69},\ u^{47}+4u^{46}+\cdots+u+11\rangle}$

**(i) Arc colorings**

$$a_5 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_{12} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1\\u^2\end{pmatrix}$$

$$a_1 = \begin{pmatrix}u\\u^3+u\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.165436u^{46}+0.665872u^{45}+\cdots+47.6506u-2.00203\\-0.0262463u^{46}-0.102224u^{45}+\cdots+2.75590u+0.144387\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.0228210u^{46}+0.0919063u^{45}+\cdots+22.9291u+6.98832\\-0.0353642u^{46}-0.136035u^{45}+\cdots-1.25538u+0.587575\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}-u\\u\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.172179u^{46}+0.702253u^{45}+\cdots+49.1886u-1.92623\\-0.0329894u^{46}-0.138604u^{45}+\cdots+1.21792u+0.0685910\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.0344253u^{46}-0.174526u^{45}+\cdots+8.78426u+2.63038\\-0.0166373u^{46}-0.0395220u^{45}+\cdots-0.358128u+0.921788\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.0320584u^{46}-0.155060u^{45}+\cdots-31.9101u+3.00707\\-0.0833370u^{46}-0.330300u^{45}+\cdots-4.63638u+0.105685\end{pmatrix}$$

$$a_7 = \begin{pmatrix}-0.0658054u^{46}-0.226720u^{45}+\cdots-5.52898u-1.15248\\0.0661854u^{46}+0.269634u^{45}+\cdots+2.54666u+0.0845939\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.103828u^{46}+0.400441u^{45}+\cdots+14.9287u-1.57199\\-0.0711995u^{46}-0.276077u^{45}+\cdots-0.849870u+0.420108\end{pmatrix}$$

**(ii) Obstruction class** $= -1$

**(iii) Cusp Shapes** $= -0.0933045u^{46}-0.348811u^{45}+\cdots+5.64696u+9.13255$

**(iv) u-Polynomials at the component**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $u^{47}+56u^{46}+\cdots+13184125u+534361$ |
| $c_2, c_7$ | $u^{47}+2u^{46}+\cdots-315u+731$ |
| $c_3, c_9$ | $u^{47}-u^{46}+\cdots-3782u+667$ |
| $c_4, c_{11}, c_{12}$ | $u^{47}+4u^{46}+\cdots+u+11$ |
| $c_5$ | $u^{47}+8u^{46}+\cdots+151u+149$ |
| $c_6, c_{10}$ | $u^{47}+u^{46}+\cdots+368u-103$ |
| $c_8$ | $u^{47}-4u^{45}+\cdots+23u+3$ |

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $y^{47} - 124y^{46} + \cdots + 5168548507345y - 285541678321$ |
| $c_2, c_7$ | $y^{47} - 56y^{46} + \cdots + 13184125y - 534361$ |
| $c_3, c_9$ | $y^{47} - 9y^{46} + \cdots + 9199640y - 444889$ |
| $c_4, c_{11}, c_{12}$ | $y^{47} + 54y^{46} + \cdots - 10053y - 121$ |
| $c_5$ | $y^{47} + 32y^{46} + \cdots - 1091719y - 22201$ |
| $c_6, c_{10}$ | $y^{47} + 5y^{46} + \cdots + 92988y - 10609$ |
| $c_8$ | $y^{47} - 8y^{46} + \cdots - 113y - 9$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.230731 + 1.086340I$<br>$a = 0.094144 - 1.313970I$<br>$b = 0.243008 + 0.226914I$ | $2.98236 + 2.61578I$ | $1.41474 - 2.87187I$ |
| $u = 0.230731 - 1.086340I$<br>$a = 0.094144 + 1.313970I$<br>$b = 0.243008 - 0.226914I$ | $2.98236 - 2.61578I$ | $1.41474 + 2.87187I$ |
| $u = 0.903444 + 0.695127I$<br>$a = 0.0854529 - 0.0543974I$<br>$b = 0.609527 + 0.047815I$ | $0.73075 + 3.15581I$ | $-8.86017 - 6.34037I$ |
| $u = 0.903444 - 0.695127I$<br>$a = 0.0854529 + 0.0543974I$<br>$b = 0.609527 - 0.047815I$ | $0.73075 - 3.15581I$ | $-8.86017 + 6.34037I$ |
| $u = -0.818444$<br>$a = 0.271814$<br>$b = -1.18073$ | $-3.88729$ | $1.39940$ |
| $u = -0.315844 + 0.740860I$<br>$a = 0.67860 - 1.93996I$<br>$b = -0.053790 + 1.035250I$ | $-7.17929 - 3.64393I$ | $-6.03198 + 2.78404I$ |
| $u = -0.315844 - 0.740860I$<br>$a = 0.67860 + 1.93996I$<br>$b = -0.053790 - 1.035250I$ | $-7.17929 + 3.64393I$ | $-6.03198 - 2.78404I$ |
| $u = 0.660176 + 0.415759I$<br>$a = -0.815252 - 0.503616I$<br>$b = -0.269834 + 0.274621I$ | $0.54494 + 2.07931I$ | $-3.70506 - 3.58771I$ |
| $u = 0.660176 - 0.415759I$<br>$a = -0.815252 + 0.503616I$<br>$b = -0.269834 - 0.274621I$ | $0.54494 - 2.07931I$ | $-3.70506 + 3.58771I$ |
| $u = -0.259697 + 1.247040I$<br>$a = 1.70284 - 1.07261I$<br>$b = -1.80846 + 0.76841I$ | $-7.62776 - 3.97997I$ | $0$ |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.259697-1.247040I$<br>$a=\ \ 1.70284+1.07261I$<br>$b=-1.80846-0.76841I$ | $-7.62776+3.97997I$ | 0 |
| $u=-1.048870+0.734928I$<br>$a=-0.199629+0.382583I$<br>$b=-0.707111-0.228325I$ | $-6.81414-8.86603I$ | 0 |
| $u=-1.048870-0.734928I$<br>$a=-0.199629-0.382583I$<br>$b=-0.707111+0.228325I$ | $-6.81414+8.86603I$ | 0 |
| $u=\ \ 0.101342+1.311880I$<br>$a=-0.412441+0.121949I$<br>$b=\ \ 0.688238+1.091370I$ | $-1.93463-1.62052I$ | 0 |
| $u=\ \ 0.101342-1.311880I$<br>$a=-0.412441-0.121949I$<br>$b=\ \ 0.688238-1.091370I$ | $-1.93463+1.62052I$ | 0 |
| $u=-0.16958+1.41249I$<br>$a=-1.68224+0.29426I$<br>$b=\ \ 2.51973+0.29584I$ | $-4.53442-4.80175I$ | 0 |
| $u=-0.16958-1.41249I$<br>$a=-1.68224-0.29426I$<br>$b=\ \ 2.51973-0.29584I$ | $-4.53442+4.80175I$ | 0 |
| $u=\ \ 0.009774+0.569826I$<br>$a=-0.14382+2.50997I$<br>$b=-1.11181-1.45066I$ | $-6.39394+2.76050I$ | $-5.07909-4.30524I$ |
| $u=\ \ 0.009774-0.569826I$<br>$a=-0.14382-2.50997I$<br>$b=-1.11181+1.45066I$ | $-6.39394-2.76050I$ | $-5.07909+4.30524I$ |
| $u=\ \ 0.24676+1.41083I$<br>$a=-0.974844+0.134792I$<br>$b=\ \ 1.208570-0.117394I$ | $-1.56923+2.42458I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.24676 - 1.41083I$<br>$a = -0.974844 - 0.134792I$<br>$b = 1.208570 + 0.117394I$ | $-1.56923 - 2.42458I$ | 0 |
| $u = 0.360762 + 0.434634I$<br>$a = 0.637654 - 0.160116I$<br>$b = 0.121281 - 1.284990I$ | $5.11013 - 0.60703I$ | $1.28346 - 3.49418I$ |
| $u = 0.360762 - 0.434634I$<br>$a = 0.637654 + 0.160116I$<br>$b = 0.121281 + 1.284990I$ | $5.11013 + 0.60703I$ | $1.28346 + 3.49418I$ |
| $u = 0.26561 + 1.41132I$<br>$a = 1.54991 - 0.05070I$<br>$b = -2.44053 + 0.39781I$ | $-5.19455 + 5.50491I$ | 0 |
| $u = 0.26561 - 1.41132I$<br>$a = 1.54991 + 0.05070I$<br>$b = -2.44053 - 0.39781I$ | $-5.19455 - 5.50491I$ | 0 |
| $u = -0.125509 + 0.520647I$<br>$a = -0.765539 - 0.405108I$<br>$b = -0.309014 + 0.532780I$ | $-0.839180 + 0.890051I$ | $-6.16723 - 4.38006I$ |
| $u = -0.125509 - 0.520647I$<br>$a = -0.765539 + 0.405108I$<br>$b = -0.309014 - 0.532780I$ | $-0.839180 - 0.890051I$ | $-6.16723 + 4.38006I$ |
| $u = -0.435533 + 0.178866I$<br>$a = 1.50551 - 0.63819I$<br>$b = 0.574481 - 0.251116I$ | $0.66530 - 2.58665I$ | $-6.41102 + 3.60115I$ |
| $u = -0.435533 - 0.178866I$<br>$a = 1.50551 + 0.63819I$<br>$b = 0.574481 + 0.251116I$ | $0.66530 + 2.58665I$ | $-6.41102 - 3.60115I$ |
| $u = -0.08203 + 1.58782I$<br>$a = 1.268210 - 0.226418I$<br>$b = -1.97982 - 0.29031I$ | $-8.01777 - 0.17418I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.08203-1.58782I$<br>$a=\ \ 1.268210+0.226418I$<br>$b=-1.97982+0.29031I$ | $-8.01777+0.17418I$ | 0 |
| $u=-0.11259+1.60042I$<br>$a=\ \ 0.729677-0.296946I$<br>$b=-1.135860+0.762303I$ | $-4.00355+1.63505I$ | 0 |
| $u=-0.11259-1.60042I$<br>$a=\ \ 0.729677+0.296946I$<br>$b=-1.135860-0.762303I$ | $-4.00355-1.63505I$ | 0 |
| $u=\ \ 0.03550+1.61092I$<br>$a=\ \ 1.29442+0.57703I$<br>$b=-1.86006+0.22479I$ | $-14.1356+3.0975I$ | 0 |
| $u=\ \ 0.03550-1.61092I$<br>$a=\ \ 1.29442-0.57703I$<br>$b=-1.86006-0.22479I$ | $-14.1356-3.0975I$ | 0 |
| $u=-0.12802+1.62058I$<br>$a=-1.292130-0.127233I$<br>$b=\ \ 2.04273-0.55165I$ | $-15.2468-5.5387I$ | 0 |
| $u=-0.12802-1.62058I$<br>$a=-1.292130+0.127233I$<br>$b=\ \ 2.04273+0.55165I$ | $-15.2468+5.5387I$ | 0 |
| $u=\ \ 0.25028+1.64833I$<br>$a=-1.240380+0.010109I$<br>$b=\ \ 1.92318-0.59872I$ | $-7.20599+7.37595I$ | 0 |
| $u=\ \ 0.25028-1.64833I$<br>$a=-1.240380-0.010109I$<br>$b=\ \ 1.92318+0.59872I$ | $-7.20599-7.37595I$ | 0 |
| $u=-1.40824+0.91175I$<br>$a=-0.059175-0.279970I$<br>$b=\ \ 0.184771-0.022624I$ | $-6.49736+1.06394I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-1.40824-0.91175I$<br>$a=-0.059175+0.279970I$<br>$b=\ \ 0.184771+0.022624I$ | $-6.49736-1.06394I$ | 0 |
| $u=-0.35417+1.64601I$<br>$a=\ \ 1.48951+0.08896I$<br>$b=-2.26832-0.64624I$ | $-14.5107-14.0705I$ | 0 |
| $u=-0.35417-1.64601I$<br>$a=\ \ 1.48951-0.08896I$<br>$b=-2.26832+0.64624I$ | $-14.5107+14.0705I$ | 0 |
| $u=-0.25743+1.76322I$<br>$a=-1.194790-0.225335I$<br>$b=\ \ 1.92781+0.54097I$ | $-16.0072-4.6010I$ | 0 |
| $u=-0.25743-1.76322I$<br>$a=-1.194790+0.225335I$<br>$b=\ \ 1.92781-0.54097I$ | $-16.0072+4.6010I$ | 0 |
| $u=\ \ 0.042363+0.155552I$<br>$a=-4.48250+6.51526I$<br>$b=-0.008354+0.583528I$ | $2.00944+2.36150I$ | $6.99099+1.74215I$ |
| $u=\ \ 0.042363-0.155552I$<br>$a=-4.48250-6.51526I$<br>$b=-0.008354-0.583528I$ | $2.00944-2.36150I$ | $6.99099-1.74215I$ |

**II.**

$\boldsymbol{I_2^u = \langle -4u^{16}+4u^{15}+\cdots+b-4,\ -2u^{17}+2u^{16}+\cdots+a-4,\ u^{18}-u^{17}+\cdots-4u+1\rangle}$

**(i) Arc colorings**

$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} u \\ u^3+u \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 2u^{17}-2u^{16}+\cdots-8u+4 \\ 4u^{16}-4u^{15}+\cdots-19u+4 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 2u^{17}-6u^{16}+\cdots+30u-2 \\ 4u^{16}-3u^{15}+\cdots-12u+5 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -u \\ u \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 5u^{17}+37u^{15}+\cdots-22u+8 \\ -3u^{17}+2u^{16}+\cdots+7u^2-5u \end{pmatrix}$$

$$a_6 = \begin{pmatrix} u^{17}+7u^{16}+\cdots-5u+6 \\ -5u^{16}+5u^{15}+\cdots+10u-2 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} u^{17}-5u^{16}+\cdots+18u+1 \\ u^{17}+3u^{16}+\cdots-20u+6 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -3u^{17}+u^{16}+\cdots-3u-3 \\ 2u^{17}-u^{16}+\cdots+5u-2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -6u^{17}+5u^{16}+\cdots+30u-8 \\ 7u^{17}-7u^{16}+\cdots+15u-1 \end{pmatrix}$$

**(ii) Obstruction class** $= 1$

**(iii) Cusp Shapes** $= u^{17}+15u^{16}-6u^{15}+124u^{14}-78u^{13}+428u^{12}-330u^{11}+860u^{10}-804u^9+1204u^8-1198u^7+1236u^6-1032u^5+790u^4-445u^3+213u^2-65u+14$

**(iv) u-Polynomials at the component**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $u^{18} - 15u^{17} + \cdots - 10u + 1$ |
| $c_2$ | $u^{18} - u^{17} + \cdots - 5u^2 + 1$ |
| $c_3$ | $u^{18} + 6u^{16} + \cdots - u + 1$ |
| $c_4$ | $u^{18} - u^{17} + \cdots - 4u + 1$ |
| $c_5$ | $u^{18} + u^{17} + \cdots - 2u + 1$ |
| $c_6$ | $u^{18} + 7u^{16} + \cdots - 3u + 1$ |
| $c_7$ | $u^{18} + u^{17} + \cdots - 5u^2 + 1$ |
| $c_8$ | $u^{18} + 5u^{17} + \cdots + 4u + 1$ |
| $c_9$ | $u^{18} + 6u^{16} + \cdots + u + 1$ |
| $c_{10}$ | $u^{18} + 7u^{16} + \cdots + 3u + 1$ |
| $c_{11}, c_{12}$ | $u^{18} + u^{17} + \cdots + 4u + 1$ |

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $y^{18} - 19y^{17} + \cdots + 6y + 1$ |
| $c_2, c_7$ | $y^{18} - 15y^{17} + \cdots - 10y + 1$ |
| $c_3, c_9$ | $y^{18} + 12y^{17} + \cdots + 11y + 1$ |
| $c_4, c_{11}, c_{12}$ | $y^{18} + 19y^{17} + \cdots + 24y + 1$ |
| $c_5$ | $y^{18} + 13y^{17} + \cdots + 22y + 1$ |
| $c_6, c_{10}$ | $y^{18} + 14y^{17} + \cdots + 15y + 1$ |
| $c_8$ | $y^{18} - 11y^{17} + \cdots + 12y + 1$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = \ 0.047457 + 1.260530I$<br>$a = -0.463361 - 0.372899I$<br>$b = \ 0.75763 + 1.65026I$ | $-1.07422 - 1.82174I$ | $2.53563 + 3.44461I$ |
| $u = \ 0.047457 - 1.260530I$<br>$a = -0.463361 + 0.372899I$<br>$b = \ 0.75763 - 1.65026I$ | $-1.07422 + 1.82174I$ | $2.53563 - 3.44461I$ |
| $u = \ 0.624909 + 0.377226I$<br>$a = -1.085780 - 0.083376I$<br>$b = -0.359942 + 0.016839I$ | $1.55326 + 2.89712I$ | $3.21609 - 6.87440I$ |
| $u = \ 0.624909 - 0.377226I$<br>$a = -1.085780 + 0.083376I$<br>$b = -0.359942 - 0.016839I$ | $1.55326 - 2.89712I$ | $3.21609 + 6.87440I$ |
| $u = -0.811576 + 0.982182I$<br>$a = -0.203378 - 0.578815I$<br>$b = \ 0.041786 + 0.805202I$ | $-5.97620 + 1.12633I$ | $-2.64487 - 2.46137I$ |
| $u = -0.811576 - 0.982182I$<br>$a = -0.203378 + 0.578815I$<br>$b = \ 0.041786 - 0.805202I$ | $-5.97620 - 1.12633I$ | $-2.64487 + 2.46137I$ |
| $u = -0.248975 + 1.257170I$<br>$a = -1.70042 + 1.40960I$<br>$b = \ 2.26145 - 1.10023I$ | $-8.03080 - 4.68996I$ | $-8.61446 + 8.30623I$ |
| $u = -0.248975 - 1.257170I$<br>$a = -1.70042 - 1.40960I$<br>$b = \ 2.26145 + 1.10023I$ | $-8.03080 + 4.68996I$ | $-8.61446 - 8.30623I$ |
| $u = \ 0.310491 + 0.635862I$<br>$a = -0.93533 + 1.31096I$<br>$b = -0.187193 - 0.083340I$ | $1.60805 + 2.77366I$ | $-4.09387 - 6.07484I$ |
| $u = \ 0.310491 - 0.635862I$<br>$a = -0.93533 - 1.31096I$<br>$b = -0.187193 + 0.083340I$ | $1.60805 - 2.77366I$ | $-4.09387 + 6.07484I$ |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.014631 + 1.305350I$<br>$a = 0.630377 - 1.122440I$<br>$b = -0.846119 + 0.087531I$ | $1.59046 - 1.08301I$ | $-3.32575 + 0.28729I$ |
| $u = 0.014631 - 1.305350I$<br>$a = 0.630377 + 1.122440I$<br>$b = -0.846119 - 0.087531I$ | $1.59046 + 1.08301I$ | $-3.32575 - 0.28729I$ |
| $u = 0.20726 + 1.40864I$<br>$a = 1.66745 - 0.04254I$<br>$b = -2.57675 + 0.57229I$ | $-3.94351 + 5.76224I$ | $-0.19696 - 7.32113I$ |
| $u = 0.20726 - 1.40864I$<br>$a = 1.66745 + 0.04254I$<br>$b = -2.57675 - 0.57229I$ | $-3.94351 - 5.76224I$ | $-0.19696 + 7.32113I$ |
| $u = 0.29358 + 1.54080I$<br>$a = -0.716837 + 0.233224I$<br>$b = 1.191490 - 0.331330I$ | $-2.32605 + 2.81106I$ | $-7.01886 - 6.08609I$ |
| $u = 0.29358 - 1.54080I$<br>$a = -0.716837 - 0.233224I$<br>$b = 1.191490 + 0.331330I$ | $-2.32605 - 2.81106I$ | $-7.01886 + 6.08609I$ |
| $u = 0.062225 + 0.316348I$<br>$a = 1.80727 - 1.62985I$<br>$b = -0.282355 - 1.294230I$ | $5.08446 + 1.31343I$ | $0.64304 - 6.49722I$ |
| $u = 0.062225 - 0.316348I$<br>$a = 1.80727 + 1.62985I$<br>$b = -0.282355 + 1.294230I$ | $5.08446 - 1.31343I$ | $0.64304 + 6.49722I$ |

**III. u-Polynomials**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $(u^{18}-15u^{17}+\cdots-10u+1)$ $\cdot(u^{47}+56u^{46}+\cdots+13184125u+534361)$ |
| $c_2$ | $(u^{18}-u^{17}+\cdots-5u^2+1)(u^{47}+2u^{46}+\cdots-315u+731)$ |
| $c_3$ | $(u^{18}+6u^{16}+\cdots-u+1)(u^{47}-u^{46}+\cdots-3782u+667)$ |
| $c_4$ | $(u^{18}-u^{17}+\cdots-4u+1)(u^{47}+4u^{46}+\cdots+u+11)$ |
| $c_5$ | $(u^{18}+u^{17}+\cdots-2u+1)(u^{47}+8u^{46}+\cdots+151u+149)$ |
| $c_6$ | $(u^{18}+7u^{16}+\cdots-3u+1)(u^{47}+u^{46}+\cdots+368u-103)$ |
| $c_7$ | $(u^{18}+u^{17}+\cdots-5u^2+1)(u^{47}+2u^{46}+\cdots-315u+731)$ |
| $c_8$ | $(u^{18}+5u^{17}+\cdots+4u+1)(u^{47}-4u^{45}+\cdots+23u+3)$ |
| $c_9$ | $(u^{18}+6u^{16}+\cdots+u+1)(u^{47}-u^{46}+\cdots-3782u+667)$ |
| $c_{10}$ | $(u^{18}+7u^{16}+\cdots+3u+1)(u^{47}+u^{46}+\cdots+368u-103)$ |
| $c_{11}, c_{12}$ | $(u^{18}+u^{17}+\cdots+4u+1)(u^{47}+4u^{46}+\cdots+u+11)$ |

**IV. Riley Polynomials**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $(y^{18}-19y^{17}+\cdots+6y+1)$ $\cdot(y^{47}-124y^{46}+\cdots+5168548507345y-285541678321)$ |
| $c_2, c_7$ | $(y^{18}-15y^{17}+\cdots-10y+1)$ $\cdot(y^{47}-56y^{46}+\cdots+13184125y-534361)$ |
| $c_3, c_9$ | $(y^{18}+12y^{17}+\cdots+11y+1)(y^{47}-9y^{46}+\cdots+9199640y-444889)$ |
| $c_4, c_{11}, c_{12}$ | $(y^{18}+19y^{17}+\cdots+24y+1)(y^{47}+54y^{46}+\cdots-10053y-121)$ |
| $c_5$ | $(y^{18}+13y^{17}+\cdots+22y+1)(y^{47}+32y^{46}+\cdots-1091719y-22201)$ |
| $c_6, c_{10}$ | $(y^{18}+14y^{17}+\cdots+15y+1)(y^{47}+5y^{46}+\cdots+92988y-10609)$ |
| $c_8$ | $(y^{18}-11y^{17}+\cdots+12y+1)(y^{47}-8y^{46}+\cdots-113y-9)$ |