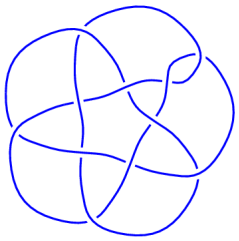
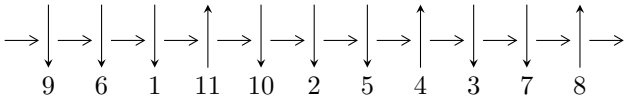
$11a_{327}$ $(K11a_{327})$



1

Arc Sequences



Solving Sequence

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

Representation Ideals

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

$I_1^u = \langle u^{16} + 2u^{15} + 6u^{14} + 8u^{13} + 10u^{12} + 13u^{11} + 7u^{10} + 15u^9 + 5u^8 + 8u^7 + 9u^6 - 4u^5 + 12u^4 - 6u^3 + 7u^2 - u$
$- 118u^{15} - 605u^{14} + \cdots + 1084b - 1589,\ 1471u^{15} + 2455u^{14} + \cdots + 1084a - 3812\rangle$

$I_2^u = \langle u^{25} - 11u^{24} + \cdots + 304u - 32,\ 4223467u^{24} - 37807442u^{23} + \cdots + 7423256b - 83576048,$
$13670437u^{24} - 141520351u^{23} + \cdots + 14846512a + 257642592\rangle$

$I_3^u = \langle 4b^{84} + 4b^{83} + \cdots + 1099480b + 136525,$
$2.12843 \times 10^{499}u + 2.07533 \times 10^{495}b^{83} + \cdots + 8.34555 \times 10^{499}b - 3.56359 \times 10^{499},$
$5.44002 \times 10^{495}b^{83} + 7.02918 \times 10^{495}b^{82} + \cdots + 2.12843 \times 10^{499}a + 3.72674 \times 10^{500}\rangle$

There are 3 irreducible components with 125 representations.

[1] The knot diagram image is adapter from "C. Livingston and A. H. Moore, KnotInfo: Table of Knot Invariants, http://www.indiana.edu/ knotinfo"

I. $I_1^u = \langle u^{16}+2u^{15}+\cdots-u+1,\ -118u^{15}-605u^{14}+\cdots+1084b-1589,\ 1471u^{15}+2455u^{14}+\cdots+1084a-3812\rangle$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}-1.35701u^{15}-2.26476u^{14}+\cdots-8.35886u+3.51661\\0.108856u^{15}+0.558118u^{14}+\cdots+0.584871u+1.46587\end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix}-1.46587u^{15}-2.82288u^{14}+\cdots-8.94373u+2.05074\\0.108856u^{15}+0.558118u^{14}+\cdots+0.584871u+1.46587\end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix}-2.16513u^{15}-4.00554u^{14}+\cdots-10.8533u+2.94373\\0.416974u^{15}+1.04889u^{14}+\cdots+1.57934u+0.788745\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.758303u^{15}-2.07011u^{14}+\cdots+2.85793u-3.04613\\-0.857934u^{15}-1.41144u^{14}+\cdots-3.84686u-0.0996310\end{pmatrix}$$

$$a_4 = \begin{pmatrix}1.52768u^{15}+4.90037u^{14}+\cdots+2.14022u+5.48708\\1.21771u^{15}+2.61624u^{14}+\cdots+5.16974u-0.568266\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-1.54520u^{15}-1.93727u^{14}+\cdots-11.4124u+3.55443\\1.15314u^{15}+2.59871u^{14}+\cdots+3.00923u+1.54520\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.904982u^{15}+0.642066u^{14}+\cdots+6.23524u-5.72232\\-0.863469u^{15}-2.04151u^{14}+\cdots-4.77491u-0.0470480\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.904982u^{15}+0.642066u^{14}+\cdots+6.23524u-5.72232\\-0.863469u^{15}-2.04151u^{14}+\cdots-4.77491u-0.0470480\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.320927-0.057937I$ $a=\ \ 0.049997+0.176366I$ $b=\ \ 0.296950+0.681335I$	$-1.55964-5.26639I$	$-1.17081+11.68071I$
$u=-1.320927+0.057937I$ $a=\ \ 0.049997-0.176366I$ $b=\ \ 0.296950-0.681335I$	$-1.55964+5.26639I$	$-1.17081-11.68071I$
$u=-0.475337-1.308181I$ $a=\ \ 0.05080-1.48749I$ $b=-0.94213-1.12810I$	$3.22523-10.87134I$	$-2.52543+9.79507I$
$u=-0.475337+1.308181I$ $a=\ \ 0.05080+1.48749I$ $b=-0.94213+1.12810I$	$3.22523+10.87134I$	$-2.52543-9.79507I$
$u=-0.34720-1.51741I$ $a=-0.233224+0.991181I$ $b=\ \ 0.373763+0.883748I$	$4.03350-1.05064I$	$-2.08398-8.23407I$
$u=-0.34720+1.51741I$ $a=-0.233224-0.991181I$ $b=\ \ 0.373763-0.883748I$	$4.03350+1.05064I$	$-2.08398+8.23407I$
$u=-0.236683-1.046654I$ $a=-0.89838+1.29346I$ $b=\ \ 0.316989+1.265438I$	$6.29877-0.99707I$	$2.79381+0.26391I$
$u=-0.236683+1.046654I$ $a=-0.89838-1.29346I$ $b=\ \ 0.316989-1.265438I$	$6.29877+0.99707I$	$2.79381-0.26391I$
$u=-0.001694-0.451366I$ $a=\ \ 1.49007+2.58972I$ $b=\ \ 1.224620-0.124413I$	$-1.17125+8.19000I$	$-3.99419-8.09299I$
$u=-0.001694+0.451366I$ $a=\ \ 1.49007-2.58972I$ $b=\ \ 1.224620+0.124413I$	$-1.17125-8.19000I$	$-3.99419+8.09299I$

Solution to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.127924 - 0.951196I$ $a = 0.75556 - 1.84843I$ $b = -0.443544 - 1.220863I$	$1.55850 + 0.57188I$	$-4.03325 - 0.08278I$
$u = 0.127924 + 0.951196I$ $a = 0.75556 + 1.84843I$ $b = -0.443544 + 1.220863I$	$1.55850 - 0.57188I$	$-4.03325 + 0.08278I$
$u = 0.576501 - 0.749960I$ $a = -0.366716 - 0.926226I$ $b = -0.404942 - 0.356891I$	$-2.90623 + 2.39320I$	$-11.15335 - 3.39673I$
$u = 0.576501 + 0.749960I$ $a = -0.366716 + 0.926226I$ $b = -0.404942 + 0.356891I$	$-2.90623 - 2.39320I$	$-11.15335 + 3.39673I$
$u = 0.677411 - 0.413884I$ $a = -0.848108 - 0.361986I$ $b = -0.421709 - 0.040976I$	$-2.89915 + 2.26107I$	$-9.33280 - 4.93182I$
$u = 0.677411 + 0.413884I$ $a = -0.848108 + 0.361986I$ $b = -0.421709 + 0.040976I$	$-2.89915 - 2.26107I$	$-9.33280 + 4.93182I$

II.

$\boldsymbol{I_2^u = \langle u^{25}-11u^{24}+\cdots+304u-32,\ 4.22\times10^6u^{24}-3.78\times10^7u^{23}+\cdots+7.42\times10^6b-8.36\times10^7,\ 1.37\times10^7u^{24}-1.42\times10^8u^{23}+\cdots+1.48\times10^7a+2.58\times10^8\rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix}-0.920784u^{24}+9.53223u^{23}+\cdots+166.203u-17.3537\\-0.568951u^{24}+5.09311u^{23}+\cdots-78.3450u+11.2587\end{pmatrix}$$

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

$$a_{10} = \begin{pmatrix}-0.351834u^{24}+4.43912u^{23}+\cdots+244.548u-28.6124\\-0.568951u^{24}+5.09311u^{23}+\cdots-78.3450u+11.2587\end{pmatrix}$$

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

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

$$a_{11} = \begin{pmatrix}-0.311972u^{24}+4.00378u^{23}+\cdots+299.653u-35.2367\\0.193459u^{24}-1.38617u^{23}+\cdots-133.771u+17.7825\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.238111u^{24}-2.57557u^{23}+\cdots-106.961u+13.9134\\0.327721u^{24}-3.23356u^{23}+\cdots-37.2874u+2.86752\end{pmatrix}$$

$$a_4 = \begin{pmatrix}0.235672u^{24}-2.80148u^{23}+\cdots-87.9695u+9.74840\\0.385907u^{24}-4.21997u^{23}+\cdots-89.8332u+10.0411\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.250673u^{24}+3.42364u^{23}+\cdots+197.791u-19.2950\\-0.666229u^{24}+6.50123u^{23}+\cdots-55.9098u+8.02155\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.277406u^{24}+3.01578u^{23}+\cdots+199.144u-23.7794\\0.407062u^{24}-3.82704u^{23}+\cdots-156.312u+19.3641\end{pmatrix}$$

$$a_8 = \begin{pmatrix}-0.277406u^{24}+3.01578u^{23}+\cdots+199.144u-23.7794\\0.407062u^{24}-3.82704u^{23}+\cdots-156.312u+19.3641\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.142136-0.259514I$ $a=\ 0.239274+0.396714I$ $b=\ 0.107080+0.227533I$	$-1.89203-4.73023I$	$-8.60021+1.58329I$
$u=-1.142136+0.259514I$ $a=\ 0.239274-0.396714I$ $b=\ 0.107080-0.227533I$	$-1.89203+4.73023I$	$-8.60021-1.58329I$
$u=\ 0.071145-1.244999I$ $a=\ 0.50281+1.41958I$ $b=-0.423255+1.132533I$	$6.44614+2.45412I$	$2.40382-6.69375I$
$u=\ 0.071145+1.244999I$ $a=\ 0.50281-1.41958I$ $b=-0.423255-1.132533I$	$6.44614-2.45412I$	$2.40382+6.69375I$
$u=\ 0.139855-0.499323I$ $a=-1.35268+1.02321I$ $b=-0.692947-0.549349I$	$1.59913+1.70507I$	$2.11756-1.16667I$
$u=\ 0.139855+0.499323I$ $a=-1.35268-1.02321I$ $b=-0.692947+0.549349I$	$1.59913-1.70507I$	$2.11756+1.16667I$
$u=\ 0.20692-1.46356I$ $a=-0.578558-0.896748I$ $b=\ 0.060667-0.945670I$	$6.31210-7.97978I$	$0.59190+6.19914I$
$u=\ 0.20692+1.46356I$ $a=-0.578558+0.896748I$ $b=\ 0.060667+0.945670I$	$6.31210+7.97978I$	$0.59190-6.19914I$
$u=\ 0.25168-1.49957I$ $a=\ 0.225756+1.022503I$ $b=-0.380309+0.870607I$	$3.88935+1.44009I$	$-9.35211-8.90381I$
$u=\ 0.25168+1.49957I$ $a=\ 0.225756-1.022503I$ $b=-0.380309-0.870607I$	$3.88935-1.44009I$	$-9.35211+8.90381I$

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \ 0.415596 - 0.889012I$ $a = -0.75041 + 2.44597I$ $b = -2.28411 + 0.59368I$	$1.61415 + 1.93498I$	$-3.0424 - 31.4661I$
$u = \ 0.415596 + 0.889012I$ $a = -0.75041 - 2.44597I$ $b = -2.28411 - 0.59368I$	$1.61415 - 1.93498I$	$-3.0424 + 31.4661I$
$u = \ 0.461512$ $a = -0.700395$ $b = \ 0.600275$	-0.923370	-10.5985
$u = \ 0.634694 - 1.156466I$ $a = -0.292690 - 1.014492I$ $b = \ 0.577648 - 0.992658I$	$-0.75795 + 4.50706I$	$-7.57070 - 5.07072I$
$u = \ 0.634694 + 1.156466I$ $a = -0.292690 + 1.014492I$ $b = \ 0.577648 + 0.992658I$	$-0.75795 - 4.50706I$	$-7.57070 + 5.07072I$
$u = \ 0.63878 - 1.29685I$ $a = \ 0.30164 + 1.60022I$ $b = -0.90357 + 1.49711I$	$3.3047 + 19.2356I$	$-2.92755 - 10.21183I$
$u = \ 0.63878 + 1.29685I$ $a = \ 0.30164 - 1.60022I$ $b = -0.90357 - 1.49711I$	$3.3047 - 19.2356I$	$-2.92755 + 10.21183I$
$u = \ 0.64308 - 1.34654I$ $a = -0.246385 - 1.377694I$ $b = \ 0.75490 - 1.29527I$	$0.99069 + 10.76889I$	$-7.04060 - 8.50753I$
$u = \ 0.64308 + 1.34654I$ $a = -0.246385 + 1.377694I$ $b = \ 0.75490 + 1.29527I$	$0.99069 - 10.76889I$	$-7.04060 + 8.50753I$
$u = \ 1.003879 - 0.591915I$ $a = -0.302301 + 0.033928I$ $b = -0.362965 - 0.476392I$	$-2.76859 + 1.48183I$	$-6.65987 + 5.81420I$

Solution to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.003879 + 0.591915I$ $a = -0.302301 - 0.033928I$ $b = -0.362965 + 0.476392I$	$-2.76859 - 1.48183I$	$-6.65987 - 5.81420I$
$u = 1.142396 - 0.260296I$ $a = 0.322318 + 0.054419I$ $b = 0.682781 + 1.095501I$	$0.01107 - 12.92327I$	$-4.84732 + 8.19604I$
$u = 1.142396 + 0.260296I$ $a = 0.322318 - 0.054419I$ $b = 0.682781 - 1.095501I$	$0.01107 + 12.92327I$	$-4.84732 - 8.19604I$
$u = 1.263362 - 0.222570I$ $a = -0.218584 - 0.142473I$ $b = -0.436055 - 0.867239I$	$-2.66023 - 4.12938I$	$-8.27327 + 5.73297I$
$u = 1.263362 + 0.222570I$ $a = -0.218584 + 0.142473I$ $b = -0.436055 + 0.867239I$	$-2.66023 + 4.12938I$	$-8.27327 - 5.73297I$

III. $\boldsymbol{I_3^u = \langle 4b^{84} + 4b^{83} + \cdots + 1099480b + 136525,\ 2.13 \times 10^{499}u + 2.08 \times 10^{495}b^{83} + \cdots + 8.35 \times 10^{499}b - 3.56 \times 10^{499},\ 5.44 \times 10^{495}b^{83} + 7.03 \times 10^{495}b^{82} + \cdots + 2.13 \times 10^{499}a + 3.73 \times 10^{500} \rangle}$

(i) Arc colorings

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

$$a_9 = \begin{pmatrix} -0.000255589b^{83} - 0.000330252b^{82} + \cdots - 131.553b - 17.5094 \\ b \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ -0.0000975054b^{83} - 0.0000530488b^{82} + \cdots - 3.92100b + 1.67428 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.000255589b^{83} - 0.000330252b^{82} + \cdots - 132.553b - 17.5094 \\ b \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 1 \\ 0.000100360b^{83} + 0.000129026b^{82} + \cdots + 52.0471b + 6.89517 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0.0000975054b^{83} + 0.0000530488b^{82} + \cdots + 3.92100b - 1.67428 \\ -0.000288805b^{83} - 0.000322042b^{82} + \cdots - 113.858b - 14.9293 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.000464830b^{83} - 0.000329831b^{82} + \cdots - 120.754b - 14.0095 \\ 0.000354981b^{83} + 0.000237222b^{82} + \cdots + 50.5132b + 3.83604 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.000388353b^{83} - 0.000407257b^{82} + \cdots - 253.819b - 35.1028 \\ 0.000227488b^{83} + 0.000163852b^{82} + \cdots + 88.2557b + 12.9908 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.000707012b^{83} + 0.000430181b^{82} + \cdots + 218.907b + 38.3831 \\ 0.000280353b^{83} - 0.000147671b^{82} + \cdots - 40.6354b - 8.12014 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.000267405b^{83} + 0.000401929b^{82} + \cdots + 200.346b + 34.0234 \\ -0.0000958036b^{83} - 0.0000908327b^{82} + \cdots - 25.5969b - 2.84039 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.00183988b^{83} + 0.00126289b^{82} + \cdots + 888.242b + 133.246 \\ -0.000298688b^{83} - 0.000393869b^{82} + \cdots - 158.480b - 23.3441 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.00183988b^{83} + 0.00126289b^{82} + \cdots + 888.242b + 133.246 \\ -0.000298688b^{83} - 0.000393869b^{82} + \cdots - 158.480b - 23.3441 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.325948+0.949697I$ $a=-0.940787+0.260574I$ $b=-1.90554-0.17555I$	$-0.63873+10.04908I$	$-4.01954-9.88636I$
$u=-0.325948-0.949697I$ $a=-0.940787-0.260574I$ $b=-1.90554+0.17555I$	$-0.63873-10.04908I$	$-4.01954+9.88636I$
$u=\ \ 0.257956+0.918905I$ $a=-0.467480-1.122523I$ $b=-1.325233-0.089665I$	$1.73911-1.92391I$	$0.68192+8.36291I$
$u=\ \ 0.257956-0.918905I$ $a=-0.467480+1.122523I$ $b=-1.325233+0.089665I$	$1.73911+1.92391I$	$0.68192-8.36291I$
$u=-0.382825+0.638516I$ $a=\ \ 0.120537+0.189700I$ $b=-1.268270-0.583454I$	$-1.54662-6.94396I$	$-6.14826+1.80846I$
$u=-0.382825-0.638516I$ $a=\ \ 0.120537-0.189700I$ $b=-1.268270+0.583454I$	$-1.54662+6.94396I$	$-6.14826-1.80846I$
$u=\ \ 0.257956+0.918905I$ $a=-0.70463-1.83321I$ $b=-1.170361-0.521761I$	$1.73911-1.92391I$	$0.68192+8.36291I$
$u=\ \ 0.257956-0.918905I$ $a=-0.70463+1.83321I$ $b=-1.170361+0.521761I$	$1.73911+1.92391I$	$0.68192-8.36291I$
$u=-0.230795-1.303583I$ $a=-0.560005-0.862815I$ $b=-1.056683-0.907345I$	$3.16694+0.26769I$	$-3.51244-7.69633I$
$u=-0.230795+1.303583I$ $a=-0.560005+0.862815I$ $b=-1.056683+0.907345I$	$3.16694-0.26769I$	$-3.51244+7.69633I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.538797 - 0.860840I$ $a = -0.726255 - 0.178629I$ $b = -1.056453 - 0.455695I$	$-1.79973 + 4.25346I$	$-6.96363 - 7.82606I$
$u = \quad 0.538797 + 0.860840I$ $a = -0.726255 + 0.178629I$ $b = -1.056453 + 0.455695I$	$-1.79973 - 4.25346I$	$-6.96363 + 7.82606I$
$u = -0.543373 - 1.232312I$ $a = \quad 0.43502 - 1.62525I$ $b = -0.92409 - 1.39700I$	$5.50034 - 10.51418I$	$1.55774 + 8.23782I$
$u = -0.543373 + 1.232312I$ $a = \quad 0.43502 + 1.62525I$ $b = -0.92409 + 1.39700I$	$5.50034 + 10.51418I$	$1.55774 - 8.23782I$
$u = \quad 0.112450 + 0.998802I$ $a = -1.02813 - 3.66767I$ $b = -0.82744 - 3.21240I$	$1.74133 - 0.33747I$	$2.7137 - 43.4048I$
$u = \quad 0.112450 - 0.998802I$ $a = -1.02813 + 3.66767I$ $b = -0.82744 + 3.21240I$	$1.74133 + 0.33747I$	$2.7137 + 43.4048I$
$u = -0.895252 + 0.152881I$ $a = -0.310722 + 0.247688I$ $b = -0.781616 - 0.996525I$	$2.24777 - 5.28258I$	$-1.79836 + 5.79106I$
$u = -0.895252 - 0.152881I$ $a = -0.310722 - 0.247688I$ $b = -0.781616 + 0.996525I$	$2.24777 + 5.28258I$	$-1.79836 - 5.79106I$
$u = -0.592284 - 1.279269I$ $a = \quad 0.26373 - 1.61497I$ $b = -0.70770 - 1.24518I$	$0.72340 - 10.65261I$	$-6.54853 + 8.70208I$
$u = -0.592284 + 1.279269I$ $a = \quad 0.26373 + 1.61497I$ $b = -0.70770 + 1.24518I$	$0.72340 + 10.65261I$	$-6.54853 - 8.70208I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.083123+0.207022I$ $a=-0.150482+0.387750I$ $b=-0.547149-0.417123I$	$-2.65956-4.72365I$	$-10.86372+6.28405I$
$u=-1.083123-0.207022I$ $a=-0.150482-0.387750I$ $b=-0.547149+0.417123I$	$-2.65956+4.72365I$	$-10.86372-6.28405I$
$u=-0.359732-1.156404I$ $a=\ \ 0.956815-0.914259I$ $b=-0.496667-0.864751I$	$6.25056-3.50676I$	$2.56759+4.89365I$
$u=-0.359732+1.156404I$ $a=\ \ 0.956815+0.914259I$ $b=-0.496667+0.864751I$	$6.25056+3.50676I$	$2.56759-4.89365I$
$u=\ \ 0.49310+1.49129I$ $a=\ \ 0.255569-0.593888I$ $b=-0.494575-0.654345I$	$4.60778-1.63835I$	$8.16519+1.25101I$
$u=\ \ 0.49310-1.49129I$ $a=\ \ 0.255569+0.593888I$ $b=-0.494575+0.654345I$	$4.60778+1.63835I$	$8.16519-1.25101I$
$u=\ \ 0.112450-0.998802I$ $a=\ \ 2.83594+0.20884I$ $b=-0.432158-0.251649I$	$1.74133+0.33747I$	$2.7137+43.4048I$
$u=\ \ 0.112450+0.998802I$ $a=\ \ 2.83594-0.20884I$ $b=-0.432158+0.251649I$	$1.74133-0.33747I$	$2.7137-43.4048I$
$u=-0.83407-1.17304I$ $a=\ \ 0.424264-0.463454I$ $b=-0.422188-0.933486I$	$3.47473-3.59921I$	$2.47606+8.54934I$
$u=-0.83407+1.17304I$ $a=\ \ 0.424264+0.463454I$ $b=-0.422188+0.933486I$	$3.47473+3.59921I$	$2.47606-8.54934I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.538797 + 0.860840I$ $a = -0.244863 - 1.254824I$ $b = -0.416419 - 0.134965I$	$-1.79973 - 4.25346I$	$-6.96363 + 7.82606I$
$u = 0.538797 - 0.860840I$ $a = -0.244863 + 1.254824I$ $b = -0.416419 + 0.134965I$	$-1.79973 + 4.25346I$	$-6.96363 - 7.82606I$
$u = 1.102184 + 0.313402I$ $a = -0.217634 + 0.187321I$ $b = -0.413076 - 0.683803I$	$0.59757 - 5.16280I$	$-2.48880 + 8.90244I$
$u = 1.102184 - 0.313402I$ $a = -0.217634 - 0.187321I$ $b = -0.413076 + 0.683803I$	$0.59757 + 5.16280I$	$-2.48880 - 8.90244I$
$u = -0.595370$ $a = -0.878817 + 0.598612I$ $b = -0.327962 - 0.880792I$	2.99475	-0.888107
$u = -0.595370$ $a = -0.878817 - 0.598612I$ $b = -0.327962 + 0.880792I$	2.99475	-0.888107
$u = -0.311468 - 0.567237I$ $a = -0.17888 - 2.45723I$ $b = -0.307092 - 0.785410I$	$-2.83797 + 0.65564I$	$-8.38135 + 1.81835I$
$u = -0.311468 + 0.567237I$ $a = -0.17888 + 2.45723I$ $b = -0.307092 + 0.785410I$	$-2.83797 - 0.65564I$	$-8.38135 - 1.81835I$
$u = 0.49310 + 1.49129I$ $a = 0.214646 - 1.316669I$ $b = -0.279737 - 1.148497I$	$4.60778 - 1.63835I$	$8.16519 + 1.25101I$
$u = 0.49310 - 1.49129I$ $a = 0.214646 + 1.316669I$ $b = -0.279737 + 1.148497I$	$4.60778 + 1.63835I$	$8.16519 - 1.25101I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.298007-0.971824I$ $a=-0.36341-2.23333I$ $b=-0.262197-0.826795I$	$-1.71171-3.49501I$	$-4.54786+6.62152I$
$u=-0.298007+0.971824I$ $a=-0.36341+2.23333I$ $b=-0.262197+0.826795I$	$-1.71171+3.49501I$	$-4.54786-6.62152I$
$u=-0.378608-1.274893I$ $a=\ \ 0.786531-0.642727I$ $b=-0.071669-0.914730I$	$6.70547+0.94792I$	$3.10037-4.13551I$
$u=-0.378608+1.274893I$ $a=\ \ 0.786531+0.642727I$ $b=-0.071669+0.914730I$	$6.70547-0.94792I$	$3.10037+4.13551I$
$u=-0.378608+1.274893I$ $a=-0.696541-1.052948I$ $b=-0.021854-1.197096I$	$6.70547-0.94792I$	$3.10037+4.13551I$
$u=-0.378608-1.274893I$ $a=-0.696541+1.052948I$ $b=-0.021854+1.197096I$	$6.70547+0.94792I$	$3.10037-4.13551I$
$u=-0.230795+1.303583I$ $a=-0.75745-1.32421I$ $b=\ \ 0.056582-0.657739I$	$3.16694-0.26769I$	$-3.51244+7.69633I$
$u=-0.230795-1.303583I$ $a=-0.75745+1.32421I$ $b=\ \ 0.056582+0.657739I$	$3.16694+0.26769I$	$-3.51244-7.69633I$
$u=\ \ 1.102184+0.313402I$ $a=\ \ 0.567558-0.545989I$ $b=\ \ 0.057599-1.021391I$	$0.59757-5.16280I$	$-2.48880+8.90244I$
$u=\ \ 1.102184-0.313402I$ $a=\ \ 0.567558+0.545989I$ $b=\ \ 0.057599+1.021391I$	$0.59757+5.16280I$	$-2.48880-8.90244I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.83407+1.17304I$ $a=-0.543902-1.248190I$ $b=\ \ 0.154633-1.384962I$	$3.47473+3.59921I$	$2.47606-8.54934I$
$u=-0.83407-1.17304I$ $a=-0.543902+1.248190I$ $b=\ \ 0.154633+1.384962I$	$3.47473-3.59921I$	$2.47606+8.54934I$
$u=\ \ 0.396691-1.332606I$ $a=-0.807330-1.106315I$ $b=\ \ 0.390252-0.855186I$	$5.77239+9.91992I$	$1.23850-7.62985I$
$u=\ \ 0.396691+1.332606I$ $a=-0.807330+1.106315I$ $b=\ \ 0.390252+0.855186I$	$5.77239-9.91992I$	$1.23850+7.62985I$
$u=\ \ 0.075659-0.844181I$ $a=-0.05638-3.35598I$ $b=\ \ 0.480607-0.346129I$	$0.946887-0.000924I$	$-0.489674+0.600771I$
$u=\ \ 0.075659+0.844181I$ $a=-0.05638+3.35598I$ $b=\ \ 0.480607+0.346129I$	$0.946887+0.000924I$	$-0.489674-0.600771I$
$u=\ \ 0.512878-0.535469I$ $a=-0.55806-1.62548I$ $b=\ \ 0.552383-0.772469I$	$-2.62567-0.01437I$	$-9.66321-0.05333I$
$u=\ \ 0.512878+0.535469I$ $a=-0.55806+1.62548I$ $b=\ \ 0.552383+0.772469I$	$-2.62567+0.01437I$	$-9.66321+0.05333I$
$u=-0.359732+1.156404I$ $a=-0.22352-1.84250I$ $b=\ \ 0.58012-1.66300I$	$6.25056+3.50676I$	$2.56759-4.89365I$
$u=-0.359732-1.156404I$ $a=-0.22352+1.84250I$ $b=\ \ 0.58012+1.66300I$	$6.25056-3.50676I$	$2.56759+4.89365I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.083123-0.207022I$ $a=\ \ 0.179925-0.324970I$ $b=\ \ 0.596266-0.789658I$	$-2.65956+4.72365I$	$-10.86372-6.28405I$
$u=-1.083123+0.207022I$ $a=\ \ 0.179925+0.324970I$ $b=\ \ 0.596266+0.789658I$	$-2.65956-4.72365I$	$-10.86372+6.28405I$
$u=-0.895252-0.152881I$ $a=-0.051845+0.184557I$ $b=\ \ 0.611785-1.041893I$	$2.24777+5.28258I$	$-1.79836-5.79106I$
$u=-0.895252+0.152881I$ $a=-0.051845-0.184557I$ $b=\ \ 0.611785+1.041893I$	$2.24777-5.28258I$	$-1.79836+5.79106I$
$u=-0.325948+0.949697I$ $a=\ \ 0.27793-2.62585I$ $b=\ \ 0.728641-0.774068I$	$-0.63873+10.04908I$	$-4.01954-9.88636I$
$u=-0.325948-0.949697I$ $a=\ \ 0.27793+2.62585I$ $b=\ \ 0.728641+0.774068I$	$-0.63873-10.04908I$	$-4.01954+9.88636I$
$u=\ \ 0.396691-1.332606I$ $a=\ \ 0.14014-1.58981I$ $b=\ \ 0.80972-1.49628I$	$5.77239+9.91992I$	$1.23850-7.62985I$
$u=\ \ 0.396691+1.332606I$ $a=\ \ 0.14014+1.58981I$ $b=\ \ 0.80972+1.49628I$	$5.77239-9.91992I$	$1.23850+7.62985I$
$u=\ \ 0.0869009$ $a=-10.20497-6.32596I$ $b=\ \ 0.971221-0.505779I$	0.204160	-5.26331
$u=\ \ 0.0869009$ $a=-10.20497+6.32596I$ $b=\ \ 0.971221+0.505779I$	0.204160	-5.26331

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.311468-0.567237I$ $a=-0.304011-0.616187I$ $b=\ \ 0.988256-0.447991I$	$-2.83797+0.65564I$	$-8.38135+1.81835I$
$u=-0.311468+0.567237I$ $a=-0.304011+0.616187I$ $b=\ \ 0.988256+0.447991I$	$-2.83797-0.65564I$	$-8.38135-1.81835I$
$u=-0.543373+1.232312I$ $a=-0.20616-1.76014I$ $b=\ \ 1.01978-1.55082I$	$5.50034+10.51418I$	$1.55774-8.23782I$
$u=-0.543373-1.232312I$ $a=-0.20616+1.76014I$ $b=\ \ 1.01978+1.55082I$	$5.50034-10.51418I$	$1.55774+8.23782I$
$u=-0.382825+0.638516I$ $a=\ \ 0.82150-2.45486I$ $b=\ \ 1.025341-0.590792I$	$-1.54662-6.94396I$	$-6.14826+1.80846I$
$u=-0.382825-0.638516I$ $a=\ \ 0.82150+2.45486I$ $b=\ \ 1.025341+0.590792I$	$-1.54662+6.94396I$	$-6.14826-1.80846I$
$u=\ \ 0.512878-0.535469I$ $a=-0.241407+0.025502I$ $b=\ \ 1.026281-0.157117I$	$-2.62567-0.01437I$	$-9.66321-0.05333I$
$u=\ \ 0.512878+0.535469I$ $a=-0.241407-0.025502I$ $b=\ \ 1.026281+0.157117I$	$-2.62567+0.01437I$	$-9.66321+0.05333I$
$u=-0.592284+1.279269I$ $a=\ \ 0.035976-1.108142I$ $b=\ \ 1.04843-1.02369I$	$0.72340+10.65261I$	$-6.54853-8.70208I$
$u=-0.592284-1.279269I$ $a=\ \ 0.035976+1.108142I$ $b=\ \ 1.04843+1.02369I$	$0.72340-10.65261I$	$-6.54853+8.70208I$

Solution to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.298007 - 0.971824I$ $a = 0.483478 - 0.509375I$ $b = 1.33674 - 0.51752I$	$-1.71171 - 3.49501I$	$-4.54786 + 6.62152I$
$u = -0.298007 + 0.971824I$ $a = 0.483478 + 0.509375I$ $b = 1.33674 + 0.51752I$	$-1.71171 + 3.49501I$	$-4.54786 - 6.62152I$
$u = 0.075659 - 0.844181I$ $a = 2.12412 - 0.75392I$ $b = 2.58149 - 0.22559I$	$0.946887 - 0.000924I$	$-0.489674 + 0.600771I$
$u = 0.075659 + 0.844181I$ $a = 2.12412 + 0.75392I$ $b = 2.58149 + 0.22559I$	$0.946887 + 0.000924I$	$-0.489674 - 0.600771I$

IV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$(u^{16}+2u^{15}+\cdots+4u+12)(u^{25}+2u^{24}+\cdots-5u-1)$ $(u^{84}+3u^{83}+\cdots-3176u+2356)$
c_2	$(u^{16}+2u^{15}+\cdots-u+1)(u^{25}-11u^{24}+\cdots+304u-32)$ $(-1+5u+47u^2+232u^3+789u^4+2155u^5+5044u^6+1.04\times10^4u^7+1.95\times10^4u^8+3.34\times$
c_3, c_7	$(u^{16}+2u^{15}+\cdots+8u+4)(u^{25}+2u^{24}+\cdots-7u-1)$ $(u^{84}+9u^{83}+\cdots+35640u+2484)$
c_4, c_8	$(4u^{16}+14u^{14}+\cdots-3u+1)(u^{25}+6u^{24}+\cdots+2u-1)$ $(4u^{84}+12u^{83}+\cdots-1046u+469)$
c_5, c_9	$(4u^{16}+10u^{14}+\cdots-5u+1)(u^{25}+6u^{24}+\cdots-13u^2-1)$ $(4u^{84}+4u^{83}+\cdots+1099480u+136525)$
c_6	$(u^{16}-2u^{15}+\cdots+u+1)(u^{25}-11u^{24}+\cdots+304u-32)$ $(-1+5u+47u^2+232u^3+789u^4+2155u^5+5044u^6+1.04\times10^4u^7+1.95\times10^4u^8+3.34\times$
c_{10}	$(u^{16}+2u^{15}+\cdots+4u+12)(u^{25}+2u^{24}+\cdots-5u-1)$ $(u^{84}+3u^{83}+\cdots-3176u+2356)$
c_{11}	$(u^{16}+5u^{15}+\cdots-2u+1)(u^{25}-18u^{24}+\cdots-1536u+256)$ $(1+8u+17u^2-38u^3-216u^4-166u^5+704u^6+1294u^7-1489u^8-6526u^9-4443u^{10}+9$

V. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1	$(y^{16}-2y^{15}+\cdots-352y+144)(y^{25}+6y^{24}+\cdots-9y-1)$ $(y^{84}-17y^{83}+\cdots-109199184y+5550736)$
c_2, c_6	$(y^{16}+8y^{15}+\cdots+13y+1)(y^{25}+11y^{24}+\cdots-3328y-1024)$ $(1-119y-1689y^2-1.13\times10^4y^3-4.60\times10^4y^4-1.15\times10^5y^5-1.15\times10^5y^6+4.20\times10$
c_3, c_7	$(y^{16}+4y^{15}+\cdots+48y+16)(y^{25}+22y^{23}+\cdots+17y-1)$ $(y^{84}+23y^{83}+\cdots+232799184y+6170256)$
c_4, c_8	$(16y^{16}+112y^{15}+\cdots+15y+1)(y^{25}-2y^{24}+\cdots-16y-1)$ $(16y^{84}+96y^{83}+\cdots+15097640y+219961)$
c_5	$(16y^{16}+80y^{15}+\cdots-7y+1)(y^{25}+4y^{24}+\cdots-26y-1)$ $(2640y^{84}+47520y^{83}+\cdots+10922345098500y+3075447478125)$
c_9	$(16y^{16}+80y^{15}+\cdots-7y+1)(y^{25}+4y^{24}+\cdots-26y-1)$ $(16y^{84}+288y^{83}+\cdots+66196030900y+18639075625)$
c_{10}	$(y^{16}-2y^{15}+\cdots-352y+144)(y^{25}+6y^{24}+\cdots-9y-1)$ $(y^{84}-17y^{83}+\cdots-109199184y+5550736)$
c_{11}	$(y^{16}+7y^{15}+\cdots-22y+1)(y^{25}+10y^{24}+\cdots+720896y-65536)$ $(1-30y+465y^2-4724y^3+3.43\times10^4y^4-1.88\times10^5y^5+8.10\times10^5y^6-2.78\times10^6y^7+7.$