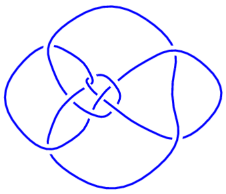
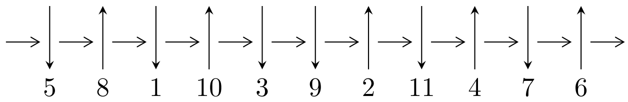
$11a_{332}$ ($K11a_{332}$)



[1]

Arc Sequences



Solving Sequence

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

Representation Ideals

$$I = \bigcap_{i=1}^{13} I_i^u \bigcap I_1^v$$

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

$I_1^u = \langle u+1,\ a,\ b+1\rangle$
$I_2^u = \langle u-1,\ b,\ a+1\rangle$
$I_3^u = \langle b^2-2,\ u-1,\ b+a-1\rangle$
$I_4^u = \langle u^6-2u^5+6u^4-2u^3-5u^2+4u-1,\ -5u^5+8u^4-27u^3-u^2+2a+24u-12,$
$3u^5-4u^4+15u^3+5u^2+2b-14u+4\rangle$
$I_5^u = \langle u^6-3u^5+9u^4-11u^3+9u^2-4u+1,\ u^4-2u^3+6u^2+b-3u+1,$
$-4u^5+10u^4-30u^3+27u^2+a-16u+4\rangle$
$I_6^u = \langle u^{10}-4u^9+15u^8-34u^7+73u^6-129u^5+181u^4-183u^3+178u^2-76u+19,$
$-9051752u^9+27279342u^8+\cdots+378570851b+110381968,$
$-102526041u^9+691747035u^8+\cdots+7192846169a+31232571697\rangle$
$I_7^u = \langle u^{12}-6u^{11}+2u^{10}-78u^9-26u^8-104u^7-989u^6+1102u^5-1594u^4-124u^3-164u^2-62u-1,$
$-1.04725\times10^{19}u^{11}+6.41377\times10^{19}u^{10}+\cdots+1.62733\times10^{20}b+4.45828\times10^{20},$
$-2.75477\times10^{19}u^{11}+1.67228\times10^{20}u^{10}+\cdots+1.62733\times10^{20}a+7.08650\times10^{20}\rangle$
$I_8^u = \langle u^{12}-7u^{11}+24u^{10}-70u^9+138u^8-230u^7+311u^6-270u^5+240u^4-88u^3-17u^2+18u-3,$
$-9861165997u^{11}+65273589404u^{10}+\cdots+11224356627b-86093507253,$
$18524941084u^{11}-123913014567u^{10}+\cdots+11224356627a+140660340585\rangle$
$I_9^u = \langle u^{15}+2u^{14}+\cdots+12u+1,$
$2473476476505u^{14}+4616086686757u^{13}+\cdots+3270598211048b+12327440579065,$
$-12304648532091u^{14}-23253134211769u^{13}+\cdots+3270598211048a-73518748551853\rangle$
$I_{10}^u = \langle u^{36}+3u^{35}+\cdots-12u+1,$
$-3.77354\times10^{94}u^{35}-1.13565\times10^{95}u^{34}+\cdots+3.15905\times10^{95}b+2.45749\times10^{95},$
$2.42058\times10^{95}u^{35}+7.21938\times10^{95}u^{34}+\cdots+3.15905\times10^{95}a-2.85980\times10^{96}\rangle$

$I_{11}^u = \langle u^{36}-10u^{35}+\cdots+3020u-167,$
$6.66307\times10^{125}u^{35}-3.11499\times10^{126}u^{34}+\cdots+3.25580\times10^{128}b-2.85835\times10^{129},$
$4.84664\times10^{129}u^{35}-4.69298\times10^{130}u^{34}+\cdots+5.43719\times10^{130}a+1.08468\times10^{132}\rangle$
$I_{12}^u = \langle u-1,\ b+1,\ a-1\rangle$
$I_{13}^u = \langle u+1,\ a-1,\ b-1\rangle$

$I_1^v = \langle b+1,\ v-1,\ a\rangle$

There are 14 irreducible components with 140 representations.

I. $I_1^u = \langle u+1,\ a,\ b+1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$

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

$$a_7 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$

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

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

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

$$a_8 = \begin{pmatrix} -1 \\ -3 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -1 \\ -3 \end{pmatrix}$$

(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
$u = -1.00000$ $a = \quad 0$ $b = -1.00000$	1.64493	6.00000

II. $I_2^u = \langle u-1,\ b,\ a+1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -1 \\ 0 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

(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
$u = 1.00000$ $a = -1.00000$ $b = 0$	-3.28987	-12.0000

III. $I_3^u = \langle b^2 - 2,\ u - 1,\ b + a - 1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} -b+1 \\ b \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 1 \\ b \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -b+1 \\ -2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 1 \\ b+1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} -2b+3 \\ b-1 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} 1 \\ b+1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} b \\ b+3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} -b \\ -2b-3 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 2 \\ 3b+3 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 2 \\ 3b+3 \end{pmatrix}$$

(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
$u = 1.00000$ $a = 2.41421$ $b = -1.41421$	1.64493	−36.0000
$u = 1.00000$ $a = -0.414214$ $b = 1.41421$	1.64493	−36.0000

IV. $\boldsymbol{I_4^u = \langle u^6 - 2u^5 + 6u^4 - 2u^3 - 5u^2 + 4u - 1,\ -5u^5 + 8u^4 - 27u^3 - u^2 + 2a + 24u - 12,\ 3u^5 - 4u^4 + 15u^3 + 5u^2 + 2b - 14u + 4\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} \frac{5}{2}u^5 - 4u^4 + \frac{27}{2}u^3 + \frac{1}{2}u^2 - 12u + 6 \\ -\frac{3}{2}u^5 + 2u^4 - \frac{15}{2}u^3 - \frac{5}{2}u^2 + 7u - 2 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} u^5 - 2u^4 + 6u^3 - 2u^2 - 5u + 4 \\ -\frac{3}{2}u^5 + 2u^4 - \frac{15}{2}u^3 - \frac{5}{2}u^2 + 7u - 2 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 2u^5 - \frac{5}{2}u^4 + 10u^3 + \frac{7}{2}u^2 - \frac{15}{2}u + 2 \\ -\frac{1}{2}u^4 + \frac{1}{2}u^3 - \frac{5}{2}u^2 - u + \frac{1}{2} \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} u^5 - 2u^4 + 6u^3 - 2u^2 - 5u + 4 \\ -\frac{3}{2}u^5 + 2u^4 - \frac{15}{2}u^3 - \frac{5}{2}u^2 + 8u - 2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} \frac{9}{2}u^5 - \frac{13}{2}u^4 + \cdots - \frac{39}{2}u + 8 \\ -2u^5 + \frac{5}{2}u^4 - 10u^3 - \frac{7}{2}u^2 + \frac{17}{2}u - 2 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -1 \\ u^5 - 2u^4 + 6u^3 - 2u^2 - 5u + 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} 2u^5 - \frac{5}{2}u^4 + 10u^3 + \frac{7}{2}u^2 - \frac{15}{2}u + 1 \\ u^5 - \frac{5}{2}u^4 + \cdots - 6u + \frac{7}{2} \end{pmatrix}$$

$$a_3 = \begin{pmatrix} u^5 - 2u^4 + 6u^3 - 2u^2 - 5u + 4 \\ -2u^5 + 3u^4 - 10u^3 - 2u^2 + 12u - 4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^5 + u^4 - \frac{5}{2}u^3 + \frac{1}{2}u^2 + 5u - 1 \\ -u^5 + \frac{3}{2}u^4 - 5u^3 - \frac{3}{2}u^2 + \frac{15}{2}u - 4 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} -\frac{1}{2}u^5 + u^4 - \frac{5}{2}u^3 + \frac{1}{2}u^2 + 5u - 1 \\ -u^5 + \frac{3}{2}u^4 - 5u^3 - \frac{3}{2}u^2 + \frac{15}{2}u - 4 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.966268$ $a = 0.289808$ $b = -1.32472$	1.78843	20.1760
$u = 0.400014 - 0.259730I$ $a = 1.09617 + 1.70410I$ $b = 0.662359 - 0.562280I$	$-1.71668 - 6.59895I$	$-5.08799 + 11.97592I$
$u = 0.400014 + 0.259730I$ $a = 1.09617 - 1.70410I$ $b = 0.662359 + 0.562280I$	$-1.71668 + 6.59895I$	$-5.08799 - 11.97592I$
$u = 0.69250 - 2.31173I$ $a = -0.543447 - 0.165325I$ $b = 0.662359 + 0.562280I$	$-1.71668 + 6.59895I$	$-5.08799 - 11.97592I$
$u = 0.69250 + 2.31173I$ $a = -0.543447 + 0.165325I$ $b = 0.662359 - 0.562280I$	$-1.71668 - 6.59895I$	$-5.08799 + 11.97592I$
$u = 0.781230$ $a = 2.60475$ $b = -1.32472$	1.78843	20.1760

V. $\boldsymbol{I^u_5 = \langle u^6 - 3u^5 + 9u^4 - 11u^3 + 9u^2 - 4u + 1,\ u^4 - 2u^3 + 6u^2 + b - 3u + 1,\ -4u^5 + 10u^4 - 30u^3 + 27u^2 + a - 16u + 4\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 4u^5 - 10u^4 + 30u^3 - 27u^2 + 16u - 4 \\ -u^4 + 2u^3 - 6u^2 + 3u - 1 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 4u^5 - 11u^4 + 32u^3 - 33u^2 + 19u - 5 \\ -u^4 + 2u^3 - 6u^2 + 3u - 1 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -3u^5 + 7u^4 - 21u^3 + 16u^2 - 7u + 1 \\ -2u^5 + 6u^4 - 17u^3 + 20u^2 - 11u + 3 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 4u^5 - 11u^4 + 32u^3 - 33u^2 + 19u - 5 \\ -u^5 + u^4 - 4u^3 - 4u^2 + 3u - 2 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -3u^5 + 8u^4 - 24u^3 + 24u^2 - 16u + 4 \\ 2u^5 - 5u^4 + 15u^3 - 13u^2 + 8u - 1 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 4u^5 - 11u^4 + 32u^3 - 33u^2 + 19u - 4 \\ -u^5 + u^4 - 4u^3 - 4u^2 + 4u - 3 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -u^5 + 3u^4 - 8u^3 + 9u^2 - 3u + 1 \\ -2u^5 + 6u^4 - 17u^3 + 19u^2 - 11u + 2 \end{pmatrix}$$

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

$$a_8 = \begin{pmatrix} 3u^5 - 7u^4 + 21u^3 - 16u^2 + 7u - 1 \\ 2u^5 - 6u^4 + 17u^3 - 20u^2 + 11u - 2 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 3u^5 - 7u^4 + 21u^3 - 16u^2 + 7u - 1 \\ 2u^5 - 6u^4 + 17u^3 - 20u^2 + 11u - 2 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =**unknown**

(iv) Complex Volumes and Cusp Shapes

Solution to I_5^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.334264 - 0.651746I$ $a = -0.351154 + 0.963944I$ $b = 1.195662 + 0.502994I$	$3.16865 + 8.83066I$	$2.37152 - 6.93552I$
$u = 0.334264 + 0.651746I$ $a = -0.351154 - 0.963944I$ $b = 1.195662 - 0.502994I$	$3.16865 - 8.83066I$	$2.37152 + 6.93552I$
$u = 0.437621 - 0.402116I$ $a = -0.67660 - 1.54058I$ $b = 0.594315I$	-3.04743	-7.74305
$u = 0.437621 + 0.402116I$ $a = -0.67660 + 1.54058I$ $b = -0.594315I$	-3.04743	-7.74305
$u = 0.72812 - 2.17874I$ $a = 0.527759 + 0.238876I$ $b = -1.195662 - 0.502994I$	$3.16865 + 8.83066I$	$2.37152 - 6.93552I$
$u = 0.72812 + 2.17874I$ $a = 0.527759 - 0.238876I$ $b = -1.195662 + 0.502994I$	$3.16865 - 8.83066I$	$2.37152 + 6.93552I$

VI.

$\boldsymbol{I^u_6 = \langle u^{10} - 4u^9 + \cdots - 76u + 19,\ -9.05\times10^6u^9 + 2.73\times10^7u^8 + \cdots + 3.79\times10^8b + 1.10\times10^8,\ -1.03\times10^8u^9 + 6.92\times10^8u^8 + \cdots + 7.19\times10^9a + 3.12\times10^{10}\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 0.0142539u^9 - 0.0961715u^8 + \cdots + 5.74506u - 4.34217 \\ 0.0239103u^9 - 0.0720587u^8 + \cdots + 2.81721u - 0.291575 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 0.0381642u^9 - 0.168230u^8 + \cdots + 8.56227u - 4.63375 \\ 0.0239103u^9 - 0.0720587u^8 + \cdots + 2.81721u - 0.291575 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.0511115u^9 - 0.160029u^8 + \cdots + 3.14026u + 2.06322 \\ -0.0105127u^9 + 0.0419228u^8 + \cdots - 2.20756u + 0.670476 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.0381642u^9 - 0.168230u^8 + \cdots + 8.56227u - 4.63375 \\ 0.0304770u^9 - 0.0782816u^8 + \cdots + 0.908514u + 0.00431953 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.0655788u^9 - 0.202325u^8 + \cdots + 3.94641u + 2.69697 \\ -0.0445445u^9 + 0.167857u^8 + \cdots - 4.07618u + 1.17086 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.0951913u^9 + 0.356641u^8 + \cdots - 12.3413u + 3.27940 \\ -0.0276908u^9 + 0.100555u^8 + \cdots - 1.53303u + 0.0436560 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0153461u^9 + 0.0374740u^8 + \cdots + 0.0176118u - 1.65091 \\ -0.0175059u^9 + 0.0615015u^8 + \cdots - 0.617070u + 0.210459 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.0165516u^9 + 0.0776715u^8 + \cdots - 4.53189u + 2.98377 \\ -0.00493283u^9 + 0.00918435u^8 + \cdots - 1.39721u + 0.404662 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0352882u^9 - 0.130640u^8 + \cdots + 4.61529u - 0.474342 \\ -0.00193245u^9 - 0.00735879u^8 + \cdots + 1.11620u - 0.0644211 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0352882u^9 - 0.130640u^8 + \cdots + 4.61529u - 0.474342 \\ -0.00193245u^9 - 0.00735879u^8 + \cdots + 1.11620u - 0.0644211 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_6^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.66223-1.77825I$ $a=-0.659477+0.082625I$ $b=\ 1.36260$	9.67856	7.93446
$u=-0.66223+1.77825I$ $a=-0.659477-0.082625I$ $b=\ 1.36260$	9.67856	7.93446
$u=-0.042586-1.317707I$ $a=\ 0.231192+0.264390I$ $b=\ 0.460812-0.539200I$	$-2.45878+1.56515I$	$-6.72531-0.79694I$
$u=-0.042586+1.317707I$ $a=\ 0.231192-0.264390I$ $b=\ 0.460812+0.539200I$	$-2.45878-1.56515I$	$-6.72531+0.79694I$
$u=\ 0.289027-0.328931I$ $a=-2.81001-0.88547I$ $b=\ 0.460812-0.539200I$	$-2.45878+1.56515I$	$-6.72531-0.79694I$
$u=\ 0.289027+0.328931I$ $a=-2.81001+0.88547I$ $b=\ 0.460812+0.539200I$	$-2.45878-1.56515I$	$-6.72531+0.79694I$
$u=\ 0.97405-2.22028I$ $a=\ 0.632931+0.173367I$ $b=-1.142111-0.392895I$	$1.73183+9.10410I$	$-2.74192-10.20249I$
$u=\ 0.97405+2.22028I$ $a=\ 0.632931-0.173367I$ $b=-1.142111+0.392895I$	$1.73183-9.10410I$	$-2.74192+10.20249I$
$u=\ 1.44173-0.78416I$ $a=-0.394637-0.320393I$ $b=-1.142111+0.392895I$	$1.73183-9.10410I$	$-2.74192+10.20249I$
$u=\ 1.44173+0.78416I$ $a=-0.394637+0.320393I$ $b=-1.142111-0.392895I$	$1.73183+9.10410I$	$-2.74192-10.20249I$

VII. $\boldsymbol{I^u_7 =}$
$\boldsymbol{\langle u^{12}-6u^{11}+\cdots-62u-1,\ -1.05\times10^{19}u^{11}+6.41\times10^{19}u^{10}+\cdots+1.63\times10^{20}b+4.46\times10^{20},\ -2.75\times10^{19}u^{11}+1.67\times10^{20}u^{10}+\cdots+1.63\times10^{20}a+7.09\times10^{20}\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$

$$a_9 = \begin{pmatrix}0.169281u^{11} - 1.02762u^{10} + \cdots - 39.7186u - 4.35467\\0.0643540u^{11} - 0.394128u^{10} + \cdots - 12.8402u - 2.73962\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}0.233635u^{11} - 1.42175u^{10} + \cdots - 52.5588u - 7.09429\\0.0643540u^{11} - 0.394128u^{10} + \cdots - 12.8402u - 2.73962\end{pmatrix}$$

$$a_5 = \begin{pmatrix}-0.0354507u^{11} + 0.288521u^{10} + \cdots + 28.0007u - 14.1171\\0.0478879u^{11} - 0.275871u^{10} + \cdots - 3.07832u - 6.39668\end{pmatrix}$$

$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_{11} = \begin{pmatrix}0.233635u^{11} - 1.42175u^{10} + \cdots - 52.5588u - 7.09429\\0.0720481u^{11} - 0.444285u^{10} + \cdots - 13.8427u - 2.75956\end{pmatrix}$$

$$a_6 = \begin{pmatrix}-0.212148u^{11} + 1.34565u^{10} + \cdots + 52.5239u + 0.690599\\-0.0643602u^{11} + 0.399874u^{10} + \cdots + 14.8874u + 0.0833387\end{pmatrix}$$

$$a_1 = \begin{pmatrix}0.151314u^{11} - 0.925163u^{10} + \cdots - 10.7034u - 6.26859\\0.0399764u^{11} - 0.238536u^{10} + \cdots - 7.97949u - 2.56927\end{pmatrix}$$

$$a_2 = \begin{pmatrix}0.948682u^{11} - 5.72107u^{10} + \cdots - 150.257u - 53.0224\\0.387241u^{11} - 2.33053u^{10} + \cdots - 64.2461u - 22.7992\end{pmatrix}$$

$$a_3 = \begin{pmatrix}0.240562u^{11} - 1.46256u^{10} + \cdots - 37.1453u - 14.4555\\0.107841u^{11} - 0.646407u^{10} + \cdots - 17.6151u - 6.22721\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.700154u^{11} - 4.20645u^{10} + \cdots - 117.730u - 45.0058\\0.325847u^{11} - 1.95878u^{10} + \cdots - 50.9786u - 19.3799\end{pmatrix}$$

$$a_8 = \begin{pmatrix}0.700154u^{11} - 4.20645u^{10} + \cdots - 117.730u - 45.0058\\0.325847u^{11} - 1.95878u^{10} + \cdots - 50.9786u - 19.3799\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_7^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -2.34015$ $a = \quad 0.445082$ $b = \quad 0.852178$	-0.403335	690.826
$u = -1.00769 - 3.18429I$ $a = -0.177779 - 0.114465I$ $b = \quad 0.587320 + 0.013484I$	$-0.62080 + 6.33267I$	$10.5872 - 10.3937I$
$u = -1.00769 + 3.18429I$ $a = -0.177779 + 0.114465I$ $b = \quad 0.587320 - 0.013484I$	$-0.62080 - 6.33267I$	$10.5872 + 10.3937I$
$u = -0.238066$ $a = \quad 10.2314$ $b = \quad 2.52048$	-0.403335	690.826
$u = -0.0168748$ $a = -3.68064$ $b = -2.52048$	-0.403335	690.826
$u = \quad 0.052606 - 0.384202I$ $a = \quad 1.98496 + 2.94498I$ $b = -0.587320 - 0.013484I$	$-0.62080 + 6.33267I$	$10.5872 - 10.3937I$
$u = \quad 0.052606 + 0.384202I$ $a = \quad 1.98496 - 2.94498I$ $b = -0.587320 + 0.013484I$	$-0.62080 - 6.33267I$	$10.5872 + 10.3937I$
$u = \quad 0.762152 - 1.043441I$ $a = -0.095426 - 0.515528I$ $b = -0.991137 + 0.605504I$	$-0.62080 - 6.33267I$	$10.5872 + 10.3937I$
$u = \quad 0.762152 + 1.043441I$ $a = -0.095426 + 0.515528I$ $b = -0.991137 - 0.605504I$	$-0.62080 + 6.33267I$	$10.5872 - 10.3937I$
$u = \quad 0.82828 - 2.12111I$ $a = -0.642900 - 0.175835I$ $b = \quad 0.991137 + 0.605504I$	$-0.62080 + 6.33267I$	$10.5872 - 10.3937I$

Solution to I_7^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.82828 + 2.12111I$ $a = -0.642900 + 0.175835I$ $b = 0.991137 - 0.605504I$	$-0.62080 - 6.33267I$	$10.5872 + 10.3937I$
$u = 7.32440$ $a = 0.866464$ $b = -0.852178$	-0.403335	690.826

VIII. $I^u_8 =$
$\langle u^{12}-7u^{11}+\cdots+18u-3,\ -9.86\times10^{9}u^{11}+6.53\times10^{10}u^{10}+\cdots+1.12\times10^{10}b-8.61\times10^{10},\ 1.85\times10^{10}u^{11}-1.24\times10^{11}u^{10}+\cdots+1.12\times10^{10}a+1.41\times10^{11}\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-1.65042u^{11}+11.0397u^{10}+\cdots+42.3084u-12.5317\\0.878551u^{11}-5.81535u^{10}+\cdots-24.4318u+7.67024\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.771873u^{11}+5.22430u^{10}+\cdots+17.8766u-4.86147\\0.878551u^{11}-5.81535u^{10}+\cdots-24.4318u+7.67024\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-1.05372u^{11}+6.84701u^{10}+\cdots+38.1821u-8.20840\\-1.52172u^{11}+10.1641u^{10}+\cdots+44.5447u-14.9913\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.771873u^{11}+5.22430u^{10}+\cdots+17.8766u-4.86147\\0.834022u^{11}-5.48665u^{10}+\cdots-23.5289u+7.13382\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-0.970606u^{11}+6.48628u^{10}+\cdots+38.9181u-10.0066\\0.0411046u^{11}-0.248015u^{10}+\cdots+3.64118u-1.40401\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.711233u^{11}-4.49671u^{10}+\cdots-14.0911u+1.77590\\1.13037u^{11}-7.49046u^{10}+\cdots-30.2515u+9.23909\end{pmatrix}$$
$$a_2 = \begin{pmatrix}2.22341u^{11}-14.6853u^{10}+\cdots-55.7512u+15.5896\\4.49335u^{11}-30.0144u^{10}+\cdots-120.658u+41.9575\end{pmatrix}$$
$$a_3 = \begin{pmatrix}-1.72177u^{11}+11.6562u^{10}+\cdots+52.8367u-16.9397\\-1.18069u^{11}+7.95867u^{10}+\cdots+33.6158u-12.9756\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.216937u^{11}-1.75394u^{10}+\cdots-9.46115u+8.22383\\3.04667u^{11}-20.4274u^{10}+\cdots-80.9267u+30.6171\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0.216937u^{11}-1.75394u^{10}+\cdots-9.46115u+8.22383\\3.04667u^{11}-20.4274u^{10}+\cdots-80.9267u+30.6171\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_8^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.370859$ $a = 4.73941$ $b = 1.80980$	-0.403335	-75.8155
$u = -0.13466 - 1.78906I$ $a = -0.414750 + 0.387524I$ $b = -0.136378 - 0.622706I$	$-0.62080 + 6.33267I$	$-5.09224 - 6.77700I$
$u = -0.13466 + 1.78906I$ $a = -0.414750 - 0.387524I$ $b = -0.136378 + 0.622706I$	$-0.62080 - 6.33267I$	$-5.09224 + 6.77700I$
$u = -0.126984 - 1.276198I$ $a = -0.320018 + 0.432398I$ $b = 1.136378 - 0.622706I$	$-0.62080 - 6.33267I$	$-5.09224 + 6.77700I$
$u = -0.126984 + 1.276198I$ $a = -0.320018 - 0.432398I$ $b = 1.136378 + 0.622706I$	$-0.62080 + 6.33267I$	$-5.09224 - 6.77700I$
$u = 0.313822$ $a = -0.914612$ $b = 1.80980$	-0.403335	-75.8155
$u = 0.371049 - 0.149196I$ $a = 2.87699 - 0.02355I$ $b = -0.136378 - 0.622706I$	$-0.62080 + 6.33267I$	$-5.09224 - 6.77700I$
$u = 0.371049 + 0.149196I$ $a = 2.87699 + 0.02355I$ $b = -0.136378 + 0.622706I$	$-0.62080 - 6.33267I$	$-5.09224 + 6.77700I$
$u = 0.63432 - 2.03002I$ $a = -0.716175 - 0.300570I$ $b = 1.136378 + 0.622706I$	$-0.62080 + 6.33267I$	$-5.09224 - 6.77700I$
$u = 0.63432 + 2.03002I$ $a = -0.716175 + 0.300570I$ $b = 1.136378 - 0.622706I$	$-0.62080 - 6.33267I$	$-5.09224 + 6.77700I$

Solution to I_8^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.77226$ $a = -0.560673$ $b = -0.809798$	-0.403335	-75.8155
$u = 3.79733$ $a = 0.883779$ $b = -0.809798$	-0.403335	-75.8155

IX. $I^u_9 =$
$\langle u^{15}+2u^{14}+\cdots+12u+1,\ 2.47\times10^{12}u^{14}+4.62\times10^{12}u^{13}+\cdots+3.27\times10^{12}b+1.23\times10^{13},\ -1.23\times10^{13}u^{14}-2.33\times10^{13}u^{13}+\cdots+3.27\times10^{12}a-7.35\times10^{13}\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}3.76220u^{14}+7.10975u^{13}+\cdots+172.781u+22.4787\\-0.756276u^{14}-1.41139u^{13}+\cdots-30.1272u-3.76917\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}3.00592u^{14}+5.69836u^{13}+\cdots+142.654u+18.7095\\-0.756276u^{14}-1.41139u^{13}+\cdots-30.1272u-3.76917\end{pmatrix}$$
$$a_5 = \begin{pmatrix}2.92363u^{14}+5.03424u^{13}+\cdots+89.1970u+6.62975\\-0.612137u^{14}-1.06086u^{13}+\cdots-20.2174u-1.45528\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}3.00592u^{14}+5.69836u^{13}+\cdots+142.654u+18.7095\\-0.749135u^{14}-1.37488u^{13}+\cdots-29.3713u-3.45568\end{pmatrix}$$
$$a_6 = \begin{pmatrix}-6.19391u^{14}-11.1703u^{13}+\cdots-233.002u-23.2604\\0.976430u^{14}+1.76209u^{13}+\cdots+36.3442u+3.53577\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-2.99868u^{14}-5.90053u^{13}+\cdots-146.148u-22.2745\\0.414653u^{14}+0.817639u^{13}+\cdots+22.6677u+3.76220\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-3.76917u^{14}-6.78206u^{13}+\cdots-137.747u-15.1028\\0.463519u^{14}+0.850973u^{13}+\cdots+19.0266u+2.00015\end{pmatrix}$$
$$a_3 = \begin{pmatrix}6.79907u^{14}+12.5821u^{13}+\cdots+276.565u+34.1275\\-1.21756u^{14}-2.24368u^{13}+\cdots-51.0666u-6.19391\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.45528u^{14}-2.29843u^{13}+\cdots-24.8772u+2.75408\\0.0450754u^{14}+0.0307064u^{13}+\cdots-1.88707u-1.26019\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.45528u^{14}-2.29843u^{13}+\cdots-24.8772u+2.75408\\0.0450754u^{14}+0.0307064u^{13}+\cdots-1.88707u-1.26019\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.78233-1.39703I$ $a=-0.156011-0.639028I$ $b=\ \ 0.766216-0.081704I$	$0.48581+3.45966I$	$2.92722-6.50047I$
$u=-0.78233+1.39703I$ $a=-0.156011+0.639028I$ $b=\ \ 0.766216+0.081704I$	$0.48581-3.45966I$	$2.92722+6.50047I$
$u=-0.66810-2.22561I$ $a=-0.613967+0.351481I$ $b=\ \ 1.30239-0.69166I$	$2.5860-19.7120I$	$0.95572+10.39733I$
$u=-0.66810+2.22561I$ $a=-0.613967-0.351481I$ $b=\ \ 1.30239+0.69166I$	$2.5860+19.7120I$	$0.95572-10.39733I$
$u=-0.477344$ $a=-0.879616$ $b=-0.878815$	1.70444	5.76331
$u=-0.32717-1.53341I$ $a=-0.482379-0.114137I$ $b=\ \ 1.044363+0.574632I$	$4.09690+5.67488I$	$5.06867-6.10846I$
$u=-0.32717+1.53341I$ $a=-0.482379+0.114137I$ $b=\ \ 1.044363-0.574632I$	$4.09690-5.67488I$	$5.06867+6.10846I$
$u=-0.175859-0.100257I$ $a=\ \ 2.11783-6.57142I$ $b=-0.349141+1.006443I$	$-3.28483+7.08124I$	$-3.75198-5.71793I$
$u=-0.175859+0.100257I$ $a=\ \ 2.11783+6.57142I$ $b=-0.349141-1.006443I$	$-3.28483-7.08124I$	$-3.75198+5.71793I$
$u=-0.096613-0.396023I$ $a=-0.86797-1.32925I$ $b=\ \ 0.064081-0.615780I$	$-0.61502+1.62852I$	$-1.81112-4.54842I$

Solution to I_9^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.096613 + 0.396023I$ $a = -0.86797 + 1.32925I$ $b = 0.064081 + 0.615780I$	$-0.61502 - 1.62852I$	$-1.81112 + 4.54842I$
$u = 0.527888 - 1.092682I$ $a = 1.037536 - 0.058887I$ $b = -1.264561 + 0.559272I$	$5.64308 - 1.61043I$	$6.76634 - 1.00019I$
$u = 0.527888 + 1.092682I$ $a = 1.037536 + 0.058887I$ $b = -1.264561 - 0.559272I$	$5.64308 + 1.61043I$	$6.76634 + 1.00019I$
$u = 0.76086 - 2.35797I$ $a = 0.404764 + 0.028837I$ $b = -1.123941 - 0.477864I$	$5.04027 + 9.43708I$	$7.9635 - 11.7594I$
$u = 0.76086 + 2.35797I$ $a = 0.404764 - 0.028837I$ $b = -1.123941 + 0.477864I$	$5.04027 - 9.43708I$	$7.9635 + 11.7594I$

X. $I^u_{10} =$
$\langle u^{36}+3u^{35}+\cdots-12u+1,\ -3.77\times10^{94}u^{35}-1.14\times10^{95}u^{34}+\cdots+3.16\times10^{95}b+2.46\times10^{95},\ 2.42\times10^{95}u^{35}+7.22\times10^{95}u^{34}+\cdots+3.16\times10^{95}a-2.86\times10^{96}\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}-0.766237u^{35} - 2.28530u^{34} + \cdots + 2.98416u + 9.05271\\0.119452u^{35} + 0.359492u^{34} + \cdots + 16.1682u - 0.777921\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-0.646785u^{35} - 1.92581u^{34} + \cdots + 19.1524u + 8.27479\\0.119452u^{35} + 0.359492u^{34} + \cdots + 16.1682u - 0.777921\end{pmatrix}$$
$$a_5 = \begin{pmatrix}-1.13138u^{35} - 3.63186u^{34} + \cdots - 59.3513u + 6.86101\\-0.0264295u^{35} - 0.0783592u^{34} + \cdots - 8.43769u + 2.17222\end{pmatrix}$$
$$a_7 = \begin{pmatrix}0\\u\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}-0.646785u^{35} - 1.92581u^{34} + \cdots + 19.1524u + 8.27479\\0.134634u^{35} + 0.407240u^{34} + \cdots + 16.9895u - 0.792468\end{pmatrix}$$
$$a_6 = \begin{pmatrix}0.908774u^{35} + 2.85322u^{34} + \cdots + 110.309u + 0.561435\\0.238644u^{35} + 0.736702u^{34} + \cdots + 10.5706u - 1.10495\end{pmatrix}$$
$$a_1 = \begin{pmatrix}0.943546u^{35} + 2.86023u^{34} + \cdots + 40.1141u - 15.1242\\-0.0134103u^{35} - 0.0546382u^{34} + \cdots + 0.142125u - 0.766237\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-1.33456u^{35} - 4.06508u^{34} + \cdots - 112.532u + 13.2769\\-0.168307u^{35} - 0.500943u^{34} + \cdots - 8.34049u + 1.31523\end{pmatrix}$$
$$a_3 = \begin{pmatrix}0.115484u^{35} + 0.229620u^{34} + \cdots - 31.8638u - 10.6039\\-0.126895u^{35} - 0.397490u^{34} + \cdots - 11.4667u + 0.908774\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.49683u^{35} - 4.62016u^{34} + \cdots - 138.567u + 10.8342\\-0.230349u^{35} - 0.693437u^{34} + \cdots - 13.1487u + 1.91026\end{pmatrix}$$
$$a_8 = \begin{pmatrix}-1.49683u^{35} - 4.62016u^{34} + \cdots - 138.567u + 10.8342\\-0.230349u^{35} - 0.693437u^{34} + \cdots - 13.1487u + 1.91026\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I^u_{10}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.10737-1.60482I$ $a=\ \ 0.632421-0.621099I$ $b=-0.880339+0.250614I$	$-1.19542-1.15621I$	$10.86918-2.44420I$
$u=-1.10737+1.60482I$ $a=\ \ 0.632421+0.621099I$ $b=-0.880339-0.250614I$	$-1.19542+1.15621I$	$10.86918+2.44420I$
$u=-0.783167-0.542527I$ $a=-0.182449+0.934420I$ $b=-0.281261+0.502592I$	$2.57204+5.31192I$	$3.36040-8.00060I$
$u=-0.783167+0.542527I$ $a=-0.182449-0.934420I$ $b=-0.281261-0.502592I$	$2.57204-5.31192I$	$3.36040+8.00060I$
$u=-0.77904-1.26752I$ $a=-0.116286-0.201047I$ $b=\ \ 1.136752+0.492598I$	$5.05604-1.80030I$	$7.45000+3.46748I$
$u=-0.77904+1.26752I$ $a=-0.116286+0.201047I$ $b=\ \ 1.136752-0.492598I$	$5.05604+1.80030I$	$7.45000-3.46748I$
$u=-0.73214-2.09422I$ $a=-0.617477+0.454901I$ $b=\ \ 1.197910-0.376536I$	$7.02166-7.49599I$	$6.57969+7.14836I$
$u=-0.73214+2.09422I$ $a=-0.617477-0.454901I$ $b=\ \ 1.197910+0.376536I$	$7.02166+7.49599I$	$6.57969-7.14836I$
$u=-0.67214-2.21899I$ $a=\ \ 0.641729-0.374536I$ $b=-1.213278+0.622425I$	$-0.55505-12.95424I$	$-0.71426+8.63684I$
$u=-0.67214+2.21899I$ $a=\ \ 0.641729+0.374536I$ $b=-1.213278-0.622425I$	$-0.55505+12.95424I$	$-0.71426-8.63684I$

Solution to I_{10}^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.470358-1.315610I$ $a=-0.298780+0.572556I$ $b=\ \ 0.702959+0.227514I$	$3.30139+5.60580I$	$4.21097-5.33069I$
$u=-0.470358+1.315610I$ $a=-0.298780-0.572556I$ $b=\ \ 0.702959-0.227514I$	$3.30139-5.60580I$	$4.21097+5.33069I$
$u=-0.396182-1.120628I$ $a=\ \ 0.259957+0.393898I$ $b=-0.998849-0.501023I$	$1.88210+1.75570I$	$3.07518-1.06674I$
$u=-0.396182+1.120628I$ $a=\ \ 0.259957-0.393898I$ $b=-0.998849+0.501023I$	$1.88210-1.75570I$	$3.07518+1.06674I$
$u=-0.179299-0.216656I$ $a=-2.82395-0.95783I$ $b=\ \ 0.047879-0.542522I$	$1.88210+1.75570I$	$3.07518-1.06674I$
$u=-0.179299+0.216656I$ $a=-2.82395+0.95783I$ $b=\ \ 0.047879+0.542522I$	$1.88210-1.75570I$	$3.07518+1.06674I$
$u=-0.028148-0.754872I$ $a=\ \ 0.99817+1.16324I$ $b=-0.343406-0.828615I$	$2.75241+3.93541I$	$2.90741-5.36629I$
$u=-0.028148+0.754872I$ $a=\ \ 0.99817-1.16324I$ $b=-0.343406+0.828615I$	$2.75241-3.93541I$	$2.90741+5.36629I$
$u=-0.009002-0.144399I$ $a=-5.65379-1.01228I$ $b=\ \ 0.21657-1.54292I$	$-1.19542-1.15621I$	$10.86918-2.44420I$
$u=-0.009002+0.144399I$ $a=-5.65379+1.01228I$ $b=\ \ 0.21657+1.54292I$	$-1.19542+1.15621I$	$10.86918+2.44420I$

Solution to I^u_{10}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.04630 - 2.23105I$ $a = 0.452624 + 0.222509I$ $b = -1.137847 - 0.398978I$	$5.05604 + 1.80030I$	$7.45000 - 3.46748I$
$u = 0.04630 + 2.23105I$ $a = 0.452624 - 0.222509I$ $b = -1.137847 + 0.398978I$	$5.05604 - 1.80030I$	$7.45000 + 3.46748I$
$u = 0.0875024 - 0.0540753I$ $a = 13.02903 - 3.09684I$ $b = 0.327075 - 1.239133I$	$-0.55505 + 12.95424I$	$-0.71426 - 8.63684I$
$u = 0.0875024 + 0.0540753I$ $a = 13.02903 + 3.09684I$ $b = 0.327075 + 1.239133I$	$-0.55505 - 12.95424I$	$-0.71426 + 8.63684I$
$u = 0.33726 - 1.60649I$ $a = -0.666130 - 0.134591I$ $b = 1.31547 + 0.53514I$	$3.30139 + 5.60580I$	$4.21097 - 5.33069I$
$u = 0.33726 + 1.60649I$ $a = -0.666130 + 0.134591I$ $b = 1.31547 - 0.53514I$	$3.30139 - 5.60580I$	$4.21097 + 5.33069I$
$u = 0.45023 - 1.44725I$ $a = 0.801714 + 0.052904I$ $b = -1.65478 + 0.03224I$	$7.02166 + 7.49599I$	$6.57969 - 7.14836I$
$u = 0.45023 + 1.44725I$ $a = 0.801714 - 0.052904I$ $b = -1.65478 - 0.03224I$	$7.02166 - 7.49599I$	$6.57969 + 7.14836I$
$u = 0.598829 - 0.213056I$ $a = -0.342340 + 0.525918I$ $b = -0.016792 - 1.112464I$	$-2.74089 + 1.92073I$	$-7.73857 - 5.49648I$
$u = 0.598829 + 0.213056I$ $a = -0.342340 - 0.525918I$ $b = -0.016792 + 1.112464I$	$-2.74089 - 1.92073I$	$-7.73857 + 5.49648I$

Solution to I^u_{10}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.67521 - 1.35698I$ $a = -0.807052 + 0.127650I$ $b = 1.173393 - 0.137367I$	$2.75241 + 3.93541I$	$2.90741 - 5.36629I$
$u = 0.67521 + 1.35698I$ $a = -0.807052 - 0.127650I$ $b = 1.173393 + 0.137367I$	$2.75241 - 3.93541I$	$2.90741 + 5.36629I$
$u = 0.70580 - 1.91504I$ $a = -0.525085 + 0.003908I$ $b = 1.120453 + 0.373407I$	$2.57204 + 5.31192I$	$3.36040 - 8.00060I$
$u = 0.70580 + 1.91504I$ $a = -0.525085 - 0.003908I$ $b = 1.120453 - 0.373407I$	$2.57204 - 5.31192I$	$3.36040 + 8.00060I$
$u = 0.755723 - 0.967094I$ $a = -0.782299 - 0.810941I$ $b = 0.788088 + 0.454823I$	$-2.74089 + 1.92073I$	$-7.73857 - 5.49648I$
$u = 0.755723 + 0.967094I$ $a = -0.782299 + 0.810941I$ $b = 0.788088 - 0.454823I$	$-2.74089 - 1.92073I$	$-7.73857 + 5.49648I$

XI. $\boldsymbol{I^u_{11} = \langle u^{36} - 10u^{35} + \cdots + 3020u - 167,\ 6.66 \times 10^{125}u^{35} - 3.11 \times 10^{126}u^{34} + \cdots + 3.26 \times 10^{128}b - 2.86 \times 10^{129},\ 4.85 \times 10^{129}u^{35} - 4.69 \times 10^{130}u^{34} + \cdots + 5.44 \times 10^{130}a + 1.08 \times 10^{132}\rangle}$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} -0.0891388u^{35} + 0.863126u^{34} + \cdots + 360.276u - 19.9492 \\ -0.00204652u^{35} + 0.00956749u^{34} + \cdots - 87.8343u + 8.77926 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.0911853u^{35} + 0.872693u^{34} + \cdots + 272.442u - 11.1700 \\ -0.00204652u^{35} + 0.00956749u^{34} + \cdots - 87.8343u + 8.77926 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.0590172u^{35} + 0.564235u^{34} + \cdots + 383.322u - 26.9170 \\ 0.0201399u^{35} - 0.192671u^{34} + \cdots - 7.83037u - 7.64096 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} -0.0911853u^{35} + 0.872693u^{34} + \cdots + 272.442u - 11.1700 \\ -0.00582572u^{35} + 0.0555354u^{34} + \cdots + 15.2003u + 2.23958 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.0869475u^{35} + 0.848662u^{34} + \cdots + 662.548u - 42.3397 \\ 0.0346646u^{35} - 0.336964u^{34} + \cdots - 217.778u + 13.2192 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.0441973u^{35} - 0.387592u^{34} + \cdots + 126.599u - 7.10803 \\ -0.00120448u^{35} + 0.0176295u^{34} + \cdots + 47.0480u - 0.279904 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.00709860u^{35} + 0.0760362u^{34} + \cdots - 7.98575u + 11.2909 \\ 0.0653715u^{35} - 0.635729u^{34} + \cdots - 668.285u + 66.7325 \end{pmatrix}$$

$$a_3 = \begin{pmatrix} -0.00684858u^{35} + 0.0906717u^{34} + \cdots + 340.650u - 26.6259 \\ -0.0149552u^{35} + 0.145895u^{34} + \cdots + 169.301u - 17.6560 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0687957u^{35} - 0.686663u^{34} + \cdots - 756.273u + 56.4133 \\ 0.0436484u^{35} - 0.439689u^{34} + \cdots - 653.904u + 63.1312 \end{pmatrix}$$

$$a_8 = \begin{pmatrix} 0.0687957u^{35} - 0.686663u^{34} + \cdots - 756.273u + 56.4133 \\ 0.0436484u^{35} - 0.439689u^{34} + \cdots - 653.904u + 63.1312 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_{11}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -1.01282 - 1.31300I$ $a = -1.272958 + 0.095897I$ $b = 1.200808 + 0.440055I$	$2.94139 + 10.34381I$	$0.42699 - 12.71172I$
$u = -1.01282 + 1.31300I$ $a = -1.272958 - 0.095897I$ $b = 1.200808 - 0.440055I$	$2.94139 - 10.34381I$	$0.42699 + 12.71172I$
$u = -0.98611 - 1.70538I$ $a = 0.301918 - 0.093462I$ $b = -1.124188 + 0.306823I$	$1.62967 - 1.42694I$	$-3.03389 - 0.96634I$
$u = -0.98611 + 1.70538I$ $a = 0.301918 + 0.093462I$ $b = -1.124188 - 0.306823I$	$1.62967 + 1.42694I$	$-3.03389 + 0.96634I$
$u = -0.97510 - 2.83519I$ $a = -0.1042291 - 0.0429391I$ $b = -0.428214 + 0.076995I$	$-0.92113 + 6.20293I$	$-12.02897 - 1.29054I$
$u = -0.97510 + 2.83519I$ $a = -0.1042291 + 0.0429391I$ $b = -0.428214 - 0.076995I$	$-0.92113 - 6.20293I$	$-12.02897 + 1.29054I$
$u = -0.93294 - 2.13800I$ $a = -0.468197 + 0.250751I$ $b = 1.200808 - 0.440055I$	$2.94139 - 10.34381I$	$0.42699 + 12.71172I$
$u = -0.93294 + 2.13800I$ $a = -0.468197 - 0.250751I$ $b = 1.200808 + 0.440055I$	$2.94139 + 10.34381I$	$0.42699 - 12.71172I$
$u = -0.429966 - 0.930334I$ $a = 0.642367 - 0.301201I$ $b = -1.35721 + 0.80578I$	$2.94139 - 10.34381I$	$0.42699 + 12.71172I$
$u = -0.429966 + 0.930334I$ $a = 0.642367 + 0.301201I$ $b = -1.35721 - 0.80578I$	$2.94139 + 10.34381I$	$0.42699 - 12.71172I$

Solution to I_{11}^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.368803 - 0.573213I$ $a = -1.38856 + 1.20495I$ $b = -1.014520 - 0.701736I$	$1.62967 - 1.42694I$	$-3.03389 - 0.96634I$
$u = -0.368803 + 0.573213I$ $a = -1.38856 - 1.20495I$ $b = -1.014520 + 0.701736I$	$1.62967 + 1.42694I$	$-3.03389 + 0.96634I$
$u = -0.263377$ $a = 8.54520$ $b = 2.32603$	-0.410667	-404.090
$u = 0.120902$ $a = -1.05257$ $b = 2.32603$	-0.410667	-404.090
$u = 0.21926 - 1.83471I$ $a = 0.922441 + 0.272046I$ $b = -1.124188 - 0.306823I$	$1.62967 + 1.42694I$	$-3.03389 + 0.96634I$
$u = 0.21926 + 1.83471I$ $a = 0.922441 - 0.272046I$ $b = -1.124188 + 0.306823I$	$1.62967 - 1.42694I$	$-3.03389 - 0.96634I$
$u = 0.329763 - 0.186088I$ $a = -3.03281 - 1.13239I$ $b = 0.507948 + 0.238028I$	$-2.62213 + 1.09146I$	$-4.31933 - 5.89503I$
$u = 0.329763 + 0.186088I$ $a = -3.03281 + 1.13239I$ $b = 0.507948 - 0.238028I$	$-2.62213 - 1.09146I$	$-4.31933 + 5.89503I$
$u = 0.399780 - 0.320910I$ $a = 2.70606 + 0.59152I$ $b = -0.428214 + 0.076995I$	$-0.92113 + 6.20293I$	$-12.02897 - 1.29054I$
$u = 0.399780 + 0.320910I$ $a = 2.70606 - 0.59152I$ $b = -0.428214 - 0.076995I$	$-0.92113 - 6.20293I$	$-12.02897 + 1.29054I$

Solution to I_{11}^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.45396 - 2.12603I$ $a = 0.627515 + 0.449732I$ $b = -1.35721 - 0.80578I$	$2.94139 + 10.34381I$	$0.42699 - 12.71172I$
$u = 0.45396 + 2.12603I$ $a = 0.627515 - 0.449732I$ $b = -1.35721 + 0.80578I$	$2.94139 - 10.34381I$	$0.42699 + 12.71172I$
$u = 0.464754 - 0.305283I$ $a = -2.10162 + 0.00599I$ $b = 0.427253 - 0.729468I$	$-2.62213 + 1.09146I$	$-4.31933 - 5.89503I$
$u = 0.464754 + 0.305283I$ $a = -2.10162 - 0.00599I$ $b = 0.427253 + 0.729468I$	$-2.62213 - 1.09146I$	$-4.31933 + 5.89503I$
$u = 0.541322 - 0.585100I$ $a = 0.496278 + 0.486073I$ $b = 0.427253 - 0.729468I$	$-2.62213 + 1.09146I$	$-4.31933 - 5.89503I$
$u = 0.541322 + 0.585100I$ $a = 0.496278 - 0.486073I$ $b = 0.427253 + 0.729468I$	$-2.62213 - 1.09146I$	$-4.31933 + 5.89503I$
$u = 0.555400 - 0.282300I$ $a = 1.123582 + 0.104446I$ $b = -1.014520 - 0.701736I$	$1.62967 - 1.42694I$	$-3.03389 - 0.96634I$
$u = 0.555400 + 0.282300I$ $a = 1.123582 - 0.104446I$ $b = -1.014520 + 0.701736I$	$1.62967 + 1.42694I$	$-3.03389 + 0.96634I$
$u = 0.64121 - 1.29222I$ $a = 0.060453 + 0.502352I$ $b = 1.046046 - 0.574906I$	$-0.92113 - 6.20293I$	$-12.02897 + 1.29054I$
$u = 0.64121 + 1.29222I$ $a = 0.060453 - 0.502352I$ $b = 1.046046 + 0.574906I$	$-0.92113 + 6.20293I$	$-12.02897 - 1.29054I$

Solution to I^u_{11}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.84582 - 2.08861I$ $a = -0.667875 - 0.189335I$ $b = 1.046046 + 0.574906I$	$-0.92113 + 6.20293I$	$-12.02897 - 1.29054I$
$u = 0.84582 + 2.08861I$ $a = -0.667875 + 0.189335I$ $b = 1.046046 - 0.574906I$	$-0.92113 - 6.20293I$	$-12.02897 + 1.29054I$
$u = 1.10558 - 1.36508I$ $a = -0.082524 - 0.320677I$ $b = 0.507948 + 0.238028I$	$-2.62213 + 1.09146I$	$-4.31933 - 5.89503I$
$u = 1.10558 + 1.36508I$ $a = -0.082524 + 0.320677I$ $b = 0.507948 - 0.238028I$	$-2.62213 - 1.09146I$	$-4.31933 + 5.89503I$
$u = 2.17328$ $a = -0.475585$ $b = -0.841883$	-0.410667	-404.090
$u = 6.26696$ $a = 0.866451$ $b = -0.841883$	-0.410667	-404.090

XII. $I^u_{12} = \langle u-1,\ b+1,\ a-1 \rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_5 = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_1 = \begin{pmatrix} -1 \\ -1 \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -3 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I^u_{12}	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 1.00000$		
$a = 1.00000$	0	0
$b = -1.00000$		

XIII. $I^u_{13} = \langle u+1,\ a-1,\ b-1 \rangle$

(i) Arc colorings

$a_4 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$a_9 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$a_{10} = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$

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

$a_7 = \begin{pmatrix} 0 \\ -1 \end{pmatrix}$

$a_{11} = \begin{pmatrix} 2 \\ 3 \end{pmatrix}$

$a_6 = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$

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

$a_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

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

$a_8 = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$

$a_8 = \begin{pmatrix} -1 \\ -2 \end{pmatrix}$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I^u_{13}	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -1.00000$ $a = 1.00000$ $b = 1.00000$	0	0

XIV. $I_1^v = \langle b+1,\ v-1,\ a\rangle$

(i) Arc colorings

$$a_4 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_9 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_{10} = \begin{pmatrix}-1\\-1\end{pmatrix}$$
$$a_5 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_7 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_{11} = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_6 = \begin{pmatrix}1\\-1\end{pmatrix}$$
$$a_1 = \begin{pmatrix}-1\\0\end{pmatrix}$$
$$a_2 = \begin{pmatrix}-1\\-1\end{pmatrix}$$
$$a_3 = \begin{pmatrix}1\\0\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\-1\end{pmatrix}$$
$$a_8 = \begin{pmatrix}0\\-1\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes =unknown

(iv) Complex Volumes and Cusp Shapes

Solution to I_1^v	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$v = 1.00000$ $a = 0$ $b = -1.00000$	1.64493	6.00000

XV. u-Polynomials

Crossings	u-Polynomials at each crossings
c_1	$u^{37}(u-2)(u-1)^9(u+1)^2(u^6-2u^5-3u^4+2u^3-4u^2-10u-1)^2$ $(u^6-u^5+\cdots-4u+2)(-1+4u-2u^2+2u^3-2u^4+u^5+u^6)^2$ $(u^{10}+10u^9+\cdots+131u+29)(u^{15}+9u^{14}+\cdots-32u-16)$ $(1+4u^2+21u^4-30u^5+81u^6-114u^7+175u^8-200u^9+220u^{10}-192u^{11}+156u^{12}-104u$
c_2	$u^{37}(u-1)^3(u+1)(u^2-2)(u^3-u-1)^2(u^5-2u^3+u+1)^2$ $(u^6-2u^4+2u^2+1)(u^6+3u^5+2u^4-u^3-u^2-1)^2$ $(u^{12}-9u^{10}+21u^8-30u^6+23u^4-8u^2+1)$ $(u^{15}-4u^{13}+9u^{11}-2u^{10}-8u^9+7u^8+2u^7-12u^6+4u^5+9u^4-2u-2)$ $(u^{36}+3u^{35}+\cdots+34u+13)$
c_3	$u^{37}(u-1)(u+1)^3(u^2-2u-1)(u^6-u^5+2u^3-u+1)$ $(u^6+2u^5+2u^3+5u^2+2u-1)$ $(u^{10}-4u^7+4u^6+u^5+5u^4-7u^3-u^2+u+1)$ $(u^{12}-2u^{11}+\cdots-12u+1)(u^{12}+3u^{11}+\cdots+25u^2-3)$ $(u^{15}+2u^{13}+\cdots+6u^3+1)(u^{36}+u^{35}+\cdots+2u+1)$
c_4, c_7, c_9	$u(u-1)^3(u+1)(u^2-2)(u^3-u-1)^2(u^5-2u^3+u+1)^2$ $(u^6-2u^4+2u^2+1)(u^6+3u^5+2u^4-u^3-u^2-1)^2$ $(u^{12}-9u^{10}+21u^8-30u^6+23u^4-8u^2+1)$ $(u^{15}-4u^{13}+9u^{11}-2u^{10}-8u^9+7u^8+2u^7-12u^6+4u^5+9u^4-2u-2)$ $(-1+2u+7u^2-9u^3-29u^4+17u^5+53u^6+4u^7-76u^8-25u^9+76u^{10}+29u^{11}-56u^{12}-$ $(u^{36}+3u^{35}+\cdots+34u+13)$
c_5	$u^{37}(u-1)^2(u+1)^2(u^2-2u-1)(u^6-u^5+2u^3-u+1)$ $(u^6+2u^5+2u^3+5u^2+2u-1)$ $(u^{10}-4u^7+4u^6+u^5+5u^4-7u^3-u^2+u+1)$ $(u^{12}-2u^{11}+\cdots-12u+1)(u^{12}+3u^{11}+\cdots+25u^2-3)$ $(u^{15}+2u^{13}+\cdots+6u^3+1)(u^{36}+u^{35}+\cdots+2u+1)$
c_6, c_8	$u^{37}(u-1)^2(u+1)^2(u^2+2u-1)(u^6+u^5-2u^3+u+1)$ $(u^6+2u^5+2u^3+5u^2+2u-1)$ $(u^{10}-4u^7+4u^6+u^5+5u^4-7u^3-u^2+u+1)$ $(u^{12}+2u^{11}+\cdots+12u+1)(u^{12}+3u^{11}+\cdots+25u^2-3)$ $(u^{15}+2u^{13}+\cdots+6u^3+1)(u^{36}+u^{35}+\cdots+2u+1)$
c_{10}	$u(u-1)^{10}(u+1)(u+2)(u^6+u^5-2u^4+2u^3-2u^2+4u-1)^2$ $(u^6+u^5-u^4-5u^3-u^2+4u+2)$ $(u^6+2u^5-3u^4-2u^3-4u^2+10u-1)^2$ $(u^{10}+10u^9+\cdots+131u+29)(u^{15}+9u^{14}+\cdots-32u-16)$ $(1+4u^2+21u^4-30u^5+81u^6-114u^7+175u^8-200u^9+220u^{10}-192u^{11}+156u^{12}-104u$ $(-1+8u-16u^2+56u^3-122u^4+139u^5+7u^6-224u^7+260u^8-44u^9-127u^{10}+114u^{11}$
c_{11}	$u^{39}(u-1)^3(u+1)(u^3+u+1)^4(u^3-2u^2+3u-1)^2$ $(u^5+5u^4+13u^3+18u^2+16u+8)^2(u^6-2u^4+2u^2+1)$ $(u^6+4u^4+11u^2-3)^2(u^{15}+13u^{14}+\cdots-416u-64)$ $(1-8u+28u^2-67u^3+127u^4-183u^5+241u^6-281u^7+296u^8-279u^9+255u^{10}-224u^1$

XVI. Riley Polynomials

Crossings	Riley Polynomials at each crossings
c_1	$y^{37}(y-4)(y-1)^{11}(y^6-10y^5+9y^4-22y^3+62y^2-92y+1)^2$
	$(y^6-5y^5-4y^4-6y^3-8y^2-12y+1)^2$
	$(y^6-3y^5+9y^4-27y^3+37y^2-20y+4)$
	$(y^{10}-4y^9+\cdots+877y+841)(y^{15}-5y^{14}+\cdots+384y-256)$
	$(1+8y+58y^2+330y^3+1439y^4+4342y^5+9143y^6+1.40\times10^4y^7+1.62\times10^4y^8+1.50\times$
c_2	$y^{37}(y-2)^2(y-1)^4(y^3-2y^2+y-1)^2(y^3-2y^2+2y+1)^2$
	$(y^5-4y^4+6y^3-4y^2+y-1)^2$
	$(y^6-9y^5+21y^4-30y^3+23y^2-8y+1)^2$
	$(1+2y-3y^2-7y^3+8y^4-5y^5+y^6)^2(y^{15}-8y^{14}+\cdots+4y-4)$
	$(y^{36}-15y^{35}+\cdots+40y+169)$
c_3, c_5, c_6 c_8	$y^{37}(y-1)^4(y^2-6y+1)(y^6-4y^5+2y^4-14y^3+17y^2-14y+1)$
	$(y^6-y^5+4y^4-4y^3+4y^2-y+1)$
	$(y^{10}+8y^8-6y^7+22y^6-15y^5+39y^4-53y^3+25y^2-3y+1)$
	$(y^{12}-48y^{11}+\cdots-260y+1)(y^{12}-17y^{11}+\cdots-150y+9)$
	$(y^{15}+4y^{14}+\cdots+12y^2-1)(y^{36}-y^{35}+\cdots+28y+1)$
c_4, c_7, c_9	$y(y-2)^2(y-1)^4(y^3-2y^2+y-1)^2(y^3-2y^2+2y+1)^2$
	$(y^5-4y^4+6y^3-4y^2+y-1)^2$
	$(y^6-9y^5+21y^4-30y^3+23y^2-8y+1)^2$
	$(1+2y-3y^2-7y^3+8y^4-5y^5+y^6)^2(y^{15}-8y^{14}+\cdots+4y-4)$
	$(1-18y+143y^2-661y^3+2025y^4-4407y^5+7691y^6-1.19\times10^4y^7+1.64\times10^4y^8-1.94$
	$(y^{36}-15y^{35}+\cdots+40y+169)$
c_{10}	$y(y-4)(y-1)^{11}(y^6-10y^5+9y^4-22y^3+62y^2-92y+1)^2$
	$(y^6-5y^5-4y^4-6y^3-8y^2-12y+1)^2$
	$(y^6-3y^5+9y^4-27y^3+37y^2-20y+4)$
	$(y^{10}-4y^9+\cdots+877y+841)(y^{15}-5y^{14}+\cdots+384y-256)$
	$(1-32y-396y^2-1470y^3+2156y^4-3303y^5+6127y^6-1.50\times10^4y^7+2.28\times10^4y^8-1.8$
	$(1+8y+58y^2+330y^3+1439y^4+4342y^5+9143y^6+1.40\times10^4y^7+1.62\times10^4y^8+1.50\times$
c_{11}	$y^{39}(y-1)^4(y^3-2y^2+2y+1)^2(y^3+2y^2+y-1)^4$
	$(y^3+2y^2+5y-1)^2(y^3+4y^2+11y-3)^4$
	$(y^5+y^4+21y^3+12y^2-32y-64)^2$
	$(y^{15}-7y^{14}+\cdots+11264y-4096)$
	$(1-8y-34y^2+177y^3+1199y^4+2693y^5+4079y^6+4451y^7+3922y^8+2157y^9+1045y^{10}$