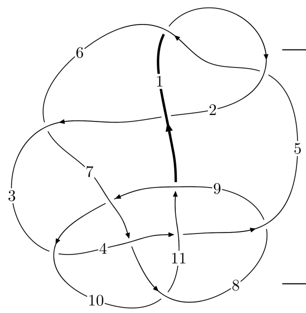
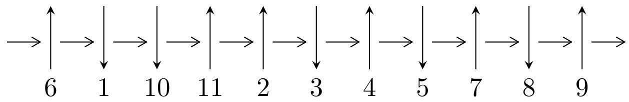
$11a_{73}$ ($K11a_{73}$)



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$\begin{aligned}
I_1^u &= \langle -11711u^{40} + 64575u^{39} + \cdots + 3011b - 10581,\ -4430u^{40} + 27638u^{39} + \cdots + 3011a - 6831,\\
&\quad u^{41} - 6u^{40} + \cdots + 5u - 1\rangle\\
I_2^u &= \langle 695u^{30}a + 2470u^{30} + \cdots + 1245a - 1088,\ 4u^{29}a - u^{30} + \cdots + 6a - 2,\ u^{31} + 2u^{30} + \cdots + 2u + 1\rangle\\
I_3^u &= \langle u^{11} + u^{10} + 2u^9 + 3u^8 + 2u^7 + 4u^6 + 2u^4 - u^3 + 2u^2 + b - 2u + 1,\\
&\quad -u^{11} - 4u^9 - u^8 - 6u^7 - u^6 - 4u^5 + u^4 - u^3 + 3u^2 + a - 1,\\
&\quad u^{12} - u^{11} + 4u^{10} - 3u^9 + 7u^8 - 5u^7 + 7u^6 - 6u^5 + 6u^4 - 6u^3 + 4u^2 - 2u + 1\rangle\\
I_4^u &= \langle b - 1,\ a^2 + 2au + 3a + 3u + 2,\ u^2 + u + 1\rangle
\end{aligned}$$

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

* 5 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 120 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. $\boldsymbol{I^u_1 = \langle -11711u^{40} + 64575u^{39} + \cdots + 3011b - 10581,\ -4430u^{40} + 27638u^{39} + \cdots + 3011a - 6831,\ u^{41} - 6u^{40} + \cdots + 5u - 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^5-2u^3-u \\ u^5+u^3+u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} 1.47127u^{40} - 9.17901u^{39} + \cdots - 5.53836u + 2.26868 \\ 3.88941u^{40} - 21.4464u^{39} + \cdots - 12.0956u + 3.51411 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.531385u^{40} - 0.883427u^{39} + \cdots - 9.18931u + 3.76752 \\ 6.82431u^{40} - 39.2046u^{39} + \cdots - 25.0438u + 5.73564 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.591498u^{40} + 4.05413u^{39} + \cdots + 5.08303u + 0.803720 \\ 1.64198u^{40} - 9.67021u^{39} + \cdots - 8.71504u + 2.71837 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} 0.209565u^{40} - 0.0640983u^{39} + \cdots + 5.34341u - 3.59582 \\ 1.85586u^{40} - 8.46463u^{39} + \cdots + 2.68615u - 1.43806 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 5.73564u^{40} - 27.5895u^{39} + \cdots - 8.76918u + 3.63434 \\ -4.07174u^{40} + 21.9807u^{39} + \cdots + 6.42444u - 0.531385 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} 5.73564u^{40} - 27.5895u^{39} + \cdots - 8.76918u + 3.63434 \\ -4.07174u^{40} + 21.9807u^{39} + \cdots + 6.42444u - 0.531385 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -\frac{11684}{3011}u^{40} + \frac{62324}{3011}u^{39} + \cdots + \frac{34002}{3011}u + \frac{13707}{3011}$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$u^{41} - 6u^{40} + \cdots + 5u - 1$
c_2	$u^{41} + 22u^{40} + \cdots + 11u - 1$
c_3, c_8	$u^{41} + 2u^{40} + \cdots + 8u^2 - 1$
c_4, c_7	$u^{41} + 2u^{40} + \cdots - 24u^2 + 1$
c_6	$u^{41} + 6u^{40} + \cdots - 1163u - 157$
c_9, c_{11}	$u^{41} - 6u^{40} + \cdots + 4u + 1$
c_{10}	$u^{41} - 22u^{40} + \cdots + 25u^2 - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{41} + 22y^{40} + \cdots + 11y - 1$
c_2	$y^{41} - 2y^{40} + \cdots + 119y - 1$
c_3, c_8	$y^{41} - 10y^{40} + \cdots + 16y - 1$
c_4, c_7	$y^{41} - 22y^{40} + \cdots + 48y - 1$
c_6	$y^{41} - 20y^{40} + \cdots + 345571y - 24649$
c_9, c_{11}	$y^{41} - 14y^{40} + \cdots + 12y - 1$
c_{10}	$y^{41} + 10y^{39} + \cdots + 50y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.845612 + 0.498102I$ $a = 0.475474 + 0.261626I$ $b = -0.334988 - 0.050698I$	$1.33190 + 2.47162I$	$16.2458 - 1.2870I$
$u = 0.845612 - 0.498102I$ $a = 0.475474 - 0.261626I$ $b = -0.334988 + 0.050698I$	$1.33190 - 2.47162I$	$16.2458 + 1.2870I$
$u = -0.725875 + 0.718682I$ $a = 0.83857 + 1.21867I$ $b = -0.903416 - 0.468519I$	$3.04955 + 5.79639I$	$4.67570 - 5.28890I$
$u = -0.725875 - 0.718682I$ $a = 0.83857 - 1.21867I$ $b = -0.903416 + 0.468519I$	$3.04955 - 5.79639I$	$4.67570 + 5.28890I$
$u = -0.515395 + 0.785309I$ $a = -1.03703 - 1.54909I$ $b = 1.242510 + 0.373109I$	$3.38107 - 0.44143I$	$9.27545 - 0.21018I$
$u = -0.515395 - 0.785309I$ $a = -1.03703 + 1.54909I$ $b = 1.242510 - 0.373109I$	$3.38107 + 0.44143I$	$9.27545 + 0.21018I$
$u = -0.536686 + 0.762150I$ $a = -2.07413 - 0.35216I$ $b = 1.26360 - 0.68186I$	$3.44275 - 3.84392I$	$9.44835 + 8.23646I$
$u = -0.536686 - 0.762150I$ $a = -2.07413 + 0.35216I$ $b = 1.26360 + 0.68186I$	$3.44275 + 3.84392I$	$9.44835 - 8.23646I$
$u = -0.680543 + 0.851083I$ $a = 1.65602 + 0.00258I$ $b = -1.067800 + 0.649528I$	$2.65853 - 11.08820I$	$3.28154 + 9.85902I$
$u = -0.680543 - 0.851083I$ $a = 1.65602 - 0.00258I$ $b = -1.067800 - 0.649528I$	$2.65853 + 11.08820I$	$3.28154 - 9.85902I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.193943 + 0.889112I$ $a = 0.883549 + 0.178964I$ $b = 0.138077 + 0.486291I$	$-0.85333 + 1.82668I$	$-2.01304 - 4.52189I$
$u = 0.193943 - 0.889112I$ $a = 0.883549 - 0.178964I$ $b = 0.138077 - 0.486291I$	$-0.85333 - 1.82668I$	$-2.01304 + 4.52189I$
$u = 0.857936 + 0.229320I$ $a = 1.55370 - 0.62249I$ $b = -1.20325 + 1.09295I$	$-0.91359 - 13.22010I$	$1.63608 + 7.45702I$
$u = 0.857936 - 0.229320I$ $a = 1.55370 + 0.62249I$ $b = -1.20325 - 1.09295I$	$-0.91359 + 13.22010I$	$1.63608 - 7.45702I$
$u = 0.848782$ $a = -0.709994$ $b = 0.892393$	0.744100	9.40900
$u = 0.454786 + 1.065100I$ $a = -0.31016 + 1.42726I$ $b = 0.511379 + 0.571103I$	$-0.42808 + 3.78436I$	$2.16188 - 5.53774I$
$u = 0.454786 - 1.065100I$ $a = -0.31016 - 1.42726I$ $b = 0.511379 - 0.571103I$	$-0.42808 - 3.78436I$	$2.16188 + 5.53774I$
$u = 0.539684 + 1.034030I$ $a = 0.779420 - 0.504456I$ $b = -0.164278 - 0.300558I$	$-0.14735 + 2.61609I$	$2.94577 - 3.55552I$
$u = 0.539684 - 1.034030I$ $a = 0.779420 + 0.504456I$ $b = -0.164278 + 0.300558I$	$-0.14735 - 2.61609I$	$2.94577 + 3.55552I$
$u = -0.455367 + 1.107240I$ $a = -1.04912 - 1.13395I$ $b = 1.50116 + 0.16642I$	$-0.93408 - 3.72501I$	$0. + 3.78091I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.455367 - 1.107240I$ $a = -1.04912 + 1.13395I$ $b = 1.50116 - 0.16642I$	$-0.93408 + 3.72501I$	$0. - 3.78091I$
$u = 0.362831 + 1.165210I$ $a = 1.070360 - 0.324888I$ $b = 0.79605 - 1.29861I$	$-2.85882 - 1.02122I$	0
$u = 0.362831 - 1.165210I$ $a = 1.070360 + 0.324888I$ $b = 0.79605 + 1.29861I$	$-2.85882 + 1.02122I$	0
$u = 0.746103 + 0.183057I$ $a = -1.285710 + 0.387657I$ $b = 1.07761 - 1.20252I$	$1.05085 - 4.60926I$	$7.98736 + 6.22230I$
$u = 0.746103 - 0.183057I$ $a = -1.285710 - 0.387657I$ $b = 1.07761 + 1.20252I$	$1.05085 + 4.60926I$	$7.98736 - 6.22230I$
$u = -0.448486 + 1.175510I$ $a = 0.492889 + 0.632416I$ $b = -0.817436 - 0.184411I$	$-5.68068 - 4.22254I$	0
$u = -0.448486 - 1.175510I$ $a = 0.492889 - 0.632416I$ $b = -0.817436 + 0.184411I$	$-5.68068 + 4.22254I$	0
$u = 0.514268 + 1.164380I$ $a = -1.64613 + 1.51432I$ $b = 1.15140 + 1.37689I$	$-1.79982 + 9.32852I$	0
$u = 0.514268 - 1.164380I$ $a = -1.64613 - 1.51432I$ $b = 1.15140 - 1.37689I$	$-1.79982 - 9.32852I$	0
$u = 0.297512 + 1.244050I$ $a = -0.449120 + 0.044426I$ $b = -1.03032 + 1.16487I$	$-5.61358 - 9.45917I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.297512 - 1.244050I$ $a = -0.449120 - 0.044426I$ $b = -1.03032 - 1.16487I$	$-5.61358 + 9.45917I$	0
$u = -0.717723$ $a = 1.31735$ $b = -0.635831$	-2.35187	-3.23270
$u = 0.559000 + 1.189400I$ $a = 1.71865 - 1.26258I$ $b = -1.27637 - 1.18033I$	$-3.7858 + 18.4184I$	0
$u = 0.559000 - 1.189400I$ $a = 1.71865 + 1.26258I$ $b = -1.27637 + 1.18033I$	$-3.7858 - 18.4184I$	0
$u = 0.220242 + 1.309270I$ $a = 0.00788396 - 0.00223172I$ $b = -0.246595 - 0.581812I$	$-4.69336 + 5.76085I$	0
$u = 0.220242 - 1.309270I$ $a = 0.00788396 + 0.00223172I$ $b = -0.246595 + 0.581812I$	$-4.69336 - 5.76085I$	0
$u = 0.506994 + 1.237050I$ $a = -0.343128 + 0.730701I$ $b = 0.837607 + 0.284107I$	$-2.86146 + 4.86399I$	0
$u = 0.506994 - 1.237050I$ $a = -0.343128 - 0.730701I$ $b = 0.837607 - 0.284107I$	$-2.86146 - 4.86399I$	0
$u = 0.337324 + 0.271834I$ $a = -0.07427 - 1.63066I$ $b = 0.823540 - 0.201797I$	$1.65904 - 0.03957I$	$6.61397 + 0.60191I$
$u = 0.337324 - 0.271834I$ $a = -0.07427 + 1.63066I$ $b = 0.823540 + 0.201797I$	$1.65904 + 0.03957I$	$6.61397 - 0.60191I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.278824$ $a = -5.02278$ $b = 1.14650$	1.63641	6.23630

II. $\boldsymbol{I_2^u = \langle 695u^{30}a + 2470u^{30} + \cdots + 1245a - 1088,\ 4u^{29}a - u^{30} + \cdots + 6a - 2,\ u^{31} + 2u^{30} + \cdots + 2u + 1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2 + 1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^5 - 2u^3 - u \\ u^5 + u^3 + u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3 + u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} a \\ -0.622202au^{30} - 2.21128u^{30} + \cdots - 1.11459a + 0.974038 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} -0.209490au^{30} + 0.780662u^{30} + \cdots + 0.660698a - 1.61594 \\ -0.339302au^{30} - 3.61594u^{30} + \cdots - 0.622202a + 0.788720 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} -0.788720au^{30} - 0.795882u^{30} + \cdots + 0.0259624a + 3.27932 \\ -1.01253au^{30} + 2.10654u^{30} + \cdots - 0.806625a - 1.64369 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -2.04118au^{30} + 3.35004u^{30} + \cdots - 1.79320a + 1.74217 \\ 0.509400au^{30} - 0.829902u^{30} + \cdots + 1.85497a + 1.23277 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.622202au^{30} + 0.788720u^{30} + \cdots - 0.114593a + 0.974038 \\ -0.153089au^{30} - 3.19875u^{30} + \cdots - 0.209490a - 0.219338 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} -0.622202au^{30} + 0.788720u^{30} + \cdots - 0.114593a + 0.974038 \\ -0.153089au^{30} - 3.19875u^{30} + \cdots - 0.209490a - 0.219338 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes
$= 9u^{30} + 12u^{29} + 79u^{28} + 93u^{27} + 328u^{26} + 374u^{25} + 861u^{24} + 990u^{23} + 1590u^{22} + 1876u^{21} + 2214u^{20} + 2605u^{19} + 2432u^{18} + 2616u^{17} + 2165u^{16} + 1828u^{15} + 1490u^{14} + 816u^{13} + 642u^{12} + 206u^{11} - 4u^9 - 174u^8 - 52u^7 - 60u^6 - 64u^5 + 4u^4 - 7u^3 + 12u^2 + 16u - 1$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_5	$(u^{31} + 2u^{30} + \cdots + 2u + 1)^2$
c_2	$(u^{31} + 16u^{30} + \cdots - 2u - 1)^2$
c_3, c_8	$u^{62} - 4u^{60} + \cdots - 391u + 173$
c_4, c_7	$u^{62} + 6u^{60} + \cdots - u + 1$
c_6	$(u^{31} - 2u^{30} + \cdots - 26u + 5)^2$
c_9, c_{11}	$u^{62} + 5u^{61} + \cdots + 30u + 1$
c_{10}	$(u^{31} + 15u^{30} + \cdots + 6u + 4)^2$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$(y^{31} + 16y^{30} + \cdots - 2y - 1)^2$
c_2	$(y^{31} + 32y^{29} + \cdots + 14y - 1)^2$
c_3, c_8	$y^{62} - 8y^{61} + \cdots - 1236207y + 29929$
c_4, c_7	$y^{62} + 12y^{61} + \cdots - 47y + 1$
c_6	$(y^{31} - 16y^{30} + \cdots - 534y - 25)^2$
c_9, c_{11}	$y^{62} + 23y^{61} + \cdots - 104y + 1$
c_{10}	$(y^{31} - 5y^{30} + \cdots + 236y - 16)^2$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\text{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.700328 + 0.800493I$ $a = 1.146060 - 0.099237I$ $b = -0.574058 - 0.237024I$	$0.66027 + 2.65228I$	$-9.42163 - 5.74104I$
$u = 0.700328 + 0.800493I$ $a = -0.261910 - 0.128100I$ $b = 0.301124 + 0.295589I$	$0.66027 + 2.65228I$	$-9.42163 - 5.74104I$
$u = 0.700328 - 0.800493I$ $a = 1.146060 + 0.099237I$ $b = -0.574058 + 0.237024I$	$0.66027 - 2.65228I$	$-9.42163 + 5.74104I$
$u = 0.700328 - 0.800493I$ $a = -0.261910 + 0.128100I$ $b = 0.301124 - 0.295589I$	$0.66027 - 2.65228I$	$-9.42163 + 5.74104I$
$u = 0.576719 + 0.939494I$ $a = 0.06205 + 1.48991I$ $b = 0.971416 - 0.435463I$	$1.79992 + 1.42306I$	$5.96720 + 7.06639I$
$u = 0.576719 + 0.939494I$ $a = 1.56139 - 0.38632I$ $b = -0.912307 + 0.063353I$	$1.79992 + 1.42306I$	$5.96720 + 7.06639I$
$u = 0.576719 - 0.939494I$ $a = 0.06205 - 1.48991I$ $b = 0.971416 + 0.435463I$	$1.79992 - 1.42306I$	$5.96720 - 7.06639I$
$u = 0.576719 - 0.939494I$ $a = 1.56139 + 0.38632I$ $b = -0.912307 - 0.063353I$	$1.79992 - 1.42306I$	$5.96720 - 7.06639I$
$u = -0.847519 + 0.248601I$ $a = -0.626669 - 0.783073I$ $b = 0.478939 + 1.042720I$	$-2.48415 + 4.99236I$	$-3.07968 - 5.91781I$
$u = -0.847519 + 0.248601I$ $a = 1.43877 + 0.44457I$ $b = -0.893298 - 0.771257I$	$-2.48415 + 4.99236I$	$-3.07968 - 5.91781I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.847519-0.248601I$ $a=-0.626669+0.783073I$ $b=\ \ 0.478939-1.042720I$	$-2.48415-4.99236I$	$-3.07968+5.91781I$
$u=-0.847519-0.248601I$ $a=\ \ 1.43877-0.44457I$ $b=-0.893298+0.771257I$	$-2.48415-4.99236I$	$-3.07968+5.91781I$
$u=\ \ 0.613097+0.623277I$ $a=-1.44473-0.64813I$ $b=\ \ 1.074650+0.709661I$	$2.71352+3.26681I$	$9.13719-8.60586I$
$u=\ \ 0.613097+0.623277I$ $a=\ \ 1.88374-1.08780I$ $b=-0.810431-0.123872I$	$2.71352+3.26681I$	$9.13719-8.60586I$
$u=\ \ 0.613097-0.623277I$ $a=-1.44473+0.64813I$ $b=\ \ 1.074650-0.709661I$	$2.71352-3.26681I$	$9.13719+8.60586I$
$u=\ \ 0.613097-0.623277I$ $a=\ \ 1.88374+1.08780I$ $b=-0.810431+0.123872I$	$2.71352-3.26681I$	$9.13719+8.60586I$
$u=-0.358609+1.074610I$ $a=\ \ 1.247210+0.063972I$ $b=\ \ 0.74515+1.66291I$	$-2.29804+2.01394I$	$0.79058-3.76194I$
$u=-0.358609+1.074610I$ $a=-0.49075-1.65979I$ $b=-0.0812528-0.0525556I$	$-2.29804+2.01394I$	$0.79058-3.76194I$
$u=-0.358609-1.074610I$ $a=\ \ 1.247210-0.063972I$ $b=\ \ 0.74515-1.66291I$	$-2.29804-2.01394I$	$0.79058+3.76194I$
$u=-0.358609-1.074610I$ $a=-0.49075+1.65979I$ $b=-0.0812528+0.0525556I$	$-2.29804-2.01394I$	$0.79058+3.76194I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = -0.066980 + 0.843210I$ $a = 0.905300 + 1.065700I$ $b = 0.372827 + 1.045040I$	$-1.82841 + 2.63278I$	$-4.56232 - 0.80559I$
$u = -0.066980 + 0.843210I$ $a = 1.50981 - 0.90367I$ $b = -0.830677 + 0.572923I$	$-1.82841 + 2.63278I$	$-4.56232 - 0.80559I$
$u = -0.066980 - 0.843210I$ $a = 0.905300 - 1.065700I$ $b = 0.372827 - 1.045040I$	$-1.82841 - 2.63278I$	$-4.56232 + 0.80559I$
$u = -0.066980 - 0.843210I$ $a = 1.50981 + 0.90367I$ $b = -0.830677 - 0.572923I$	$-1.82841 - 2.63278I$	$-4.56232 + 0.80559I$
$u = 0.423601 + 1.144370I$ $a = 0.200693 - 0.558634I$ $b = 0.664215 - 1.092670I$	$-5.31357 - 0.42431I$	$-6.76845 + 0.89097I$
$u = 0.423601 + 1.144370I$ $a = 1.84585 - 1.43049I$ $b = -1.19733 - 1.54730I$	$-5.31357 - 0.42431I$	$-6.76845 + 0.89097I$
$u = 0.423601 - 1.144370I$ $a = 0.200693 + 0.558634I$ $b = 0.664215 + 1.092670I$	$-5.31357 + 0.42431I$	$-6.76845 - 0.89097I$
$u = 0.423601 - 1.144370I$ $a = 1.84585 + 1.43049I$ $b = -1.19733 + 1.54730I$	$-5.31357 + 0.42431I$	$-6.76845 - 0.89097I$
$u = 0.470485 + 1.145180I$ $a = -1.312440 - 0.512271I$ $b = -0.95000 + 1.91169I$	$-4.97995 + 8.43248I$	$-5.41543 - 9.16645I$
$u = 0.470485 + 1.145180I$ $a = -2.00403 + 1.37416I$ $b = 0.787153 + 0.878249I$	$-4.97995 + 8.43248I$	$-5.41543 - 9.16645I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.470485 - 1.145180I$ $a = -1.312440 + 0.512271I$ $b = -0.95000 - 1.91169I$	$-4.97995 - 8.43248I$	$-5.41543 + 9.16645I$
$u = 0.470485 - 1.145180I$ $a = -2.00403 - 1.37416I$ $b = 0.787153 - 0.878249I$	$-4.97995 - 8.43248I$	$-5.41543 + 9.16645I$
$u = -0.526321 + 1.124110I$ $a = 0.64280 + 1.56277I$ $b = -0.384960 + 0.390707I$	$-1.03143 - 9.47799I$	$3.54432 + 9.88259I$
$u = -0.526321 + 1.124110I$ $a = -2.06575 - 1.23148I$ $b = 1.29214 - 1.47017I$	$-1.03143 - 9.47799I$	$3.54432 + 9.88259I$
$u = -0.526321 - 1.124110I$ $a = 0.64280 - 1.56277I$ $b = -0.384960 - 0.390707I$	$-1.03143 + 9.47799I$	$3.54432 - 9.88259I$
$u = -0.526321 - 1.124110I$ $a = -2.06575 + 1.23148I$ $b = 1.29214 + 1.47017I$	$-1.03143 + 9.47799I$	$3.54432 - 9.88259I$
$u = -0.442008 + 1.171670I$ $a = 0.742971 + 0.990301I$ $b = -1.076050 + 0.211669I$	$-5.69749 - 4.19773I$	$-6.88583 + 3.70112I$
$u = -0.442008 + 1.171670I$ $a = 0.252643 + 0.243666I$ $b = -0.549168 - 0.536294I$	$-5.69749 - 4.19773I$	$-6.88583 + 3.70112I$
$u = -0.442008 - 1.171670I$ $a = 0.742971 - 0.990301I$ $b = -1.076050 - 0.211669I$	$-5.69749 + 4.19773I$	$-6.88583 - 3.70112I$
$u = -0.442008 - 1.171670I$ $a = 0.252643 - 0.243666I$ $b = -0.549168 + 0.536294I$	$-5.69749 + 4.19773I$	$-6.88583 - 3.70112I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.688548+0.289520I$ $a=\ \ 0.88012-1.18793I$ $b=-0.486469-0.239705I$	$1.39266+4.80763I$	$7.37986-6.53110I$
$u=-0.688548+0.289520I$ $a=-1.56433-1.11235I$ $b=\ \ 1.14306+1.26502I$	$1.39266+4.80763I$	$7.37986-6.53110I$
$u=-0.688548-0.289520I$ $a=\ \ 0.88012+1.18793I$ $b=-0.486469+0.239705I$	$1.39266-4.80763I$	$7.37986+6.53110I$
$u=-0.688548-0.289520I$ $a=-1.56433+1.11235I$ $b=\ \ 1.14306-1.26502I$	$1.39266-4.80763I$	$7.37986+6.53110I$
$u=-0.282165+1.228290I$ $a=\ \ 0.464148+0.295155I$ $b=\ \ 0.219790+1.134530I$	$-7.20604+1.39264I$	$-8.15870-2.08069I$
$u=-0.282165+1.228290I$ $a=-0.0693346-0.1131790I$ $b=-0.724830-0.935158I$	$-7.20604+1.39264I$	$-8.15870-2.08069I$
$u=-0.282165-1.228290I$ $a=\ \ 0.464148-0.295155I$ $b=\ \ 0.219790-1.134530I$	$-7.20604-1.39264I$	$-8.15870+2.08069I$
$u=-0.282165-1.228290I$ $a=-0.0693346+0.1131790I$ $b=-0.724830+0.935158I$	$-7.20604-1.39264I$	$-8.15870+2.08069I$
$u=-0.729174$ $a=\ \ 1.16133$ $b=-0.335726$	-2.34284	-3.47960
$u=-0.729174$ $a=\ \ 1.49783$ $b=-0.962125$	-2.34284	-3.47960

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.280769+0.672881I$ $a=-0.133027+0.453048I$ $b=-0.05617-1.63724I$	$-0.95364-4.69207I$	$0.70104+11.37557I$
$u=-0.280769+0.672881I$ $a=-3.21056+1.44491I$ $b=\ 0.290721-0.533103I$	$-0.95364-4.69207I$	$0.70104+11.37557I$
$u=-0.280769-0.672881I$ $a=-0.133027-0.453048I$ $b=-0.05617+1.63724I$	$-0.95364+4.69207I$	$0.70104-11.37557I$
$u=-0.280769-0.672881I$ $a=-3.21056-1.44491I$ $b=\ 0.290721+0.533103I$	$-0.95364+4.69207I$	$0.70104-11.37557I$
$u=-0.562423+1.180730I$ $a=-1.36886-0.47572I$ $b=\ 0.564223-1.182210I$	$-5.26969-10.18350I$	$-4.99915+9.25403I$
$u=-0.562423+1.180730I$ $a=\ 1.54748+1.00626I$ $b=-1.006650+0.843864I$	$-5.26969-10.18350I$	$-4.99915+9.25403I$
$u=-0.562423-1.180730I$ $a=-1.36886+0.47572I$ $b=\ 0.564223+1.182210I$	$-5.26969+10.18350I$	$-4.99915-9.25403I$
$u=-0.562423-1.180730I$ $a=\ 1.54748-1.00626I$ $b=-1.006650-0.843864I$	$-5.26969+10.18350I$	$-4.99915-9.25403I$
$u=\ 0.635699+0.077135I$ $a=\ 1.37652+1.04296I$ $b=-0.83111-1.61735I$	$-2.05368-4.22273I$	$-2.98921+5.90921I$
$u=\ 0.635699+0.077135I$ $a=-1.98473-0.26301I$ $b=\ 0.608283-0.905397I$	$-2.05368-4.22273I$	$-2.98921+5.90921I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.635699 - 0.077135I$ $a = 1.37652 - 1.04296I$ $b = -0.83111 + 1.61735I$	$-2.05368 + 4.22273I$	$-2.98921 - 5.90921I$
$u = 0.635699 - 0.077135I$ $a = -1.98473 + 0.26301I$ $b = 0.608283 + 0.905397I$	$-2.05368 + 4.22273I$	$-2.98921 - 5.90921I$

III.

$\boldsymbol{I_3^u = \langle u^{11}+u^{10}+\cdots+b+1,\ -u^{11}-4u^9+\cdots+a-1,\ u^{12}-u^{11}+\cdots-2u+1\rangle}$

(i) Arc colorings

$$a_1 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$
$$a_6 = \begin{pmatrix} 0 \\ u \end{pmatrix}$$
$$a_2 = \begin{pmatrix} 1 \\ -u^2 \end{pmatrix}$$
$$a_3 = \begin{pmatrix} u^2+1 \\ -u^2 \end{pmatrix}$$
$$a_7 = \begin{pmatrix} -u^5-2u^3-u \\ u^5+u^3+u \end{pmatrix}$$
$$a_5 = \begin{pmatrix} -u \\ u^3+u \end{pmatrix}$$
$$a_9 = \begin{pmatrix} u^{11}+4u^9+u^8+6u^7+u^6+4u^5-u^4+u^3-3u^2+1 \\ -u^{11}-u^{10}-2u^9-3u^8-2u^7-4u^6-2u^4+u^3-2u^2+2u-1 \end{pmatrix}$$
$$a_8 = \begin{pmatrix} u^{11}+3u^9+u^8+4u^7+u^6+2u^5-u^4-2u^2-u+1 \\ -u^{10}+u^9-3u^8+2u^7-4u^6+3u^5-3u^4+3u^3-3u^2+3u-1 \end{pmatrix}$$
$$a_{11} = \begin{pmatrix} u^{11}-2u^{10}+\cdots+7u-2 \\ -u^{11}-3u^9-4u^7-3u^5+u^4-2u^3+u^2-u-1 \end{pmatrix}$$
$$a_4 = \begin{pmatrix} -u^{11}-2u^9-u^8-2u^7-2u^6-u^4+2u-1 \\ -u^{11}+u^{10}-3u^9+3u^8-4u^7+5u^6-3u^5+5u^4-3u^3+3u^2-2u \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{11}-u^{10}+3u^9-2u^8+4u^7-3u^6+3u^5-3u^4+3u^3-3u^2+u+1 \\ u^{11}-u^{10}+4u^9-3u^8+6u^7-5u^6+5u^5-6u^4+4u^3-5u^2+3u-1 \end{pmatrix}$$
$$a_{10} = \begin{pmatrix} u^{11}-u^{10}+3u^9-2u^8+4u^7-3u^6+3u^5-3u^4+3u^3-3u^2+u+1 \\ u^{11}-u^{10}+4u^9-3u^8+6u^7-5u^6+5u^5-6u^4+4u^3-5u^2+3u-1 \end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes

$= 2u^{11}+6u^{10}-2u^9+18u^8-8u^7+24u^6-10u^5+16u^4-5u^3+16u^2-10u+4$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{12} - u^{11} + \cdots - 2u + 1$
c_2	$u^{12} + 7u^{11} + \cdots + 4u + 1$
c_3, c_8	$u^{12} - u^{11} + 2u^{10} - u^9 + 4u^8 - 3u^7 + 4u^6 - 2u^5 + 4u^4 - 3u^3 + 2u^2 - u + 1$
c_4, c_7	$u^{12} + u^{11} + 2u^{10} + 3u^9 + 4u^8 + 2u^7 + 4u^6 + 3u^5 + 4u^4 + u^3 + 2u^2 + u + 1$
c_5	$u^{12} + u^{11} + \cdots + 2u + 1$
c_6	$u^{12} - u^{11} - u^{10} + u^9 - 3u^8 + 3u^7 + 11u^6 - 4u^5 - 14u^4 + u^3 + 6u^2 + 1$
c_9, c_{11}	$u^{12} - 3u^{11} + \cdots - 3u + 1$
c_{10}	$u^{12} + 9u^{11} + \cdots + 87u + 13$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y^{12} + 7y^{11} + \cdots + 4y + 1$
c_2	$y^{12} - y^{11} + \cdots - 8y + 1$
c_3, c_8	$y^{12} + 3y^{11} + \cdots + 3y + 1$
c_4, c_7	$y^{12} + 3y^{11} + \cdots + 3y + 1$
c_6	$y^{12} - 3y^{11} + \cdots + 12y + 1$
c_9, c_{11}	$y^{12} + 11y^{11} + \cdots + 3y + 1$
c_{10}	$y^{12} + 5y^{11} + \cdots - 263y + 169$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_3^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.765338+0.701632I$ $a=-0.773115+0.063272I$ $b=\ \ 0.457387-0.273460I$	$1.13372-2.84541I$	$8.3721+15.0712I$
$u=-0.765338-0.701632I$ $a=-0.773115-0.063272I$ $b=\ \ 0.457387+0.273460I$	$1.13372+2.84541I$	$8.3721-15.0712I$
$u=\ \ 0.379767+1.126510I$ $a=\ \ 1.10555-0.93951I$ $b=\ \ 0.28116-1.42256I$	$-3.89632-1.51522I$	$-4.76999+3.91912I$
$u=\ \ 0.379767-1.126510I$ $a=\ \ 1.10555+0.93951I$ $b=\ \ 0.28116+1.42256I$	$-3.89632+1.51522I$	$-4.76999-3.91912I$
$u=-0.336660+1.205570I$ $a=-0.133510+0.523237I$ $b=-0.312570-0.542789I$	$-4.16467-5.30019I$	$-0.64743+6.33134I$
$u=-0.336660-1.205570I$ $a=-0.133510-0.523237I$ $b=-0.312570+0.542789I$	$-4.16467+5.30019I$	$-0.64743-6.33134I$
$u=\ \ 0.517643+1.141910I$ $a=-1.75917+1.08825I$ $b=\ \ 0.67731+1.31649I$	$-2.88156+9.38139I$	$-2.89288-9.73442I$
$u=\ \ 0.517643-1.141910I$ $a=-1.75917-1.08825I$ $b=\ \ 0.67731-1.31649I$	$-2.88156-9.38139I$	$-2.89288+9.73442I$
$u=\ \ 0.685435+0.249226I$ $a=-1.131530+0.408794I$ $b=\ \ 0.524852-1.118490I$	$-0.28783-4.74486I$	$1.19154+6.65535I$
$u=\ \ 0.685435-0.249226I$ $a=-1.131530-0.408794I$ $b=\ \ 0.524852+1.118490I$	$-0.28783+4.74486I$	$1.19154-6.65535I$

Solutions to I_3^u	$\sqrt{-1}(\text{vol} + \sqrt{-1}CS)$	Cusp shape
$u = 0.019153 + 0.707581I$ $a = 2.19177 - 0.06943I$ $b = -0.128135 + 1.122210I$	$-1.41788 + 3.69137I$	$-2.25337 - 6.20418I$
$u = 0.019153 - 0.707581I$ $a = 2.19177 + 0.06943I$ $b = -0.128135 - 1.122210I$	$-1.41788 - 3.69137I$	$-2.25337 + 6.20418I$

IV. $I_4^u = \langle b-1,\ a^2+2au+3a+3u+2,\ u^2+u+1\rangle$

(i) Arc colorings

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

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 7u+7$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_6	$(u^2+u+1)^2$
c_3, c_4, c_7 c_8	$u^4+u^3-u^2-u+1$
c_5	$(u^2-u+1)^2$
c_9, c_{11}	$(u-1)^4$
c_{10}	u^4

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6	$(y^2+y+1)^2$
c_3, c_4, c_7 c_8	$y^4-3y^3+5y^2-3y+1$
c_9, c_{11}	$(y-1)^4$
c_{10}	y^4

(vi) Complex Volumes and Cusp Shapes

Solutions to I_4^u	$\sqrt{-1}(\mathrm{vol} + \sqrt{-1}CS)$	Cusp shape
$u = -0.500000 + 0.866025I$ $a = -1.57070 - 0.10728I$ $b = \ \ 1.00000$	$1.64493 - 2.02988I$	$3.50000 + 6.06218I$
$u = -0.500000 + 0.866025I$ $a = -0.42930 - 1.62477I$ $b = \ \ 1.00000$	$1.64493 - 2.02988I$	$3.50000 + 6.06218I$
$u = -0.500000 - 0.866025I$ $a = -1.57070 + 0.10728I$ $b = \ \ 1.00000$	$1.64493 + 2.02988I$	$3.50000 - 6.06218I$
$u = -0.500000 - 0.866025I$ $a = -0.42930 + 1.62477I$ $b = \ \ 1.00000$	$1.64493 + 2.02988I$	$3.50000 - 6.06218I$

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

(i) Arc colorings

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

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

$a_2 = \begin{pmatrix}1\\0\end{pmatrix}$

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

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

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

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

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

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

$a_4 = \begin{pmatrix}-2\\-1\end{pmatrix}$

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

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

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 6$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1, c_2, c_5 c_6, c_{10}	u
c_3, c_4, c_7 c_8, c_9, c_{11}	$u - 1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1, c_2, c_5 c_6, c_{10}	y
c_3, c_4, c_7 c_8, c_9, c_{11}	$y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions 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

VI. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u(u^2+u+1)^2(u^{12}-u^{11}+\cdots-2u+1)(u^{31}+2u^{30}+\cdots+2u+1)^2$ $\cdot(u^{41}-6u^{40}+\cdots+5u-1)$
c_2	$u(u^2+u+1)^2(u^{12}+7u^{11}+\cdots+4u+1)$ $\cdot((u^{31}+16u^{30}+\cdots-2u-1)^2)(u^{41}+22u^{40}+\cdots+11u-1)$
c_3, c_8	$(u-1)(u^4+u^3-u^2-u+1)$ $\cdot(u^{12}-u^{11}+2u^{10}-u^9+4u^8-3u^7+4u^6-2u^5+4u^4-3u^3+2u^2-u+1)$ $\cdot(u^{41}+2u^{40}+\cdots+8u^2-1)(u^{62}-4u^{60}+\cdots-391u+173)$
c_4, c_7	$(u-1)(u^4+u^3-u^2-u+1)$ $\cdot(u^{12}+u^{11}+2u^{10}+3u^9+4u^8+2u^7+4u^6+3u^5+4u^4+u^3+2u^2+u+1)$ $\cdot(u^{41}+2u^{40}+\cdots-24u^2+1)(u^{62}+6u^{60}+\cdots-u+1)$
c_5	$u(u^2-u+1)^2(u^{12}+u^{11}+\cdots+2u+1)(u^{31}+2u^{30}+\cdots+2u+1)^2$ $\cdot(u^{41}-6u^{40}+\cdots+5u-1)$
c_6	$u(u^2+u+1)^2$ $\cdot(u^{12}-u^{11}-u^{10}+u^9-3u^8+3u^7+11u^6-4u^5-14u^4+u^3+6u^2+1)$ $\cdot((u^{31}-2u^{30}+\cdots-26u+5)^2)(u^{41}+6u^{40}+\cdots-1163u-157)$
c_9, c_{11}	$((u-1)^5)(u^{12}-3u^{11}+\cdots-3u+1)(u^{41}-6u^{40}+\cdots+4u+1)$ $\cdot(u^{62}+5u^{61}+\cdots+30u+1)$
c_{10}	$u^5(u^{12}+9u^{11}+\cdots+87u+13)(u^{31}+15u^{30}+\cdots+6u+4)^2$ $\cdot(u^{41}-22u^{40}+\cdots+25u^2-1)$

VII. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1, c_5	$y(y^2+y+1)^2(y^{12}+7y^{11}+\cdots+4y+1)$ $\cdot((y^{31}+16y^{30}+\cdots-2y-1)^2)(y^{41}+22y^{40}+\cdots+11y-1)$
c_2	$y(y^2+y+1)^2(y^{12}-y^{11}+\cdots-8y+1)$ $\cdot((y^{31}+32y^{29}+\cdots+14y-1)^2)(y^{41}-2y^{40}+\cdots+119y-1)$
c_3, c_8	$(y-1)(y^4-3y^3+\cdots-3y+1)(y^{12}+3y^{11}+\cdots+3y+1)$ $\cdot(y^{41}-10y^{40}+\cdots+16y-1)(y^{62}-8y^{61}+\cdots-1236207y+29929)$
c_4, c_7	$(y-1)(y^4-3y^3+\cdots-3y+1)(y^{12}+3y^{11}+\cdots+3y+1)$ $\cdot(y^{41}-22y^{40}+\cdots+48y-1)(y^{62}+12y^{61}+\cdots-47y+1)$
c_6	$y(y^2+y+1)^2(y^{12}-3y^{11}+\cdots+12y+1)$ $\cdot(y^{31}-16y^{30}+\cdots-534y-25)^2$ $\cdot(y^{41}-20y^{40}+\cdots+345571y-24649)$
c_9, c_{11}	$((y-1)^5)(y^{12}+11y^{11}+\cdots+3y+1)(y^{41}-14y^{40}+\cdots+12y-1)$ $\cdot(y^{62}+23y^{61}+\cdots-104y+1)$
c_{10}	$y^5(y^{12}+5y^{11}+\cdots-263y+169)(y^{31}-5y^{30}+\cdots+236y-16)^2$ $\cdot(y^{41}+10y^{39}+\cdots+50y-1)$