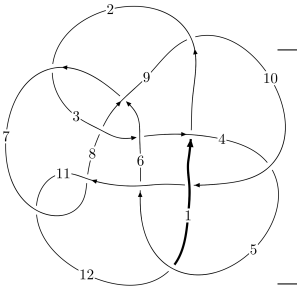
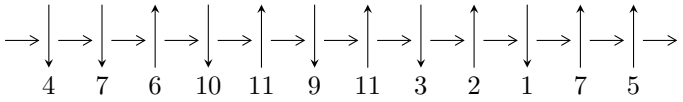
$12n_{0842}$ $(K12n_{0842})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -1.56702 \times 10^{964} u^{129} - 2.52936 \times 10^{964} u^{128} + \cdots + 1.37131 \times 10^{968} b - 1.84550 \times 10^{968},$$
$$- 1.75107 \times 10^{969} u^{129} - 3.48341 \times 10^{969} u^{128} + \cdots + 1.77489 \times 10^{972} a - 2.48142 \times 10^{973},$$
$$u^{130} + 2u^{129} + \cdots + 23095u + 1849 \rangle$$
$$I_2^u = \langle -2.40523 \times 10^{66} u^{39} - 2.81645 \times 10^{66} u^{38} + \cdots + 8.08698 \times 10^{65} b + 1.18620 \times 10^{65},$$
$$- 1.39184 \times 10^{67} u^{39} + 1.04230 \times 10^{65} u^{38} + \cdots + 5.66089 \times 10^{66} a - 7.79024 \times 10^{67},\ u^{40} + u^{39} + \cdots + 2u -$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 170 representations.

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

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

I. $\boldsymbol{I_1^u = \langle -1.57 \times 10^{964} u^{129} - 2.53 \times 10^{964} u^{128} + \cdots + 1.37 \times 10^{968} b - 1.85 \times 10^{968},\ -1.75 \times 10^{969} u^{129} - 3.48 \times 10^{969} u^{128} + \cdots + 1.77 \times 10^{972} a - 2.48 \times 10^{973},\ u^{130} + 2u^{129} + \cdots + 23095u + 1849 \rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix} 0 \\ u \end{pmatrix}$$

$$a_3 = \begin{pmatrix} 0.000986581u^{129} + 0.00196261u^{128} + \cdots - 75.4998u + 13.9808 \\ 0.000114272u^{129} + 0.000184449u^{128} + \cdots + 12.5203u + 1.34580 \end{pmatrix}$$

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

$$a_9 = \begin{pmatrix} 0.00244202u^{129} + 0.00442555u^{128} + \cdots + 289.065u + 25.9338 \\ 0.0000496807u^{129} + 0.000118695u^{128} + \cdots - 8.68282u - 1.28144 \end{pmatrix}$$

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

$$a_2 = \begin{pmatrix} 0.00110085u^{129} + 0.00214706u^{128} + \cdots - 62.9795u + 15.3265 \\ 0.000114272u^{129} + 0.000184449u^{128} + \cdots + 12.5203u + 1.34580 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.00244447u^{129} - 0.00474242u^{128} + \cdots - 104.893u - 1.82635 \\ 0.000201784u^{129} + 0.000412550u^{128} + \cdots - 8.41360u + 0.410828 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 0.00215601u^{129} + 0.00414580u^{128} + \cdots + 132.106u + 13.8909 \\ -0.000105157u^{129} - 0.000218653u^{128} + \cdots + 6.69702u - 0.156529 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} -0.000284206u^{129} - 0.000694296u^{128} + \cdots - 49.4204u + 7.08012 \\ 0.0000830600u^{129} + 0.000168496u^{128} + \cdots - 5.78510u + 0.0521690 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} -0.000984849u^{129} - 0.00185266u^{128} + \cdots + 36.5137u + 10.3433 \\ 0.000124562u^{129} + 0.000262122u^{128} + \cdots - 2.40189u + 0.361956 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} 0.00215601u^{129} + 0.00414580u^{128} + \cdots + 132.106u + 13.8909 \\ -0.0000495668u^{129} - 0.000106951u^{128} + \cdots + 6.54918u + 0.150793 \end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= 0.0000782799u^{129} + 0.000547387u^{128} + \cdots - 133.386u - 2.54081$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{130} + 14u^{129} + \cdots - 159u + 7$
c_2	$u^{130} - u^{128} + \cdots - 576070405u + 33881141$
c_3	$u^{130} - 7u^{129} + \cdots + 2725074u + 389673$
c_4	$7(7u^{130} - 25u^{129} + \cdots + 12u + 1)$
c_5	$7(7u^{130} + 3u^{129} + \cdots + 4.93951 \times 10^{10}u + 2.28860 \times 10^{9})$
c_6	$u^{130} - 8u^{129} + \cdots - 205u + 7$
c_7, c_{11}	$u^{130} + 2u^{129} + \cdots + 23095u + 1849$
c_8	$7(7u^{130} - 13u^{129} + \cdots - 2351020u + 743993)$
c_9	$7(7u^{130} - 34u^{129} + \cdots - 829543u - 30137)$
c_{10}	$u^{130} - 9u^{129} + \cdots - 4538u + 203$
c_{12}	$u^{130} + 11u^{129} + \cdots - 3169857u - 257957$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{130} - 72y^{129} + \cdots + 493y + 49$
c_2	$y^{130} - 2y^{129} + \cdots + 55704648955559029y + 1147931715461881$
c_3	$y^{130} - 39y^{129} + \cdots - 9840220879212y + 151845046929$
c_4	$49(49y^{130} + 145y^{129} + \cdots - 314y + 1)$
c_5	$49(49y^{130} - 2207y^{129} + \cdots - 2.91410 \times 10^{20}y + 5.23771 \times 10^{18})$
c_6	$y^{130} - 28y^{129} + \cdots - 5709y + 49$
c_7, c_{11}	$y^{130} - 96y^{129} + \cdots + 11750551y + 3418801$
c_8	$49(49y^{130} + 503y^{129} + \cdots + 5.44033 \times 10^{13}y + 5.53526 \times 10^{11})$
c_9	$49(49y^{130} + 846y^{129} + \cdots - 1.31838 \times 10^{11}y + 9.08239 \times 10^{8})$
c_{10}	$y^{130} + 17y^{129} + \cdots - 739638y + 41209$
c_{12}	$y^{130} - 87y^{129} + \cdots - 1836787174947y + 66541813849$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.192985+0.987978I$ $a=\ \ 0.685018+0.699135I$ $b=\ \ 0.105204+0.268994I$	$-3.85583+1.98974I$	0
$u=-0.192985-0.987978I$ $a=\ \ 0.685018-0.699135I$ $b=\ \ 0.105204-0.268994I$	$-3.85583-1.98974I$	0
$u=-1.005400+0.084588I$ $a=-0.424630-0.999332I$ $b=\ \ 1.48759+0.21000I$	$3.44265+3.95990I$	0
$u=-1.005400-0.084588I$ $a=-0.424630+0.999332I$ $b=\ \ 1.48759-0.21000I$	$3.44265-3.95990I$	0
$u=\ \ 0.982913+0.237730I$ $a=\ \ 0.93751+1.73569I$ $b=\ \ 0.219139-0.183732I$	$1.02277+1.74041I$	0
$u=\ \ 0.982913-0.237730I$ $a=\ \ 0.93751-1.73569I$ $b=\ \ 0.219139+0.183732I$	$1.02277-1.74041I$	0
$u=\ \ 1.014750+0.047548I$ $a=-1.32944+0.61104I$ $b=-0.746568-0.155076I$	$1.73990-1.31024I$	0
$u=\ \ 1.014750-0.047548I$ $a=-1.32944-0.61104I$ $b=-0.746568+0.155076I$	$1.73990+1.31024I$	0
$u=-0.456859+0.862239I$ $a=-1.287040-0.504597I$ $b=-0.161070-1.105620I$	$-2.38775-6.44558I$	0
$u=-0.456859-0.862239I$ $a=-1.287040+0.504597I$ $b=-0.161070+1.105620I$	$-2.38775+6.44558I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.054500+0.153337I$ $a=\ \ 0.82634+1.70303I$ $b=-1.051070-0.662151I$	$-0.55217-6.03667I$	0
$u=-1.054500-0.153337I$ $a=\ \ 0.82634-1.70303I$ $b=-1.051070+0.662151I$	$-0.55217+6.03667I$	0
$u=-1.068270+0.127319I$ $a=-1.02778+1.14025I$ $b=\ \ 1.26558-0.67228I$	$5.94390-0.70377I$	0
$u=-1.068270-0.127319I$ $a=-1.02778-1.14025I$ $b=\ \ 1.26558+0.67228I$	$5.94390+0.70377I$	0
$u=\ \ 0.014444+1.078290I$ $a=\ \ 0.087527+0.601798I$ $b=-0.337332+0.607074I$	$-3.00735+1.68026I$	0
$u=\ \ 0.014444-1.078290I$ $a=\ \ 0.087527-0.601798I$ $b=-0.337332-0.607074I$	$-3.00735-1.68026I$	0
$u=-0.709835+0.837220I$ $a=\ \ 0.298449+0.444055I$ $b=-1.53836+1.08055I$	$-1.60973+3.04444I$	0
$u=-0.709835-0.837220I$ $a=\ \ 0.298449-0.444055I$ $b=-1.53836-1.08055I$	$-1.60973-3.04444I$	0
$u=\ \ 0.827680+0.118176I$ $a=\ \ 1.062830+0.393846I$ $b=\ \ 0.578328-0.404761I$	$1.72153+1.62554I$	0
$u=\ \ 0.827680-0.118176I$ $a=\ \ 1.062830-0.393846I$ $b=\ \ 0.578328+0.404761I$	$1.72153-1.62554I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.743058 + 0.335777I$ $a = 0.985320 + 0.201047I$ $b = 0.826366 + 0.263227I$	$1.91444 - 1.66346I$	0
$u = 0.743058 - 0.335777I$ $a = 0.985320 - 0.201047I$ $b = 0.826366 - 0.263227I$	$1.91444 + 1.66346I$	0
$u = -1.215770 + 0.024957I$ $a = 0.25672 - 1.77363I$ $b = -0.22505 + 2.26759I$	$0.14747 + 3.30778I$	0
$u = -1.215770 - 0.024957I$ $a = 0.25672 + 1.77363I$ $b = -0.22505 - 2.26759I$	$0.14747 - 3.30778I$	0
$u = -1.167050 + 0.344814I$ $a = 0.13166 + 1.69916I$ $b = -0.91643 - 1.29410I$	$0.35070 - 5.13307I$	0
$u = -1.167050 - 0.344814I$ $a = 0.13166 - 1.69916I$ $b = -0.91643 + 1.29410I$	$0.35070 + 5.13307I$	0
$u = 1.224050 + 0.090932I$ $a = 0.605553 - 1.229960I$ $b = -0.716654 + 0.669539I$	$-1.48112 + 0.30722I$	0
$u = 1.224050 - 0.090932I$ $a = 0.605553 + 1.229960I$ $b = -0.716654 - 0.669539I$	$-1.48112 - 0.30722I$	0
$u = 1.157080 + 0.430857I$ $a = -0.859745 - 0.586018I$ $b = -0.091286 + 0.906175I$	$1.69689 + 1.05048I$	0
$u = 1.157080 - 0.430857I$ $a = -0.859745 + 0.586018I$ $b = -0.091286 - 0.906175I$	$1.69689 - 1.05048I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.380261+1.187040I$ $a=\ \ 0.151652+0.050180I$ $b=-0.080254-0.787124I$	$2.16508+4.58319I$	0
$u=-0.380261-1.187040I$ $a=\ \ 0.151652-0.050180I$ $b=-0.080254+0.787124I$	$2.16508-4.58319I$	0
$u=\ \ 0.125690+1.245530I$ $a=\ \ 0.075130+0.127210I$ $b=\ \ 0.559438-0.639859I$	$-0.14578+4.97050I$	0
$u=\ \ 0.125690-1.245530I$ $a=\ \ 0.075130-0.127210I$ $b=\ \ 0.559438+0.639859I$	$-0.14578-4.97050I$	0
$u=\ \ 0.116619+0.707618I$ $a=\ \ 0.469121+0.190155I$ $b=\ \ 0.783447-0.632126I$	$2.34750+2.69810I$	0
$u=\ \ 0.116619-0.707618I$ $a=\ \ 0.469121-0.190155I$ $b=\ \ 0.783447+0.632126I$	$2.34750-2.69810I$	0
$u=\ \ 1.241780+0.360670I$ $a=-0.779193-0.660654I$ $b=\ \ 1.015850+0.879906I$	$5.19171+2.01313I$	0
$u=\ \ 1.241780-0.360670I$ $a=-0.779193+0.660654I$ $b=\ \ 1.015850-0.879906I$	$5.19171-2.01313I$	0
$u=-0.395761+1.238470I$ $a=-1.67747+0.73618I$ $b=-1.80089-0.24631I$	$-4.94996-4.30206I$	0
$u=-0.395761-1.238470I$ $a=-1.67747-0.73618I$ $b=-1.80089+0.24631I$	$-4.94996+4.30206I$	0

	Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=$	$0.343954+0.587904I$		
$a=$	$0.350168+0.631190I$	$-0.00798+1.65365I$	0
$b=$	$0.024698+0.500867I$		
$u=$	$0.343954-0.587904I$		
$a=$	$0.350168-0.631190I$	$-0.00798-1.65365I$	0
$b=$	$0.024698-0.500867I$		
$u=$	$0.227794+1.302420I$		
$a=$	$1.71330+0.30061I$	$-4.09401+5.43279I$	0
$b=$	$1.306730-0.536616I$		
$u=$	$0.227794-1.302420I$		
$a=$	$1.71330-0.30061I$	$-4.09401-5.43279I$	0
$b=$	$1.306730+0.536616I$		
$u=$	$1.274050+0.385225I$		
$a=$	$0.763387+0.450871I$	$1.88232+2.39507I$	0
$b=$	$0.933879-0.338802I$		
$u=$	$1.274050-0.385225I$		
$a=$	$0.763387-0.450871I$	$1.88232-2.39507I$	0
$b=$	$0.933879+0.338802I$		
$u=$	$-1.328210+0.172913I$		
$a=$	$-0.606992+1.142170I$	$5.21037+2.98126I$	0
$b=$	$0.069657-0.613093I$		
$u=$	$-1.328210-0.172913I$		
$a=$	$-0.606992-1.142170I$	$5.21037-2.98126I$	0
$b=$	$0.069657+0.613093I$		
$u=$	$-1.329800+0.240985I$		
$a=$	$0.112373-1.343230I$	$0.56148-6.02464I$	0
$b=$	$0.279489+0.426407I$		
$u=$	$-1.329800-0.240985I$		
$a=$	$0.112373+1.343230I$	$0.56148+6.02464I$	0
$b=$	$0.279489-0.426407I$		

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.194490+0.634915I$ $a=\ \ 0.38794-1.63509I$ $b=\ \ 1.20321+1.03064I$	$5.30423-7.34352I$	0
$u=-1.194490-0.634915I$ $a=\ \ 0.38794+1.63509I$ $b=\ \ 1.20321-1.03064I$	$5.30423+7.34352I$	0
$u=\ \ 0.402837+0.497183I$ $a=\ \ 0.320224+0.850805I$ $b=\ \ 1.244390-0.364572I$	$-1.38050+5.00016I$	$0.-9.49193I$
$u=\ \ 0.402837-0.497183I$ $a=\ \ 0.320224-0.850805I$ $b=\ \ 1.244390+0.364572I$	$-1.38050-5.00016I$	$0.+9.49193I$
$u=\ \ 1.372130+0.150804I$ $a=\ \ 0.60945-1.47521I$ $b=-1.89823+1.75461I$	$4.20289+8.62109I$	0
$u=\ \ 1.372130-0.150804I$ $a=\ \ 0.60945+1.47521I$ $b=-1.89823-1.75461I$	$4.20289-8.62109I$	0
$u=-1.400810+0.159049I$ $a=-0.409440-1.210060I$ $b=\ \ 0.606970+1.237310I$	$-0.26679-9.38703I$	0
$u=-1.400810-0.159049I$ $a=-0.409440+1.210060I$ $b=\ \ 0.606970-1.237310I$	$-0.26679+9.38703I$	0
$u=-1.42668$ $a=\ \ 0.718436$ $b=-2.57271$	-0.613003	0
$u=-1.30320+0.59303I$ $a=-0.511695+0.877445I$ $b=-0.100888-0.985304I$	$4.96024-4.96838I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.30320-0.59303I$ $a=-0.511695-0.877445I$ $b=-0.100888+0.985304I$	$4.96024+4.96838I$	0
$u=-0.567677$ $a=\ \ 0.490107$ $b=-1.14200$	-1.77907	-5.18620
$u=\ \ 0.52532+1.34589I$ $a=\ \ 0.473497+0.007024I$ $b=\ \ 0.444301+0.616379I$	$0.39548+4.33374I$	0
$u=\ \ 0.52532-1.34589I$ $a=\ \ 0.473497-0.007024I$ $b=\ \ 0.444301-0.616379I$	$0.39548-4.33374I$	0
$u=-1.41981+0.26766I$ $a=\ \ 0.649756-0.389768I$ $b=\ \ 1.121740+0.311792I$	$2.20480-10.11460I$	0
$u=-1.41981-0.26766I$ $a=\ \ 0.649756+0.389768I$ $b=\ \ 1.121740-0.311792I$	$2.20480+10.11460I$	0
$u=-1.43085+0.21833I$ $a=-0.30087+1.40417I$ $b=\ \ 0.08741-2.07515I$	$5.80080-4.43061I$	0
$u=-1.43085-0.21833I$ $a=-0.30087-1.40417I$ $b=\ \ 0.08741+2.07515I$	$5.80080+4.43061I$	0
$u=\ \ 1.37685+0.48002I$ $a=-0.221068-0.863688I$ $b=-0.218612+0.767436I$	$4.52979+1.33796I$	0
$u=\ \ 1.37685-0.48002I$ $a=-0.221068+0.863688I$ $b=-0.218612-0.767436I$	$4.52979-1.33796I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.349486+0.409207I$ $a=\ \ 1.331860+0.024556I$ $b=-0.946034+0.653814I$	$-1.91537+1.81462I$	$-5.84498-1.75098I$
$u=-0.349486-0.409207I$ $a=\ \ 1.331860-0.024556I$ $b=-0.946034-0.653814I$	$-1.91537-1.81462I$	$-5.84498+1.75098I$
$u=-1.40938+0.50729I$ $a=-0.487450+0.765803I$ $b=\ \ 0.049376-0.835322I$	$7.06208-1.74086I$	0
$u=-1.40938-0.50729I$ $a=-0.487450-0.765803I$ $b=\ \ 0.049376+0.835322I$	$7.06208+1.74086I$	0
$u=-1.42183+0.48861I$ $a=\ \ 0.026092-1.397180I$ $b=\ \ 0.95940+1.11035I$	$4.87320-10.83730I$	0
$u=-1.42183-0.48861I$ $a=\ \ 0.026092+1.397180I$ $b=\ \ 0.95940-1.11035I$	$4.87320+10.83730I$	0
$u=\ \ 1.49455+0.17001I$ $a=\ \ 0.941153+0.356400I$ $b=-2.80546-1.08221I$	$2.65451+8.61052I$	0
$u=\ \ 1.49455-0.17001I$ $a=\ \ 0.941153-0.356400I$ $b=-2.80546+1.08221I$	$2.65451-8.61052I$	0
$u=-0.28877+1.47869I$ $a=\ \ 0.120770+0.123015I$ $b=-0.63944+1.43069I$	$-1.14226+3.62625I$	0
$u=-0.28877-1.47869I$ $a=\ \ 0.120770-0.123015I$ $b=-0.63944-1.43069I$	$-1.14226-3.62625I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.38195 + 0.60353I$ $a = -0.367064 - 0.593723I$ $b = 0.016286 + 0.724244I$	$5.55086 + 2.73527I$	0
$u = 1.38195 - 0.60353I$ $a = -0.367064 + 0.593723I$ $b = 0.016286 - 0.724244I$	$5.55086 - 2.73527I$	0
$u = 1.53490$ $a = -0.158963$ $b = 1.84837$	1.52550	0
$u = 1.55054 + 0.06643I$ $a = -0.259009 + 1.059910I$ $b = 0.73666 - 1.69771I$	$3.98425 + 2.69852I$	0
$u = 1.55054 - 0.06643I$ $a = -0.259009 - 1.059910I$ $b = 0.73666 + 1.69771I$	$3.98425 - 2.69852I$	0
$u = 0.328062 + 0.289528I$ $a = 1.93053 + 0.24387I$ $b = 0.236215 + 0.458228I$	$0.65266 + 1.63325I$	$2.68692 - 2.53683I$
$u = 0.328062 - 0.289528I$ $a = 1.93053 - 0.24387I$ $b = 0.236215 - 0.458228I$	$0.65266 - 1.63325I$	$2.68692 + 2.53683I$
$u = 1.56708$ $a = -0.189228$ $b = 1.93649$	1.52572	0
$u = -1.54300 + 0.34814I$ $a = 0.068942 + 1.277000I$ $b = -0.302820 - 1.262260I$	$7.44054 - 9.96841I$	0
$u = -1.54300 - 0.34814I$ $a = 0.068942 - 1.277000I$ $b = -0.302820 + 1.262260I$	$7.44054 + 9.96841I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.364665 + 0.181754I$ $a = 0.447705 + 0.540748I$ $b = -1.202540 + 0.294643I$	$-4.95344 + 0.19459I$	$6.08544 - 3.99455I$
$u = 0.364665 - 0.181754I$ $a = 0.447705 - 0.540748I$ $b = -1.202540 - 0.294643I$	$-4.95344 - 0.19459I$	$6.08544 + 3.99455I$
$u = -0.357344 + 0.145937I$ $a = 0.356206 + 0.571643I$ $b = 1.182780 - 0.524412I$	$-4.38967 + 8.38798I$	$5.79740 + 1.22412I$
$u = -0.357344 - 0.145937I$ $a = 0.356206 - 0.571643I$ $b = 1.182780 + 0.524412I$	$-4.38967 - 8.38798I$	$5.79740 - 1.22412I$
$u = 0.08064 + 1.61582I$ $a = -0.0950039 - 0.0340072I$ $b = -0.274149 - 0.272116I$	$-7.81593 + 4.25557I$	0
$u = 0.08064 - 1.61582I$ $a = -0.0950039 + 0.0340072I$ $b = -0.274149 + 0.272116I$	$-7.81593 - 4.25557I$	0
$u = 0.26673 + 1.59979I$ $a = -0.0224344 - 0.0574521I$ $b = -0.72872 - 1.36664I$	$0.00932 - 12.04250I$	0
$u = 0.26673 - 1.59979I$ $a = -0.0224344 + 0.0574521I$ $b = -0.72872 + 1.36664I$	$0.00932 + 12.04250I$	0
$u = -1.42052 + 0.83025I$ $a = 0.346397 - 0.701857I$ $b = 0.617617 + 0.761177I$	$5.08035 - 12.10800I$	0
$u = -1.42052 - 0.83025I$ $a = 0.346397 + 0.701857I$ $b = 0.617617 - 0.761177I$	$5.08035 + 12.10800I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.60096 + 0.41206I$ $a = -0.035198 - 1.209550I$ $b = -0.55990 + 1.37417I$	$8.41929 + 1.32210I$	0
$u = 1.60096 - 0.41206I$ $a = -0.035198 + 1.209550I$ $b = -0.55990 - 1.37417I$	$8.41929 - 1.32210I$	0
$u = 1.46173 + 0.78033I$ $a = 0.365604 + 0.701236I$ $b = 0.748972 - 0.841081I$	$3.83692 + 3.90710I$	0
$u = 1.46173 - 0.78033I$ $a = 0.365604 - 0.701236I$ $b = 0.748972 + 0.841081I$	$3.83692 - 3.90710I$	0
$u = -1.67712$ $a = -0.248186$ $b = -1.61998$	-0.349305	0
$u = -0.214366 + 0.220787I$ $a = 3.26112 - 2.94875I$ $b = 1.163770 + 0.077840I$	$-4.09858 + 3.90895I$	$-5.63870 - 4.54668I$
$u = -0.214366 - 0.220787I$ $a = 3.26112 + 2.94875I$ $b = 1.163770 - 0.077840I$	$-4.09858 - 3.90895I$	$-5.63870 + 4.54668I$
$u = 0.11947 + 1.69081I$ $a = 0.0937528 + 0.0110013I$ $b = 0.462723 + 1.325290I$	$-0.64061 - 1.41285I$	0
$u = 0.11947 - 1.69081I$ $a = 0.0937528 - 0.0110013I$ $b = 0.462723 - 1.325290I$	$-0.64061 + 1.41285I$	0
$u = 1.52387 + 0.75590I$ $a = -0.280745 - 1.234770I$ $b = -1.26006 + 1.41583I$	$4.1549 + 20.2245I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.52387 - 0.75590I$ $a = -0.280745 + 1.234770I$ $b = -1.26006 - 1.41583I$	$4.1549 - 20.2245I$	0
$u = -1.53333 + 0.74990I$ $a = -0.283174 + 1.225620I$ $b = -1.22937 - 1.56540I$	$2.91524 - 11.64700I$	0
$u = -1.53333 - 0.74990I$ $a = -0.283174 - 1.225620I$ $b = -1.22937 + 1.56540I$	$2.91524 + 11.64700I$	0
$u = -0.260160 + 0.125254I$ $a = 2.24562 - 1.13763I$ $b = 0.086350 + 0.861525I$	$-1.04836 + 3.32741I$	$1.24329 - 3.26995I$
$u = -0.260160 - 0.125254I$ $a = 2.24562 + 1.13763I$ $b = 0.086350 - 0.861525I$	$-1.04836 - 3.32741I$	$1.24329 + 3.26995I$
$u = 1.51956 + 0.84351I$ $a = 0.367911 + 1.152150I$ $b = 1.23263 - 1.26490I$	$3.30447 + 10.82410I$	0
$u = 1.51956 - 0.84351I$ $a = 0.367911 - 1.152150I$ $b = 1.23263 + 1.26490I$	$3.30447 - 10.82410I$	0
$u = 1.68007 + 0.45365I$ $a = 0.007095 + 1.105530I$ $b = 0.95314 - 1.35298I$	$5.51727 + 9.38680I$	0
$u = 1.68007 - 0.45365I$ $a = 0.007095 - 1.105530I$ $b = 0.95314 + 1.35298I$	$5.51727 - 9.38680I$	0
$u = 0.246123 + 0.005560I$ $a = 6.60826 + 2.07111I$ $b = -1.081240 - 0.595420I$	$-0.24013 - 7.66843I$	$-2.90470 + 9.94586I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.246123 - 0.005560I$ $a = 6.60826 - 2.07111I$ $b = -1.081240 + 0.595420I$	$-0.24013 + 7.66843I$	$-2.90470 - 9.94586I$
$u = 1.73414 + 0.44560I$ $a = 0.170113 + 0.795594I$ $b = 0.57746 - 1.64576I$	$5.26878 + 3.50302I$	0
$u = 1.73414 - 0.44560I$ $a = 0.170113 - 0.795594I$ $b = 0.57746 + 1.64576I$	$5.26878 - 3.50302I$	0
$u = -1.77431 + 0.26416I$ $a = 0.201090 - 0.875909I$ $b = 0.10396 + 1.61456I$	$7.52045 + 4.51180I$	0
$u = -1.77431 - 0.26416I$ $a = 0.201090 + 0.875909I$ $b = 0.10396 - 1.61456I$	$7.52045 - 4.51180I$	0
$u = -0.146951 + 0.063339I$ $a = 16.0501 + 6.7068I$ $b = -0.302716 + 0.864166I$	$-5.28228 - 0.20426I$	$7.06027 - 2.29073I$
$u = -0.146951 - 0.063339I$ $a = 16.0501 - 6.7068I$ $b = -0.302716 - 0.864166I$	$-5.28228 + 0.20426I$	$7.06027 + 2.29073I$
$u = -0.0026800 + 0.1179300I$ $a = 5.5607 - 28.2192I$ $b = -0.080542 - 1.019560I$	$-3.42340 + 8.12985I$	$10.41804 + 6.43309I$
$u = -0.0026800 - 0.1179300I$ $a = 5.5607 + 28.2192I$ $b = -0.080542 + 1.019560I$	$-3.42340 - 8.12985I$	$10.41804 - 6.43309I$
$u = -2.52670$ $a = -0.0942858$ $b = -2.44028$	-0.402431	0

II.

$\boldsymbol{I_2^u = \langle -2.41\times 10^{66}u^{39}-2.82\times 10^{66}u^{38}+\cdots+8.09\times 10^{65}b+1.19\times 10^{65},\ -1.39\times 10^{67}u^{39}+1.04\times 10^{65}u^{38}+\cdots+5.66\times 10^{66}a-7.79\times 10^{67},\ u^{40}+u^{39}+\cdots+2u-1\rangle}$

(i) Arc colorings

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

$$a_{11} = \begin{pmatrix}0\\u\end{pmatrix}$$

$$a_3 = \begin{pmatrix}2.45870u^{39} - 0.0184122u^{38} + \cdots - 27.5018u + 13.7615\\ 2.97420u^{39} + 3.48270u^{38} + \cdots - 19.2058u - 0.146681\end{pmatrix}$$

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

$$a_9 = \begin{pmatrix}-2.55002u^{39} - 2.83592u^{38} + \cdots + 24.0835u - 4.68811\\ -0.546160u^{39} - 0.543172u^{38} + \cdots - 3.35179u + 0.405291\end{pmatrix}$$

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

$$a_2 = \begin{pmatrix}5.43290u^{39} + 3.46429u^{38} + \cdots - 46.7077u + 13.6148\\ 2.97420u^{39} + 3.48270u^{38} + \cdots - 19.2058u - 0.146681\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-4.63338u^{39} - 2.81760u^{38} + \cdots + 32.0659u - 11.2525\\ -2.42174u^{39} - 2.58541u^{38} + \cdots + 1.67460u - 2.14800\end{pmatrix}$$

$$a_6 = \begin{pmatrix}4.57440u^{39} + 5.38104u^{38} + \cdots - 30.5626u + 3.29370\\ 1.82173u^{39} + 2.41175u^{38} + \cdots + 4.49594u + 0.168550\end{pmatrix}$$

$$a_4 = \begin{pmatrix}-1.60848u^{39} - 4.20407u^{38} + \cdots + 16.8447u + 10.6805\\ -5.52043u^{39} - 6.02323u^{38} + \cdots + 42.1526u - 2.77427\end{pmatrix}$$

$$a_1 = \begin{pmatrix}1.81620u^{39} + 1.00198u^{38} + \cdots - 6.47369u + 3.86005\\ -2.31703u^{39} - 2.12578u^{38} + \cdots + 31.9391u - 2.36050\end{pmatrix}$$

$$a_5 = \begin{pmatrix}4.57440u^{39} + 5.38104u^{38} + \cdots - 30.5626u + 3.29370\\ 1.47615u^{39} + 1.83065u^{38} + \cdots + 7.45707u + 0.975187\end{pmatrix}$$

(ii) Obstruction class $= 1$

(iii) Cusp Shapes $= 11.0866u^{39} + 19.1437u^{38} + \cdots - 56.3405u - 45.1389$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{40} - 23u^{39} + \cdots + 10u + 1$
c_2	$u^{40} - 3u^{39} + \cdots - 42u - 49$
c_3	$u^{40} + 8u^{39} + \cdots + 125u + 25$
c_4	$7(7u^{40} + 12u^{39} + \cdots + 11u - 1)$
c_5	$7(7u^{40} + 12u^{39} + \cdots + 862u + 79)$
c_6	$u^{40} - 13u^{39} + \cdots - 78u + 7$
c_7	$u^{40} + u^{39} + \cdots + 2u - 1$
c_8	$7(7u^{40} + 10u^{39} + \cdots + 9u - 1)$
c_9	$7(7u^{40} - 11u^{39} + \cdots + 26u - 13)$
c_{10}	$u^{40} - 10u^{39} + \cdots + 71u + 7$
c_{11}	$u^{40} - u^{39} + \cdots - 2u - 1$
c_{12}	$u^{40} - 12u^{39} + \cdots + 406u + 49$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{40} - 77y^{39} + \cdots - 40y + 1$
c_2	$y^{40} - 27y^{39} + \cdots + 41552y + 2401$
c_3	$y^{40} - 12y^{39} + \cdots + 13975y + 625$
c_4	$49(49y^{40} + 220y^{39} + \cdots - 471y + 1)$
c_5	$49(49y^{40} + 612y^{39} + \cdots - 443634y + 6241)$
c_6	$y^{40} - 17y^{39} + \cdots - 302y + 49$
c_7, c_{11}	$y^{40} - 17y^{39} + \cdots + 34y + 1$
c_8	$49(49y^{40} - 842y^{39} + \cdots - 43y + 1)$
c_9	$49(49y^{40} + 873y^{39} + \cdots - 6526y + 169)$
c_{10}	$y^{40} + 4y^{39} + \cdots - 4495y + 49$
c_{12}	$y^{40} - 72y^{39} + \cdots - 35280y + 2401$

(vi) Complex Volumes and Cusp Shapes

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.985813 + 0.047998I$ $a = 1.40863 + 1.55003I$ $b = -0.860752 - 0.979037I$	$0.81879 - 7.38277I$	$4.59353 + 7.95478I$
$u = 0.985813 - 0.047998I$ $a = 1.40863 - 1.55003I$ $b = -0.860752 + 0.979037I$	$0.81879 + 7.38277I$	$4.59353 - 7.95478I$
$u = -0.140334 + 1.034600I$ $a = 0.532953 + 0.635960I$ $b = -0.178779 + 0.526366I$	$-2.86290 + 2.38388I$	$0.74022 - 10.13995I$
$u = -0.140334 - 1.034600I$ $a = 0.532953 - 0.635960I$ $b = -0.178779 - 0.526366I$	$-2.86290 - 2.38388I$	$0.74022 + 10.13995I$
$u = 0.270336 + 1.009650I$ $a = 2.31571 + 0.91260I$ $b = 1.52664 - 0.01344I$	$-5.51622 + 4.56551I$	$-15.2487 - 6.9844I$
$u = 0.270336 - 1.009650I$ $a = 2.31571 - 0.91260I$ $b = 1.52664 + 0.01344I$	$-5.51622 - 4.56551I$	$-15.2487 + 6.9844I$
$u = -0.900200 + 0.288577I$ $a = 1.250680 - 0.514850I$ $b = 0.357254 + 0.685349I$	$1.05389 - 1.31798I$	$-4.29350 + 4.90343I$
$u = -0.900200 - 0.288577I$ $a = 1.250680 + 0.514850I$ $b = 0.357254 - 0.685349I$	$1.05389 + 1.31798I$	$-4.29350 - 4.90343I$
$u = -1.103470 + 0.194766I$ $a = -0.93591 + 1.46791I$ $b = -0.536646 - 0.578625I$	$1.21435 - 2.20942I$	$0. + 8.18325I$
$u = -1.103470 - 0.194766I$ $a = -0.93591 - 1.46791I$ $b = -0.536646 + 0.578625I$	$1.21435 + 2.20942I$	$0. - 8.18325I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 1.130230 + 0.172412I$ $a = -0.903497 - 0.922720I$ $b = 1.232620 + 0.608134I$	$5.39290 + 0.98456I$	$1.091376 + 0.161509I$
$u = 1.130230 - 0.172412I$ $a = -0.903497 + 0.922720I$ $b = 1.232620 - 0.608134I$	$5.39290 - 0.98456I$	$1.091376 - 0.161509I$
$u = 0.521674 + 1.065710I$ $a = -0.168052 + 0.390847I$ $b = 1.26221 + 1.24322I$	$-1.60771 - 3.26575I$	$-10.4994 + 20.1595I$
$u = 0.521674 - 1.065710I$ $a = -0.168052 - 0.390847I$ $b = 1.26221 - 1.24322I$	$-1.60771 + 3.26575I$	$-10.4994 - 20.1595I$
$u = -0.434507 + 1.121790I$ $a = -0.430137 - 0.138212I$ $b = -0.059769 + 0.349551I$	$0.28364 - 3.88388I$	$1.36521 + 1.74386I$
$u = -0.434507 - 1.121790I$ $a = -0.430137 + 0.138212I$ $b = -0.059769 - 0.349551I$	$0.28364 + 3.88388I$	$1.36521 - 1.74386I$
$u = -0.337327 + 1.233090I$ $a = -1.69780 + 0.49564I$ $b = -1.33154 - 0.74125I$	$-4.16063 - 5.13415I$	$-6.36747 - 3.09799I$
$u = -0.337327 - 1.233090I$ $a = -1.69780 - 0.49564I$ $b = -1.33154 + 0.74125I$	$-4.16063 + 5.13415I$	$-6.36747 + 3.09799I$
$u = -0.316516 + 0.520550I$ $a = -0.46712 + 1.67089I$ $b = -1.331820 - 0.186224I$	$-2.32747 - 5.29189I$	$-6.87764 + 8.97663I$
$u = -0.316516 - 0.520550I$ $a = -0.46712 - 1.67089I$ $b = -1.331820 + 0.186224I$	$-2.32747 + 5.29189I$	$-6.87764 - 8.97663I$

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-1.30916+0.55445I$ $a=-0.475487+0.613831I$ $b=\ \ 0.215809-0.732916I$	$5.30013-2.75882I$	0
$u=-1.30916-0.55445I$ $a=-0.475487-0.613831I$ $b=\ \ 0.215809+0.732916I$	$5.30013+2.75882I$	0
$u=\ \ 1.41380+0.18507I$ $a=\ \ 0.590885-0.315476I$ $b=-2.22284+0.16384I$	$3.25291+8.75744I$	0
$u=\ \ 1.41380-0.18507I$ $a=\ \ 0.590885+0.315476I$ $b=-2.22284-0.16384I$	$3.25291-8.75744I$	0
$u=-0.075594+0.510852I$ $a=\ \ 0.88648+5.00898I$ $b=-0.369451+0.799053I$	$-5.58689-0.25968I$	$-19.1860+2.0754I$
$u=-0.075594-0.510852I$ $a=\ \ 0.88648-5.00898I$ $b=-0.369451-0.799053I$	$-5.58689+0.25968I$	$-19.1860-2.0754I$
$u=\ \ 0.179526+0.420507I$ $a=\ \ 4.83757-5.63997I$ $b=-0.024623-1.025940I$	$-3.56553+8.28671I$	$-15.3469-21.7718I$
$u=\ \ 0.179526-0.420507I$ $a=\ \ 4.83757+5.63997I$ $b=-0.024623+1.025940I$	$-3.56553-8.28671I$	$-15.3469+21.7718I$
$u=-0.06148+1.56478I$ $a=\ \ 0.0566131-0.1045900I$ $b=\ \ 0.338591-0.195472I$	$-7.89437-4.28045I$	0
$u=-0.06148-1.56478I$ $a=\ \ 0.0566131+0.1045900I$ $b=\ \ 0.338591+0.195472I$	$-7.89437+4.28045I$	0

Solutions to I_2^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = \quad 0.006801 + 0.413917I$ $a = -0.041680 - 0.840946I$ $b = -1.137090 + 0.353354I$	$-5.30901 + 0.03558I$	$-13.08662 + 3.87514I$
$u = \quad 0.006801 - 0.413917I$ $a = -0.041680 + 0.840946I$ $b = -1.137090 - 0.353354I$	$-5.30901 - 0.03558I$	$-13.08662 - 3.87514I$
$u = \quad 0.160986 + 0.334496I$ $a = -0.216404 - 0.977522I$ $b = \quad 1.076980 - 0.498814I$	$-4.64626 + 8.64955I$	$-10.0735 - 14.3657I$
$u = \quad 0.160986 - 0.334496I$ $a = -0.216404 + 0.977522I$ $b = \quad 1.076980 + 0.498814I$	$-4.64626 - 8.64955I$	$-10.0735 + 14.3657I$
$u = \quad 1.52801 + 0.57282I$ $a = \quad 0.126503 + 1.248900I$ $b = \quad 0.97762 - 1.25745I$	$4.17482 + 9.89074I$	0
$u = \quad 1.52801 - 0.57282I$ $a = \quad 0.126503 - 1.248900I$ $b = \quad 0.97762 + 1.25745I$	$4.17482 - 9.89074I$	0
$u = -1.62923 + 0.38674I$ $a = -0.210724 + 0.890348I$ $b = -0.40963 - 1.68332I$	$5.07142 - 3.41108I$	0
$u = -1.62923 - 0.38674I$ $a = -0.210724 - 0.890348I$ $b = -0.40963 + 1.68332I$	$5.07142 + 3.41108I$	0
$u = \quad 1.83581$ $a = -0.259494$ $b = \quad 2.47431$	1.32808	0
$u = -2.61455$ $a = -0.0874792$ $b = -2.52384$	-0.398487	0

III. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$(u^{40}-23u^{39}+\cdots+10u+1)(u^{130}+14u^{129}+\cdots-159u+7)$
c_2	$(u^{40}-3u^{39}+\cdots-42u-49)$ $\cdot(u^{130}-u^{128}+\cdots-576070405u+33881141)$
c_3	$(u^{40}+8u^{39}+\cdots+125u+25)$ $\cdot(u^{130}-7u^{129}+\cdots+2725074u+389673)$
c_4	$49(7u^{40}+12u^{39}+\cdots+11u-1)(7u^{130}-25u^{129}+\cdots+12u+1)$
c_5	$49(7u^{40}+12u^{39}+\cdots+862u+79)$ $\cdot(7u^{130}+3u^{129}+\cdots+49395145991u+2288603579)$
c_6	$(u^{40}-13u^{39}+\cdots-78u+7)(u^{130}-8u^{129}+\cdots-205u+7)$
c_7	$(u^{40}+u^{39}+\cdots+2u-1)(u^{130}+2u^{129}+\cdots+23095u+1849)$
c_8	$49(7u^{40}+10u^{39}+\cdots+9u-1)$ $\cdot(7u^{130}-13u^{129}+\cdots-2351020u+743993)$
c_9	$49(7u^{40}-11u^{39}+\cdots+26u-13)$ $\cdot(7u^{130}-34u^{129}+\cdots-829543u-30137)$
c_{10}	$(u^{40}-10u^{39}+\cdots+71u+7)(u^{130}-9u^{129}+\cdots-4538u+203)$
c_{11}	$(u^{40}-u^{39}+\cdots-2u-1)(u^{130}+2u^{129}+\cdots+23095u+1849)$
c_{12}	$(u^{40}-12u^{39}+\cdots+406u+49)$ $\cdot(u^{130}+11u^{129}+\cdots-3169857u-257957)$

IV. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$(y^{40}-77y^{39}+\cdots-40y+1)(y^{130}-72y^{129}+\cdots+493y+49)$
c_2	$(y^{40}-27y^{39}+\cdots+41552y+2401)$ $\cdot(y^{130}-2y^{129}+\cdots+55704648955559029y+1147931715461881)$
c_3	$(y^{40}-12y^{39}+\cdots+13975y+625)$ $\cdot(y^{130}-39y^{129}+\cdots-9840220879212y+151845046929)$
c_4	$2401(49y^{40}+220y^{39}+\cdots-471y+1)$ $\cdot(49y^{130}+145y^{129}+\cdots-314y+1)$
c_5	$2401(49y^{40}+612y^{39}+\cdots-443634y+6241)$ $\cdot(49y^{130}-2207y^{129}+\cdots-2.91\times10^{20}y+5.24\times10^{18})$
c_6	$(y^{40}-17y^{39}+\cdots-302y+49)(y^{130}-28y^{129}+\cdots-5709y+49)$
c_7, c_{11}	$(y^{40}-17y^{39}+\cdots+34y+1)$ $\cdot(y^{130}-96y^{129}+\cdots+11750551y+3418801)$
c_8	$2401(49y^{40}-842y^{39}+\cdots-43y+1)$ $\cdot(49y^{130}+503y^{129}+\cdots+54403265075498y+553525584049)$
c_9	$2401(49y^{40}+873y^{39}+\cdots-6526y+169)$ $\cdot(49y^{130}+846y^{129}+\cdots-131837763381y+908238769)$
c_{10}	$(y^{40}+4y^{39}+\cdots-4495y+49)$ $\cdot(y^{130}+17y^{129}+\cdots-739638y+41209)$
c_{12}	$(y^{40}-72y^{39}+\cdots-35280y+2401)$ $\cdot(y^{130}-87y^{129}+\cdots-1836787174947y+66541813849)$