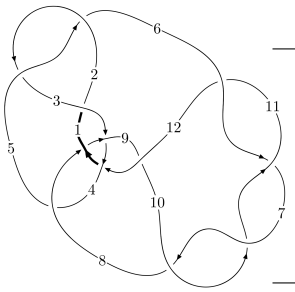
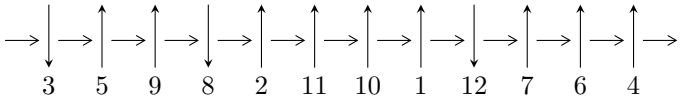
$12a_{0192}$ $(K12a_{0192})$



A knot diagram[1]

Linearized knot diagam



Solving Sequence

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

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

$$I_1^u = \langle -7.37926 \times 10^{55} u^{88} + 9.52831 \times 10^{57} u^{87} + \cdots + 4.66485 \times 10^{58} b + 1.81070 \times 10^{58},$$
$$3.57832 \times 10^{57} u^{88} - 1.08873 \times 10^{58} u^{87} + \cdots + 4.66485 \times 10^{58} a - 5.48631 \times 10^{58},\ u^{89} + u^{88} + \cdots + 5u - 1 \rangle$$

* 1 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 89 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.

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$\boldsymbol{I_1^u = \langle -7.38\times 10^{55}u^{88}+9.53\times 10^{57}u^{87}+\cdots+4.66\times 10^{58}b+1.81\times 10^{58},\ 3.58\times 10^{57}u^{88}-1.09\times 10^{58}u^{87}+\cdots+4.66\times 10^{58}a-5.49\times 10^{58},\ u^{89}+u^{88}+\cdots+5u-1\rangle}$

(i) Arc colorings

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

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

$$a_7 = \begin{pmatrix}1\\-u^2\end{pmatrix}$$

$$a_2 = \begin{pmatrix}-0.0767082u^{88}+0.233391u^{87}+\cdots+2.20793u+1.17610\\0.00158188u^{88}-0.204257u^{87}+\cdots+4.22139u-0.388158\end{pmatrix}$$

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

$$a_5 = \begin{pmatrix}-0.0700335u^{88}+0.955530u^{87}+\cdots+6.31059u-0.164482\\0.000780172u^{88}-0.187319u^{87}+\cdots+3.98539u-1.30273\end{pmatrix}$$

$$a_3 = \begin{pmatrix}-0.0962203u^{88}+0.711962u^{87}+\cdots+9.34457u-1.31376\\-0.0299682u^{88}-0.276739u^{87}+\cdots+3.53290u-1.29576\end{pmatrix}$$

$$a_1 = \begin{pmatrix}-0.0570863u^{88}+0.575773u^{87}+\cdots+0.462546u-1.20248\\0.780343u^{88}+0.632859u^{87}+\cdots+3.82209u-0.837430\end{pmatrix}$$

$$a_{10} = \begin{pmatrix}-u\\u^3+u\end{pmatrix}$$

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

$$a_4 = \begin{pmatrix}-0.368118u^{88}-0.575274u^{87}+\cdots+5.72052u-0.661402\\-0.0758137u^{88}-0.403033u^{87}+\cdots-2.02265u+0.00119394\end{pmatrix}$$

$$a_9 = \begin{pmatrix}u^5+2u^3-u\\u^5+3u^3+u\end{pmatrix}$$

(ii) Obstruction class $= -1$

(iii) Cusp Shapes $= -3.67855u^{88}-1.96081u^{87}+\cdots-19.9102u+7.42306$

(iv) u-Polynomials at the component

Crossings	u-Polynomials at each crossing
c_1	$u^{89}+35u^{88}+\cdots+9u-1$
c_2, c_5	$u^{89}+u^{88}+\cdots+9u-1$
c_3	$u^{89}+u^{88}+\cdots-1279u-421$
c_4	$u^{89}+3u^{88}+\cdots+1113u-503$
c_6, c_7, c_{10} c_{11}	$u^{89}+u^{88}+\cdots+5u-1$
c_8	$u^{89}-5u^{88}+\cdots+u-1$
c_9	$u^{89}-19u^{88}+\cdots+158017u-14627$
c_{12}	$u^{89}+9u^{88}+\cdots-u-1$

(v) Riley Polynomials at the component

Crossings	Riley Polynomials at each crossing
c_1	$y^{89} + 39y^{88} + \cdots - 651y - 1$
c_2, c_5	$y^{89} + 35y^{88} + \cdots + 9y - 1$
c_3	$y^{89} - 109y^{88} + \cdots + 13004525y - 177241$
c_4	$y^{89} - 81y^{88} + \cdots - 6843435y - 253009$
c_6, c_7, c_{10} c_{11}	$y^{89} + 99y^{88} + \cdots + 5y - 1$
c_8	$y^{89} - 9y^{88} + \cdots + 5y - 1$
c_9	$y^{89} + 27y^{88} + \cdots - 8680509275y - 213949129$
c_{12}	$y^{89} - 5y^{88} + \cdots + 9y - 1$

(vi) Complex Volumes and Cusp Shapes

Solutions to I^u_1	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.629172 + 0.711509I$ $a = 1.44311 - 1.26130I$ $b = -0.589163 - 0.910663I$	$1.38416 + 5.67170I$	0
$u = 0.629172 - 0.711509I$ $a = 1.44311 + 1.26130I$ $b = -0.589163 + 0.910663I$	$1.38416 - 5.67170I$	0
$u = 0.222782 + 0.904277I$ $a = -0.111171 + 0.701310I$ $b = -0.556330 + 0.569146I$	$-0.83522 + 2.21982I$	0
$u = 0.222782 - 0.904277I$ $a = -0.111171 - 0.701310I$ $b = -0.556330 - 0.569146I$	$-0.83522 - 2.21982I$	0
$u = 0.652354 + 0.618933I$ $a = 0.016156 - 0.206879I$ $b = -0.568168 + 0.764733I$	$1.84881 + 1.03677I$	0
$u = 0.652354 - 0.618933I$ $a = 0.016156 + 0.206879I$ $b = -0.568168 - 0.764733I$	$1.84881 - 1.03677I$	0
$u = -0.587821 + 0.668605I$ $a = 1.84371 + 1.57426I$ $b = -0.689784 + 1.112970I$	$1.6805 - 14.3965I$	0
$u = -0.587821 - 0.668605I$ $a = 1.84371 - 1.57426I$ $b = -0.689784 - 1.112970I$	$1.6805 + 14.3965I$	0
$u = -0.576040 + 0.637409I$ $a = -0.180456 + 0.891479I$ $b = -0.912731 - 0.519289I$	$3.49714 - 8.50503I$	0
$u = -0.576040 - 0.637409I$ $a = -0.180456 - 0.891479I$ $b = -0.912731 + 0.519289I$	$3.49714 + 8.50503I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.186133+0.807246I$ $a=\ 1.17307+2.02621I$ $b=-0.110685+1.090650I$	$-5.27581+0.77625I$	0
$u=-0.186133-0.807246I$ $a=\ 1.17307-2.02621I$ $b=-0.110685-1.090650I$	$-5.27581-0.77625I$	0
$u=\ 0.187001+1.165500I$ $a=\ 0.45304-1.37786I$ $b=-0.617348-0.979446I$	$-1.97335+7.02283I$	0
$u=\ 0.187001-1.165500I$ $a=\ 0.45304+1.37786I$ $b=-0.617348+0.979446I$	$-1.97335-7.02283I$	0
$u=-0.483117+0.643227I$ $a=-1.27197-1.41185I$ $b=\ 0.055573-1.266110I$	$-3.30433-6.34543I$	$0.+9.41566I$
$u=-0.483117-0.643227I$ $a=-1.27197+1.41185I$ $b=\ 0.055573+1.266110I$	$-3.30433+6.34543I$	$0.-9.41566I$
$u=\ 0.735954+0.310708I$ $a=\ 1.072010-0.285219I$ $b=-0.596779-0.860932I$	$2.75551+3.59145I$	$16.9119-7.8798I$
$u=\ 0.735954-0.310708I$ $a=\ 1.072010+0.285219I$ $b=-0.596779+0.860932I$	$2.75551-3.59145I$	$16.9119+7.8798I$
$u=-0.128379+1.218880I$ $a=\ 0.048603-1.126680I$ $b=-0.654242-1.028240I$	$-1.89864+7.13164I$	0
$u=-0.128379-1.218880I$ $a=\ 0.048603+1.126680I$ $b=-0.654242+1.028240I$	$-1.89864-7.13164I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.302285 + 0.698873I$ $a = 0.372084 + 1.059710I$ $b = -0.097148 + 0.520009I$	$-0.88546 + 2.04291I$	$2.01521 - 6.41546I$
$u = 0.302285 - 0.698873I$ $a = 0.372084 - 1.059710I$ $b = -0.097148 - 0.520009I$	$-0.88546 - 2.04291I$	$2.01521 + 6.41546I$
$u = 0.729548 + 0.201616I$ $a = 0.787909 + 0.143124I$ $b = -0.594451 + 0.821113I$	$2.87995 - 1.13132I$	$17.8044 + 0.I$
$u = 0.729548 - 0.201616I$ $a = 0.787909 - 0.143124I$ $b = -0.594451 - 0.821113I$	$2.87995 + 1.13132I$	$17.8044 + 0.I$
$u = -0.487284 + 0.556003I$ $a = -2.04497 - 1.51099I$ $b = 0.721154 - 1.156170I$	$1.32467 - 6.17318I$	$8.6449 + 12.1067I$
$u = -0.487284 - 0.556003I$ $a = -2.04497 + 1.51099I$ $b = 0.721154 + 1.156170I$	$1.32467 + 6.17318I$	$8.6449 - 12.1067I$
$u = -0.672888 + 0.280476I$ $a = 0.789738 - 0.042118I$ $b = -0.684732 - 1.084880I$	$2.83010 + 10.15130I$	$7.61075 - 5.74179I$
$u = -0.672888 - 0.280476I$ $a = 0.789738 + 0.042118I$ $b = -0.684732 + 1.084880I$	$2.83010 - 10.15130I$	$7.61075 + 5.74179I$
$u = -0.639069 + 0.312530I$ $a = 1.053290 + 0.122104I$ $b = -0.869417 + 0.551430I$	$4.45557 + 4.38854I$	$10.08298 - 1.27597I$
$u = -0.639069 - 0.312530I$ $a = 1.053290 - 0.122104I$ $b = -0.869417 - 0.551430I$	$4.45557 - 4.38854I$	$10.08298 + 1.27597I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.500387+0.501574I$ $a=-1.042820-0.811706I$ $b=\ \ 0.978738-0.544688I$	$3.39905-3.48992I$	$14.4983+7.8374I$
$u=-0.500387-0.501574I$ $a=-1.042820+0.811706I$ $b=\ \ 0.978738+0.544688I$	$3.39905+3.48992I$	$14.4983-7.8374I$
$u=\ \ 0.474265+0.491419I$ $a=\ \ 0.465564+0.028509I$ $b=\ \ 0.173591+0.109004I$	$0.68170+1.66226I$	$3.48924-4.60078I$
$u=\ \ 0.474265-0.491419I$ $a=\ \ 0.465564-0.028509I$ $b=\ \ 0.173591-0.109004I$	$0.68170-1.66226I$	$3.48924+4.60078I$
$u=\ \ 0.434724+0.524138I$ $a=-5.16293+0.82804I$ $b=\ \ 0.537717+0.883432I$	$0.38729+3.69638I$	$-13.5626+18.8380I$
$u=\ \ 0.434724-0.524138I$ $a=-5.16293-0.82804I$ $b=\ \ 0.537717-0.883432I$	$0.38729-3.69638I$	$-13.5626-18.8380I$
$u=-0.499673+0.459395I$ $a=-0.080168-1.151680I$ $b=\ \ 0.969659+0.422445I$	$3.52293-0.01044I$	$15.3738+0.9083I$
$u=-0.499673-0.459395I$ $a=-0.080168+1.151680I$ $b=\ \ 0.969659-0.422445I$	$3.52293+0.01044I$	$15.3738-0.9083I$
$u=-0.103485+1.347580I$ $a=\ \ 0.273259+0.747966I$ $b=-0.786906+0.627797I$	$-0.67403+1.69091I$	0
$u=-0.103485-1.347580I$ $a=\ \ 0.273259-0.747966I$ $b=-0.786906-0.627797I$	$-0.67403-1.69091I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.431180 + 0.470567I$ $a = -1.96595 + 3.06518I$ $b = 0.535306 - 0.833683I$	$0.550681 - 0.619676I$	$-20.5386 + 0.0092I$
$u = 0.431180 - 0.470567I$ $a = -1.96595 - 3.06518I$ $b = 0.535306 + 0.833683I$	$0.550681 + 0.619676I$	$-20.5386 - 0.0092I$
$u = 0.295375 + 0.540642I$ $a = 2.09399 - 3.18145I$ $b = 0.406553 - 0.839840I$	$-0.370699 - 0.487288I$	$9.82844 + 2.22925I$
$u = 0.295375 - 0.540642I$ $a = 2.09399 + 3.18145I$ $b = 0.406553 + 0.839840I$	$-0.370699 + 0.487288I$	$9.82844 - 2.22925I$
$u = -0.473391 + 0.392852I$ $a = -0.181126 - 0.558731I$ $b = 0.749485 + 1.073430I$	$1.80432 + 2.77862I$	$11.25470 - 4.17137I$
$u = -0.473391 - 0.392852I$ $a = -0.181126 + 0.558731I$ $b = 0.749485 - 1.073430I$	$1.80432 - 2.77862I$	$11.25470 + 4.17137I$
$u = -0.503795 + 0.211387I$ $a = 0.754696 + 0.227869I$ $b = 0.081301 + 1.158510I$	$-2.10438 + 2.91296I$	$3.85872 - 3.54311I$
$u = -0.503795 - 0.211387I$ $a = 0.754696 - 0.227869I$ $b = 0.081301 - 1.158510I$	$-2.10438 - 2.91296I$	$3.85872 + 3.54311I$
$u = -0.031844 + 0.498137I$ $a = 1.79243 + 1.98491I$ $b = 0.452894 + 1.035280I$	$-1.16253 + 2.81373I$	$0.94545 - 4.27965I$
$u = -0.031844 - 0.498137I$ $a = 1.79243 - 1.98491I$ $b = 0.452894 - 1.035280I$	$-1.16253 - 2.81373I$	$0.94545 + 4.27965I$

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.09570+1.51606I$ $a=\ 0.484133+0.651673I$ $b=\ 0.846108+1.016410I$	$-4.55578+0.98631I$	0
$u=-0.09570-1.51606I$ $a=\ 0.484133-0.651673I$ $b=\ 0.846108-1.016410I$	$-4.55578-0.98631I$	0
$u=-0.12003+1.52137I$ $a=\ 0.788400-0.472468I$ $b=\ 1.028650+0.306936I$	$-3.06055-2.11654I$	0
$u=-0.12003-1.52137I$ $a=\ 0.788400+0.472468I$ $b=\ 1.028650-0.306936I$	$-3.06055+2.11654I$	0
$u=\ 0.12194+1.53251I$ $a=\ 0.524459+0.057134I$ $b=\ 0.287639+0.284127I$	$-6.09091+3.74135I$	0
$u=\ 0.12194-1.53251I$ $a=\ 0.524459-0.057134I$ $b=\ 0.287639-0.284127I$	$-6.09091-3.74135I$	0
$u=-0.05215+1.53803I$ $a=\ 0.78383+2.12557I$ $b=\ 0.394001+1.219470I$	$-7.99338+2.27220I$	0
$u=-0.05215-1.53803I$ $a=\ 0.78383-2.12557I$ $b=\ 0.394001-1.219470I$	$-7.99338-2.27220I$	0
$u=\ 0.10814+1.53630I$ $a=-0.46791+1.35996I$ $b=\ 0.557170-0.784157I$	$-6.21839+1.22639I$	0
$u=\ 0.10814-1.53630I$ $a=-0.46791-1.35996I$ $b=\ 0.557170+0.784157I$	$-6.21839-1.22639I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.13046+1.53461I$ $a=-0.009257-1.133030I$ $b=\ \ 1.023540-0.632653I$	$-3.39866-5.69060I$	0
$u=-0.13046-1.53461I$ $a=-0.009257+1.133030I$ $b=\ \ 1.023540+0.632653I$	$-3.39866+5.69060I$	0
$u=\ \ 0.11815+1.55305I$ $a=-3.04685+2.18791I$ $b=\ \ 0.547660+0.917462I$	$-6.64186+5.64915I$	0
$u=\ \ 0.11815-1.55305I$ $a=-3.04685-2.18791I$ $b=\ \ 0.547660-0.917462I$	$-6.64186-5.64915I$	0
$u=-0.13579+1.55414I$ $a=-0.92689-2.28994I$ $b=\ \ 0.714058-1.215670I$	$-5.76285-8.40304I$	0
$u=-0.13579-1.55414I$ $a=-0.92689+2.28994I$ $b=\ \ 0.714058+1.215670I$	$-5.76285+8.40304I$	0
$u=\ \ 0.08285+1.55949I$ $a=\ \ 0.69935-3.37892I$ $b=\ \ 0.379375-0.924960I$	$-7.53072+0.87574I$	0
$u=\ \ 0.08285-1.55949I$ $a=\ \ 0.69935+3.37892I$ $b=\ \ 0.379375+0.924960I$	$-7.53072-0.87574I$	0
$u=\ \ 0.18967+1.55696I$ $a=-0.180533+0.193860I$ $b=-0.569360+0.635557I$	$-5.32319+4.10488I$	0
$u=\ \ 0.18967-1.55696I$ $a=-0.180533-0.193860I$ $b=-0.569360-0.635557I$	$-5.32319-4.10488I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u=-0.17406+1.57857I$ $a=-0.732146+0.316878I$ $b=-0.945850-0.492890I$	$-3.92592-11.27190I$	0
$u=-0.17406-1.57857I$ $a=-0.732146-0.316878I$ $b=-0.945850+0.492890I$	$-3.92592+11.27190I$	0
$u=-0.14170+1.58228I$ $a=-0.81875-2.26841I$ $b=\ \ 0.029274-1.322190I$	$-10.81660-8.64854I$	0
$u=-0.14170-1.58228I$ $a=-0.81875+2.26841I$ $b=\ \ 0.029274+1.322190I$	$-10.81660+8.64854I$	0
$u=-0.17969+1.59088I$ $a=\ \ 1.07922+2.20177I$ $b=-0.690669+1.135390I$	$-5.9008-17.2515I$	0
$u=-0.17969-1.59088I$ $a=\ \ 1.07922-2.20177I$ $b=-0.690669-1.135390I$	$-5.9008+17.2515I$	0
$u=\ \ 0.02185+1.60984I$ $a=-0.334028+0.512887I$ $b=-0.660273+0.247851I$	$-9.21525+2.86609I$	0
$u=\ \ 0.02185-1.60984I$ $a=-0.334028-0.512887I$ $b=-0.660273-0.247851I$	$-9.21525-2.86609I$	0
$u=\ \ 0.19671+1.59879I$ $a=\ \ 0.95926-1.78876I$ $b=-0.587714-0.974481I$	$-6.33075+8.77850I$	0
$u=\ \ 0.19671-1.59879I$ $a=\ \ 0.95926+1.78876I$ $b=-0.587714+0.974481I$	$-6.33075-8.77850I$	0

Solutions to I_1^u	$\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$	Cusp shape
$u = 0.11385 + 1.60819I$ $a = -0.01550 + 1.75233I$ $b = -0.159993 + 0.835696I$	$-8.85016 + 3.75057I$	0
$u = 0.11385 - 1.60819I$ $a = -0.01550 - 1.75233I$ $b = -0.159993 - 0.835696I$	$-8.85016 - 3.75057I$	0
$u = -0.03980 + 1.61583I$ $a = 0.59179 + 2.44233I$ $b = -0.207157 + 1.168620I$	$-13.56530 - 0.00825I$	0
$u = -0.03980 - 1.61583I$ $a = 0.59179 - 2.44233I$ $b = -0.207157 - 1.168620I$	$-13.56530 + 0.00825I$	0
$u = 0.01953 + 1.65553I$ $a = -0.02044 - 2.11856I$ $b = -0.548611 - 1.071920I$	$-11.38720 + 7.42542I$	0
$u = 0.01953 - 1.65553I$ $a = -0.02044 + 2.11856I$ $b = -0.548611 + 1.071920I$	$-11.38720 - 7.42542I$	0
$u = 0.320073$ $a = 1.19050$ $b = 0.294304$	0.909318	11.9760
$u = 0.215339 + 0.116095I$ $a = 1.65550 + 0.61588I$ $b = 0.580913 + 0.842383I$	$0.56266 + 2.30732I$	$0.56794 - 4.25502I$
$u = 0.215339 - 0.116095I$ $a = 1.65550 - 0.61588I$ $b = 0.580913 - 0.842383I$	$0.56266 - 2.30732I$	$0.56794 + 4.25502I$

II. u-Polynomials

Crossings	u-Polynomials at each crossing
c_1	$u^{89}+35u^{88}+\cdots+9u-1$
c_2, c_5	$u^{89}+u^{88}+\cdots+9u-1$
c_3	$u^{89}+u^{88}+\cdots-1279u-421$
c_4	$u^{89}+3u^{88}+\cdots+1113u-503$
c_6, c_7, c_{10} c_{11}	$u^{89}+u^{88}+\cdots+5u-1$
c_8	$u^{89}-5u^{88}+\cdots+u-1$
c_9	$u^{89}-19u^{88}+\cdots+158017u-14627$
c_{12}	$u^{89}+9u^{88}+\cdots-u-1$

III. Riley Polynomials

Crossings	Riley Polynomials at each crossing
c_1	$y^{89}+39y^{88}+\cdots-651y-1$
c_2, c_5	$y^{89}+35y^{88}+\cdots+9y-1$
c_3	$y^{89}-109y^{88}+\cdots+13004525y-177241$
c_4	$y^{89}-81y^{88}+\cdots-6843435y-253009$
c_6, c_7, c_{10} c_{11}	$y^{89}+99y^{88}+\cdots+5y-1$
c_8	$y^{89}-9y^{88}+\cdots+5y-1$
c_9	$y^{89}+27y^{88}+\cdots-8680509275y-213949129$
c_{12}	$y^{89}-5y^{88}+\cdots+9y-1$