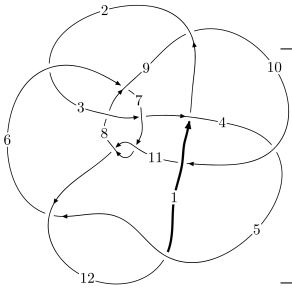
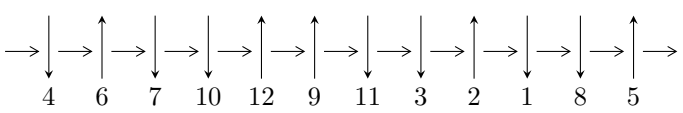
## $12a_{0884}$ $(K12a_{0884})$




A knot diagram[1]

**Linearized knot diagam**




**Solving Sequence**

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

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

$$\begin{aligned} I_1^u = \langle & -8.10959 \times 10^{2657} u^{208} - 3.50955 \times 10^{2658} u^{207} + \cdots + 1.60346 \times 10^{2656} b + 2.47009 \times 10^{2658}, \\ & - 4.18869 \times 10^{2656} u^{208} - 1.82159 \times 10^{2657} u^{207} + \cdots + 1.60346 \times 10^{2656} a + 3.34044 \times 10^{2657}, \\ & u^{209} + 4u^{208} + \cdots - 29u + 1 \rangle \\ I_2^u = \langle & 1.17477 \times 10^{183} u^{59} - 5.87917 \times 10^{183} u^{58} + \cdots + 1.06262 \times 10^{184} b + 6.00821 \times 10^{183}, \\ & - 1.29179 \times 10^{183} u^{59} + 6.69835 \times 10^{183} u^{58} + \cdots + 1.06262 \times 10^{184} a + 2.98562 \times 10^{184}, \\ & u^{60} - 5u^{59} + \cdots - 2u + 1 \rangle \end{aligned}$$

* 2 irreducible components of $\dim_{\mathbb{C}} = 0$, with total 269 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.** $\boldsymbol{I_1^u = \langle -8.11 \times 10^{2657} u^{208} - 3.51 \times 10^{2658} u^{207} + \cdots + 1.60 \times 10^{2656} b + 2.47 \times 10^{2658},\ -4.19 \times 10^{2656} u^{208} - 1.82 \times 10^{2657} u^{207} + \cdots + 1.60 \times 10^{2656} a + 3.34 \times 10^{2657},\ u^{209} + 4u^{208} + \cdots - 29u + 1 \rangle}$

**(i) Arc colorings**

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 2.61228u^{208} + 11.3604u^{207} + \cdots + 180.337u - 20.8327 \\ 50.5754u^{208} + 218.873u^{207} + \cdots + 4014.81u - 154.047 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} -47.9632u^{208} - 207.513u^{207} + \cdots - 3834.47u + 133.215 \\ 50.5754u^{208} + 218.873u^{207} + \cdots + 4014.81u - 154.047 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -12.8554u^{208} - 54.2835u^{207} + \cdots - 705.347u + 32.3403 \\ -35.1135u^{208} - 150.396u^{207} + \cdots - 3067.90u + 121.566 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 15.6991u^{208} + 66.6144u^{207} + \cdots + 1787.26u - 69.4800 \\ 36.5093u^{208} + 157.712u^{207} + \cdots + 2975.82u - 113.861 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} 21.9369u^{208} + 94.9669u^{207} + \cdots + 2292.42u - 86.3643 \\ -32.2544u^{208} - 138.171u^{207} + \cdots - 2810.34u + 111.485 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.0115095u^{208} - 1.71675u^{207} + \cdots + 539.399u - 23.5712 \\ -21.2435u^{208} - 91.7499u^{207} + \cdots - 1679.37u + 65.8054 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} 39.6261u^{208} + 171.881u^{207} + \cdots + 3100.82u - 107.250 \\ -19.3332u^{208} - 83.3766u^{207} + \cdots - 1615.68u + 62.4346 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 29.0576u^{208} + 124.992u^{207} + \cdots + 2371.98u - 105.034 \\ 25.8012u^{208} + 111.596u^{207} + \cdots + 2077.10u - 79.6954 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -5.04414u^{208} - 22.4581u^{207} + \cdots - 299.878u + 11.0691 \\ 4.32188u^{208} + 18.7946u^{207} + \cdots + 329.949u - 12.6917 \end{pmatrix}$$

**(ii) Obstruction class** $= -1$

**(iii) Cusp Shapes** $= -339.908u^{208} - 1483.97u^{207} + \cdots - 23747.8u + 897.796$

**(iv) u-Polynomials at the component**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $u^{209} + 16u^{208} + \cdots - 229u + 7$ |
| $c_2$ | $u^{209} + 20u^{207} + \cdots + 1001187u + 56817$ |
| $c_3$ | $u^{209} + 8u^{208} + \cdots + 10140313539u - 1878370717$ |
| $c_4$ | $u^{209} - 5u^{208} + \cdots + 4624338u - 184123$ |
| $c_5, c_{12}$ | $u^{209} + u^{208} + \cdots + 4331046357u + 113222443$ |
| $c_6$ | $u^{209} + 16u^{208} + \cdots + 12u + 1$ |
| $c_7, c_{11}$ | $u^{209} + 4u^{208} + \cdots + 2657560u + 2311849$ |
| $c_8$ | $u^{209} + 4u^{208} + \cdots - 29u + 1$ |
| $c_9$ | $u^{209} + 45u^{207} + \cdots + 739402858830u + 26116631329$ |
| $c_{10}$ | $u^{209} - 7u^{208} + \cdots - 17609u + 341$ |

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $y^{209} - 2y^{208} + \cdots - 6625y - 49$ |
| $c_2$ | $y^{209} + 40y^{208} + \cdots - 266988642255y - 3228171489$ |
| $c_3$ | $y^{209} - 8y^{208} + \cdots + 2.14 \times 10^{20}y - 3.53 \times 10^{18}$ |
| $c_4$ | $y^{209} - 47y^{208} + \cdots + 8724659978546y - 33901279129$ |
| $c_5, c_{12}$ | $y^{209} + 165y^{208} + \cdots + 833990559064792201y - 12819321598888249$ |
| $c_6$ | $y^{209} + 30y^{208} + \cdots - 56y - 1$ |
| $c_7, c_{11}$ | $y^{209} - 118y^{208} + \cdots + 340566951866202y - 5344645798801$ |
| $c_8$ | $y^{209} - 8y^{208} + \cdots - 1269y - 1$ |
| $c_9$ | $y^{209} + 90y^{208} + \cdots - 4.99 \times 10^{22}y - 6.82 \times 10^{20}$ |
| $c_{10}$ | $y^{209} - 37y^{208} + \cdots + 35347503y - 116281$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.322396+0.941816I$<br>$a=1.078060-0.213369I$<br>$b=-0.766823+0.134796I$ | $-4.12956+5.33084I$ | 0 |
| $u=-0.322396-0.941816I$<br>$a=1.078060+0.213369I$<br>$b=-0.766823-0.134796I$ | $-4.12956-5.33084I$ | 0 |
| $u=0.688925+0.735337I$<br>$a=-2.12587+0.58108I$<br>$b=-1.251480-0.234975I$ | $-6.95554-5.82618I$ | 0 |
| $u=0.688925-0.735337I$<br>$a=-2.12587-0.58108I$<br>$b=-1.251480+0.234975I$ | $-6.95554+5.82618I$ | 0 |
| $u=-0.466678+0.900813I$<br>$a=0.457825+0.401507I$<br>$b=0.605901-0.696082I$ | $0.41107+1.81059I$ | 0 |
| $u=-0.466678-0.900813I$<br>$a=0.457825-0.401507I$<br>$b=0.605901+0.696082I$ | $0.41107-1.81059I$ | 0 |
| $u=-0.295002+0.983333I$<br>$a=-0.979898+0.538820I$<br>$b=1.062930+0.226140I$ | $0.24315+2.45125I$ | 0 |
| $u=-0.295002-0.983333I$<br>$a=-0.979898-0.538820I$<br>$b=1.062930-0.226140I$ | $0.24315-2.45125I$ | 0 |
| $u=0.491065+0.809479I$<br>$a=0.52229-1.70212I$<br>$b=1.166850+0.481470I$ | $-3.68167-7.05122I$ | 0 |
| $u=0.491065-0.809479I$<br>$a=0.52229+1.70212I$<br>$b=1.166850-0.481470I$ | $-3.68167+7.05122I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 1.035890 + 0.197559I$<br>$a = -0.977539 + 0.294685I$<br>$b = -1.45275 - 0.37250I$ | $-7.67423 + 1.32305I$ | 0 |
| $u = 1.035890 - 0.197559I$<br>$a = -0.977539 - 0.294685I$<br>$b = -1.45275 + 0.37250I$ | $-7.67423 - 1.32305I$ | 0 |
| $u = 0.909494 + 0.536845I$<br>$a = 0.592526 - 0.548109I$<br>$b = 0.057360 + 0.567159I$ | $-0.36766 + 3.81034I$ | 0 |
| $u = 0.909494 - 0.536845I$<br>$a = 0.592526 + 0.548109I$<br>$b = 0.057360 - 0.567159I$ | $-0.36766 - 3.81034I$ | 0 |
| $u = 0.629677 + 0.700527I$<br>$a = -1.88696 + 1.75127I$<br>$b = -0.917287 - 0.597759I$ | $-1.68445 - 7.10492I$ | 0 |
| $u = 0.629677 - 0.700527I$<br>$a = -1.88696 - 1.75127I$<br>$b = -0.917287 + 0.597759I$ | $-1.68445 + 7.10492I$ | 0 |
| $u = 0.669692 + 0.832374I$<br>$a = -0.080351 - 1.150370I$<br>$b = 0.737976 + 0.128827I$ | $-6.00830 - 5.33123I$ | 0 |
| $u = 0.669692 - 0.832374I$<br>$a = -0.080351 + 1.150370I$<br>$b = 0.737976 - 0.128827I$ | $-6.00830 + 5.33123I$ | 0 |
| $u = -1.057120 + 0.161356I$<br>$a = -0.326208 + 0.027726I$<br>$b = -0.57041 - 1.41267I$ | $-1.82198 - 3.52569I$ | 0 |
| $u = -1.057120 - 0.161356I$<br>$a = -0.326208 - 0.027726I$<br>$b = -0.57041 + 1.41267I$ | $-1.82198 + 3.52569I$ | 0 |

| | Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|---|
| $u=$ | $0.684254+0.842297I$ | | |
| $a=$ | $1.70966-0.98842I$ | $-5.12674-2.17128I$ | 0 |
| $b=$ | $1.001110+0.102873I$ | | |
| $u=$ | $0.684254-0.842297I$ | | |
| $a=$ | $1.70966+0.98842I$ | $-5.12674+2.17128I$ | 0 |
| $b=$ | $1.001110-0.102873I$ | | |
| $u=$ | $-0.778986+0.473422I$ | | |
| $a=$ | $-0.830172-0.538918I$ | $-0.52177+2.57685I$ | 0 |
| $b=$ | $0.034639+0.766751I$ | | |
| $u=$ | $-0.778986-0.473422I$ | | |
| $a=$ | $-0.830172+0.538918I$ | $-0.52177-2.57685I$ | 0 |
| $b=$ | $0.034639-0.766751I$ | | |
| $u=$ | $0.664235+0.602411I$ | | |
| $a=$ | $-0.085565+0.192954I$ | $1.23843-4.89844I$ | 0 |
| $b=$ | $-0.272651-1.117750I$ | | |
| $u=$ | $0.664235-0.602411I$ | | |
| $a=$ | $-0.085565-0.192954I$ | $1.23843+4.89844I$ | 0 |
| $b=$ | $-0.272651+1.117750I$ | | |
| $u=$ | $-0.170528+0.868979I$ | | |
| $a=$ | $-0.346178-0.206792I$ | $-1.02684+1.21925I$ | 0 |
| $b=$ | $0.060765+0.793071I$ | | |
| $u=$ | $-0.170528-0.868979I$ | | |
| $a=$ | $-0.346178+0.206792I$ | $-1.02684-1.21925I$ | 0 |
| $b=$ | $0.060765-0.793071I$ | | |
| $u=$ | $0.702475+0.535536I$ | | |
| $a=$ | $2.13084-1.02466I$ | $-4.04158-5.84535I$ | 0 |
| $b=$ | $1.214860+0.463350I$ | | |
| $u=$ | $0.702475-0.535536I$ | | |
| $a=$ | $2.13084+1.02466I$ | $-4.04158+5.84535I$ | 0 |
| $b=$ | $1.214860-0.463350I$ | | |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.645436+0.601214I$<br>$a=\ \ 1.32439+0.58808I$<br>$b=\ \ 1.39035-0.75314I$ | $-6.3552+13.4802I$ | 0 |
| $u=-0.645436-0.601214I$<br>$a=\ \ 1.32439-0.58808I$<br>$b=\ \ 1.39035+0.75314I$ | $-6.3552-13.4802I$ | 0 |
| $u=\ \ 0.808900+0.349105I$<br>$a=-1.40992+0.29775I$<br>$b=-1.47742-0.81750I$ | $-4.62811-4.87068I$ | 0 |
| $u=\ \ 0.808900-0.349105I$<br>$a=-1.40992-0.29775I$<br>$b=-1.47742+0.81750I$ | $-4.62811+4.87068I$ | 0 |
| $u=-0.629684+0.614199I$<br>$a=\ \ 0.391089-0.612087I$<br>$b=-0.556757-0.560991I$ | $-0.72140+2.54607I$ | 0 |
| $u=-0.629684-0.614199I$<br>$a=\ \ 0.391089+0.612087I$<br>$b=-0.556757+0.560991I$ | $-0.72140-2.54607I$ | 0 |
| $u=-1.13018$<br>$a=-1.24879$<br>$b=-1.26027$ | $-2.54194$ | 0 |
| $u=\ \ 0.509588+0.696373I$<br>$a=\ \ 1.65326-0.94616I$<br>$b=\ \ 1.283870+0.477392I$ | $-4.83547-5.83889I$ | 0 |
| $u=\ \ 0.509588-0.696373I$<br>$a=\ \ 1.65326+0.94616I$<br>$b=\ \ 1.283870-0.477392I$ | $-4.83547+5.83889I$ | 0 |
| $u=-0.324124+1.094780I$<br>$a=-0.405834+0.280821I$<br>$b=\ \ 0.864367+0.041365I$ | $0.38083+2.95440I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.324124-1.094780I$<br>$a=-0.405834-0.280821I$<br>$b=\ \ 0.864367-0.041365I$ | $0.38083-2.95440I$ | 0 |
| $u=-1.127800+0.184799I$<br>$a=\ \ 1.51057+0.77910I$<br>$b=\ \ 1.118360+0.319243I$ | $-8.37201-0.61813I$ | 0 |
| $u=-1.127800-0.184799I$<br>$a=\ \ 1.51057-0.77910I$<br>$b=\ \ 1.118360-0.319243I$ | $-8.37201+0.61813I$ | 0 |
| $u=-0.523025+1.017600I$<br>$a=-0.237001+0.429116I$<br>$b=\ \ 0.669239+0.319052I$ | $0.27896+2.84359I$ | 0 |
| $u=-0.523025-1.017600I$<br>$a=-0.237001-0.429116I$<br>$b=\ \ 0.669239-0.319052I$ | $0.27896-2.84359I$ | 0 |
| $u=\ \ 0.170881+0.834356I$<br>$a=-0.366988+0.118463I$<br>$b=\ \ 0.202472+0.688941I$ | $3.46797+1.79940I$ | 0 |
| $u=\ \ 0.170881-0.834356I$<br>$a=-0.366988-0.118463I$<br>$b=\ \ 0.202472-0.688941I$ | $3.46797-1.79940I$ | 0 |
| $u=\ \ 0.058309+0.838997I$<br>$a=\ \ 0.584408-0.004947I$<br>$b=\ \ 0.835937-0.827738I$ | $-0.17588+3.87813I$ | 0 |
| $u=\ \ 0.058309-0.838997I$<br>$a=\ \ 0.584408+0.004947I$<br>$b=\ \ 0.835937+0.827738I$ | $-0.17588-3.87813I$ | 0 |
| $u=-1.065600+0.484501I$<br>$a=\ \ 1.79052-0.01229I$<br>$b=\ \ 1.237350-0.267508I$ | $-8.93721+6.04392I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-1.065600-0.484501I$<br>$a=\ \ 1.79052+0.01229I$<br>$b=\ \ 1.237350+0.267508I$ | $-8.93721-6.04392I$ | 0 |
| $u=\ \ 1.171450+0.184950I$<br>$a=-1.56947+0.52835I$<br>$b=-1.108940+0.402672I$ | $-7.47840+2.37028I$ | 0 |
| $u=\ \ 1.171450-0.184950I$<br>$a=-1.56947-0.52835I$<br>$b=-1.108940-0.402672I$ | $-7.47840-2.37028I$ | 0 |
| $u=-0.541897+0.600862I$<br>$a=-1.097950-0.794729I$<br>$b=-1.33090+0.60363I$ | $-6.04307+4.07584I$ | 0 |
| $u=-0.541897-0.600862I$<br>$a=-1.097950+0.794729I$<br>$b=-1.33090-0.60363I$ | $-6.04307-4.07584I$ | 0 |
| $u=-0.206432+1.175830I$<br>$a=-0.045813+0.308018I$<br>$b=-0.734888+0.220198I$ | $-1.02960+3.25121I$ | 0 |
| $u=-0.206432-1.175830I$<br>$a=-0.045813-0.308018I$<br>$b=-0.734888-0.220198I$ | $-1.02960-3.25121I$ | 0 |
| $u=-0.528057+0.591427I$<br>$a=-0.691390-0.251399I$<br>$b=-0.464598+0.503732I$ | $-0.94301+1.39215I$ | 0 |
| $u=-0.528057-0.591427I$<br>$a=-0.691390+0.251399I$<br>$b=-0.464598-0.503732I$ | $-0.94301-1.39215I$ | 0 |
| $u=-0.781626+0.129198I$<br>$a=-3.14009+0.40454I$<br>$b=-1.190240+0.476110I$ | $-7.16288+11.23080I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.781626-0.129198I$<br>$a=-3.14009-0.40454I$<br>$b=-1.190240-0.476110I$ | $-7.16288-11.23080I$ | 0 |
| $u=0.106093+0.780214I$<br>$a=1.90788+0.87396I$<br>$b=-1.203160-0.350716I$ | $-5.28742-11.13400I$ | 0 |
| $u=0.106093-0.780214I$<br>$a=1.90788-0.87396I$<br>$b=-1.203160+0.350716I$ | $-5.28742+11.13400I$ | 0 |
| $u=-0.755053+0.171762I$<br>$a=-0.980882-0.379650I$<br>$b=0.029016-0.473614I$ | $-4.57808-1.05851I$ | 0 |
| $u=-0.755053-0.171762I$<br>$a=-0.980882+0.379650I$<br>$b=0.029016+0.473614I$ | $-4.57808+1.05851I$ | 0 |
| $u=-0.763634+0.116736I$<br>$a=-1.198410-0.196738I$<br>$b=-1.237830+0.539694I$ | $-2.42927+1.02706I$ | 0 |
| $u=-0.763634-0.116736I$<br>$a=-1.198410+0.196738I$<br>$b=-1.237830-0.539694I$ | $-2.42927-1.02706I$ | 0 |
| $u=-0.054084+0.764953I$<br>$a=-0.660638+1.153620I$<br>$b=0.792541-0.465137I$ | $1.59684+2.06914I$ | 0 |
| $u=-0.054084-0.764953I$<br>$a=-0.660638-1.153620I$<br>$b=0.792541+0.465137I$ | $1.59684-2.06914I$ | 0 |
| $u=-0.866749+0.877622I$<br>$a=0.150703-0.082080I$<br>$b=0.101478+0.884405I$ | $-3.29272+6.59289I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.866749-0.877622I$<br>$a=\ 0.150703+0.082080I$<br>$b=\ 0.101478-0.884405I$ | $-3.29272-6.59289I$ | 0 |
| $u=-0.726304+1.000820I$<br>$a=-0.328436+0.144576I$<br>$b=\ 0.457951+1.017620I$ | $0.49729+3.11019I$ | 0 |
| $u=-0.726304-1.000820I$<br>$a=-0.328436-0.144576I$<br>$b=\ 0.457951-1.017620I$ | $0.49729-3.11019I$ | 0 |
| $u=-0.000760+0.760636I$<br>$a=\ 2.40210+0.01528I$<br>$b=-0.886866+0.198642I$ | $0.67024+4.87492I$ | 0 |
| $u=-0.000760-0.760636I$<br>$a=\ 2.40210-0.01528I$<br>$b=-0.886866-0.198642I$ | $0.67024-4.87492I$ | 0 |
| $u=\ 0.779227+0.982253I$<br>$a=\ 0.062814+0.165899I$<br>$b=\ 0.380044-0.921225I$ | $3.78269-2.72916I$ | 0 |
| $u=\ 0.779227-0.982253I$<br>$a=\ 0.062814-0.165899I$<br>$b=\ 0.380044+0.921225I$ | $3.78269+2.72916I$ | 0 |
| $u=-0.965297+0.807005I$<br>$a=\ 1.78691+0.92455I$<br>$b=\ 0.724314-0.740370I$ | $-0.80196+8.84500I$ | 0 |
| $u=-0.965297-0.807005I$<br>$a=\ 1.78691-0.92455I$<br>$b=\ 0.724314+0.740370I$ | $-0.80196-8.84500I$ | 0 |
| $u=\ 0.586580+0.439517I$<br>$a=\ 0.87193-2.03254I$<br>$b=\ 1.017320+0.497045I$ | $-6.81632-4.67724I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.586580 - 0.439517I$<br>$a = 0.87193 + 2.03254I$<br>$b = 1.017320 - 0.497045I$ | $-6.81632 + 4.67724I$ | 0 |
| $u = -0.491431 + 0.540049I$<br>$a = -0.486115 - 1.192940I$<br>$b = -1.106500 + 0.760056I$ | $-5.60199 + 6.65769I$ | 0 |
| $u = -0.491431 - 0.540049I$<br>$a = -0.486115 + 1.192940I$<br>$b = -1.106500 - 0.760056I$ | $-5.60199 - 6.65769I$ | 0 |
| $u = 0.749807 + 1.040040I$<br>$a = 0.179131 - 0.036316I$<br>$b = -0.221447 + 0.877552I$ | $1.12746 - 9.87504I$ | 0 |
| $u = 0.749807 - 1.040040I$<br>$a = 0.179131 + 0.036316I$<br>$b = -0.221447 - 0.877552I$ | $1.12746 + 9.87504I$ | 0 |
| $u = -1.211380 + 0.428496I$<br>$a = 1.086930 - 0.170859I$<br>$b = 1.284470 + 0.371708I$ | $-9.29642 + 2.85337I$ | 0 |
| $u = -1.211380 - 0.428496I$<br>$a = 1.086930 + 0.170859I$<br>$b = 1.284470 - 0.371708I$ | $-9.29642 - 2.85337I$ | 0 |
| $u = -1.144490 + 0.596072I$<br>$a = -1.394560 - 0.220003I$<br>$b = -1.58038 + 0.07420I$ | $-11.74990 - 0.76353I$ | 0 |
| $u = -1.144490 - 0.596072I$<br>$a = -1.394560 + 0.220003I$<br>$b = -1.58038 - 0.07420I$ | $-11.74990 + 0.76353I$ | 0 |
| $u = -0.356131 + 0.599507I$<br>$a = -0.781460 + 0.167908I$<br>$b = -0.033703 + 0.651955I$ | $-0.49466 + 1.57044I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.356131-0.599507I$<br>$a=-0.781460-0.167908I$<br>$b=-0.033703-0.651955I$ | $-0.49466-1.57044I$ | 0 |
| $u=1.300980+0.077838I$<br>$a=1.71807-0.61544I$<br>$b=0.703123-0.066080I$ | $-6.24661+1.36052I$ | 0 |
| $u=1.300980-0.077838I$<br>$a=1.71807+0.61544I$<br>$b=0.703123+0.066080I$ | $-6.24661-1.36052I$ | 0 |
| $u=-0.242624+0.642130I$<br>$a=1.233290+0.278528I$<br>$b=-0.314217+0.677082I$ | $2.04033+4.97528I$ | 0 |
| $u=-0.242624-0.642130I$<br>$a=1.233290-0.278528I$<br>$b=-0.314217-0.677082I$ | $2.04033-4.97528I$ | 0 |
| $u=1.114240+0.721512I$<br>$a=-0.777343+0.487861I$<br>$b=-0.708900-1.039380I$ | $-2.69324-4.70021I$ | 0 |
| $u=1.114240-0.721512I$<br>$a=-0.777343-0.487861I$<br>$b=-0.708900+1.039380I$ | $-2.69324+4.70021I$ | 0 |
| $u=1.164070+0.641233I$<br>$a=1.78988-0.01138I$<br>$b=0.833987+0.192797I$ | $0.23188-5.10410I$ | 0 |
| $u=1.164070-0.641233I$<br>$a=1.78988+0.01138I$<br>$b=0.833987-0.192797I$ | $0.23188+5.10410I$ | 0 |
| $u=-1.192820+0.629157I$<br>$a=0.149440-0.304496I$<br>$b=0.213744+1.238980I$ | $0.80140+5.95799I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-1.192820-0.629157I$<br>$a=0.149440+0.304496I$<br>$b=0.213744-1.238980I$ | $0.80140-5.95799I$ | 0 |
| $u=1.275470+0.448096I$<br>$a=1.181370-0.075161I$<br>$b=1.68724-0.11728I$ | $-11.3203-9.1823I$ | 0 |
| $u=1.275470-0.448096I$<br>$a=1.181370+0.075161I$<br>$b=1.68724+0.11728I$ | $-11.3203+9.1823I$ | 0 |
| $u=0.350726+1.320310I$<br>$a=0.567274-1.075350I$<br>$b=0.961762+0.116949I$ | $-5.21579+1.27171I$ | 0 |
| $u=0.350726-1.320310I$<br>$a=0.567274+1.075350I$<br>$b=0.961762-0.116949I$ | $-5.21579-1.27171I$ | 0 |
| $u=0.441729+1.300830I$<br>$a=-0.376778-0.676021I$<br>$b=-0.752920+0.405467I$ | $-4.50061+0.79094I$ | 0 |
| $u=0.441729-1.300830I$<br>$a=-0.376778+0.676021I$<br>$b=-0.752920-0.405467I$ | $-4.50061-0.79094I$ | 0 |
| $u=0.949179+0.994624I$<br>$a=0.013031-0.198535I$<br>$b=-0.225303+0.901007I$ | $-4.70725-7.00555I$ | 0 |
| $u=0.949179-0.994624I$<br>$a=0.013031+0.198535I$<br>$b=-0.225303-0.901007I$ | $-4.70725+7.00555I$ | 0 |
| $u=0.924357+1.038340I$<br>$a=-1.48280+0.68496I$<br>$b=-1.216760-0.294912I$ | $-4.47375-4.32105I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.924357 - 1.038340I$<br>$a = -1.48280 - 0.68496I$<br>$b = -1.216760 + 0.294912I$ | $-4.47375 + 4.32105I$ | 0 |
| $u = 0.496521 + 0.344242I$<br>$a = 0.18871 + 2.28511I$<br>$b = -0.067962 + 0.610939I$ | $-3.99208 - 6.87855I$ | 0 |
| $u = 0.496521 - 0.344242I$<br>$a = 0.18871 - 2.28511I$<br>$b = -0.067962 - 0.610939I$ | $-3.99208 + 6.87855I$ | 0 |
| $u = 0.984378 + 0.990283I$<br>$a = 1.48490 - 0.76569I$<br>$b = 1.241480 + 0.577395I$ | $-2.35966 - 8.78709I$ | 0 |
| $u = 0.984378 - 0.990283I$<br>$a = 1.48490 + 0.76569I$<br>$b = 1.241480 - 0.577395I$ | $-2.35966 + 8.78709I$ | 0 |
| $u = 0.900819 + 1.089060I$<br>$a = -0.097203 - 0.311197I$<br>$b = 0.980159 - 0.955119I$ | $-1.44934 - 2.63226I$ | 0 |
| $u = 0.900819 - 1.089060I$<br>$a = -0.097203 + 0.311197I$<br>$b = 0.980159 + 0.955119I$ | $-1.44934 + 2.63226I$ | 0 |
| $u = -1.111000 + 0.874024I$<br>$a = -1.64601 - 0.18293I$<br>$b = -0.863367 + 0.173694I$ | $0.593140 - 0.837431I$ | 0 |
| $u = -1.111000 - 0.874024I$<br>$a = -1.64601 + 0.18293I$<br>$b = -0.863367 - 0.173694I$ | $0.593140 + 0.837431I$ | 0 |
| $u = 0.511783 + 0.276135I$<br>$a = -2.54957 + 0.54639I$<br>$b = -1.36817 - 0.43861I$ | $-3.85751 - 3.99663I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.511783 - 0.276135I$<br>$a = -2.54957 - 0.54639I$<br>$b = -1.36817 + 0.43861I$ | $-3.85751 + 3.99663I$ | 0 |
| $u = -1.06473 + 0.94908I$<br>$a = 0.1021850 + 0.0108808I$<br>$b = -0.317108 - 1.293180I$ | $-3.8676 + 15.0450I$ | 0 |
| $u = -1.06473 - 0.94908I$<br>$a = 0.1021850 - 0.0108808I$<br>$b = -0.317108 + 1.293180I$ | $-3.8676 - 15.0450I$ | 0 |
| $u = 0.80407 + 1.18759I$<br>$a = -1.077920 + 0.296378I$<br>$b = -0.945234 + 0.268326I$ | $-2.04693 + 1.79819I$ | 0 |
| $u = 0.80407 - 1.18759I$<br>$a = -1.077920 - 0.296378I$<br>$b = -0.945234 - 0.268326I$ | $-2.04693 - 1.79819I$ | 0 |
| $u = 0.41092 + 1.37865I$<br>$a = 0.222568 - 0.079705I$<br>$b = 0.802679 + 0.173569I$ | $-0.81179 - 8.99703I$ | 0 |
| $u = 0.41092 - 1.37865I$<br>$a = 0.222568 + 0.079705I$<br>$b = 0.802679 - 0.173569I$ | $-0.81179 + 8.99703I$ | 0 |
| $u = 0.404967 + 0.373483I$<br>$a = 3.58722 - 1.28827I$<br>$b = 0.902761 - 0.075341I$ | $-5.00701 - 2.05377I$ | 0 |
| $u = 0.404967 - 0.373483I$<br>$a = 3.58722 + 1.28827I$<br>$b = 0.902761 + 0.075341I$ | $-5.00701 + 2.05377I$ | 0 |
| $u = -0.334439 + 0.419804I$<br>$a = 1.312330 + 0.022411I$<br>$b = 1.27683 + 0.65156I$ | $-2.58242 + 5.66926I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.334439-0.419804I$<br>$a=\ 1.312330-0.022411I$<br>$b=\ 1.27683-0.65156I$ | $-2.58242-5.66926I$ | 0 |
| $u=-0.79821+1.23051I$<br>$a=-0.300446-0.001747I$<br>$b=-0.734406-0.513778I$ | $2.44622+0.52569I$ | 0 |
| $u=-0.79821-1.23051I$<br>$a=-0.300446+0.001747I$<br>$b=-0.734406+0.513778I$ | $2.44622-0.52569I$ | 0 |
| $u=-1.28744+0.75136I$<br>$a=\ 1.206900+0.017155I$<br>$b=\ 1.048350+0.384911I$ | $-2.97406-7.34824I$ | 0 |
| $u=-1.28744-0.75136I$<br>$a=\ 1.206900-0.017155I$<br>$b=\ 1.048350-0.384911I$ | $-2.97406+7.34824I$ | 0 |
| $u=-0.99750+1.11240I$<br>$a=-1.38383-0.78354I$<br>$b=-1.239090+0.550472I$ | $-2.0207+15.1691I$ | 0 |
| $u=-0.99750-1.11240I$<br>$a=-1.38383+0.78354I$<br>$b=-1.239090-0.550472I$ | $-2.0207-15.1691I$ | 0 |
| $u=\ 0.051599+0.495913I$<br>$a=-0.89820+3.02702I$<br>$b=\ 0.696414-0.416769I$ | $1.81863+1.79255I$ | 0 |
| $u=\ 0.051599-0.495913I$<br>$a=-0.89820-3.02702I$<br>$b=\ 0.696414+0.416769I$ | $1.81863-1.79255I$ | 0 |
| $u=-1.14035+0.98072I$<br>$a=\ 1.36170+0.41686I$<br>$b=\ 1.286390-0.300749I$ | $-4.29860+9.17115I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-1.14035-0.98072I$<br>$a=\ 1.36170-0.41686I$<br>$b=\ 1.286390+0.300749I$ | $-4.29860-9.17115I$ | 0 |
| $u=-0.411961+0.254783I$<br>$a=\ 2.63464+3.04877I$<br>$b=\ 1.223210-0.485631I$ | $-7.14058-2.43999I$ | 0 |
| $u=-0.411961-0.254783I$<br>$a=\ 2.63464-3.04877I$<br>$b=\ 1.223210+0.485631I$ | $-7.14058+2.43999I$ | 0 |
| $u=\ 0.51517+1.43790I$<br>$a=-0.268703-0.374285I$<br>$b=-0.970630+0.490035I$ | $-4.52126+0.82411I$ | 0 |
| $u=\ 0.51517-1.43790I$<br>$a=-0.268703+0.374285I$<br>$b=-0.970630-0.490035I$ | $-4.52126-0.82411I$ | 0 |
| $u=\ 0.288411+0.364185I$<br>$a=\ 1.82013-0.27949I$<br>$b=\ 1.48449+0.49915I$ | $-0.71442-5.80111I$ | 0 |
| $u=\ 0.288411-0.364185I$<br>$a=\ 1.82013+0.27949I$<br>$b=\ 1.48449-0.49915I$ | $-0.71442+5.80111I$ | 0 |
| $u=\ 0.018399+0.451695I$<br>$a=\ 2.79357+3.49623I$<br>$b=\ 0.442975+0.370091I$ | $-4.17268-6.81527I$ | 0 |
| $u=\ 0.018399-0.451695I$<br>$a=\ 2.79357-3.49623I$<br>$b=\ 0.442975-0.370091I$ | $-4.17268+6.81527I$ | 0 |
| $u=\ 0.422986+0.064738I$<br>$a=-1.75812+3.47289I$<br>$b=\ 0.433240-0.092790I$ | $1.53288-1.93683I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.422986 - 0.064738I$<br>$a = -1.75812 - 3.47289I$<br>$b = 0.433240 + 0.092790I$ | $1.53288 + 1.93683I$ | 0 |
| $u = 0.422642 + 0.017712I$<br>$a = -1.81175 + 0.65238I$<br>$b = -1.38410 - 0.44025I$ | $-3.43796 - 0.85276I$ | $-20.5501 + 7.2770I$ |
| $u = 0.422642 - 0.017712I$<br>$a = -1.81175 - 0.65238I$<br>$b = -1.38410 + 0.44025I$ | $-3.43796 + 0.85276I$ | $-20.5501 - 7.2770I$ |
| $u = -1.08328 + 1.14893I$<br>$a = 1.206760 + 0.707769I$<br>$b = 1.135250 - 0.600805I$ | $1.43118 + 8.24052I$ | 0 |
| $u = -1.08328 - 1.14893I$<br>$a = 1.206760 - 0.707769I$<br>$b = 1.135250 + 0.600805I$ | $1.43118 - 8.24052I$ | 0 |
| $u = -0.415206 + 0.027280I$<br>$a = 6.31775 - 4.01940I$<br>$b = -0.327891 + 0.087046I$ | $-2.12749 - 8.52880I$ | $6.89273 + 0.I$ |
| $u = -0.415206 - 0.027280I$<br>$a = 6.31775 + 4.01940I$<br>$b = -0.327891 - 0.087046I$ | $-2.12749 + 8.52880I$ | $6.89273 + 0.I$ |
| $u = 0.49424 + 1.51764I$<br>$a = -0.214632 + 0.065103I$<br>$b = -0.934609 + 0.149758I$ | $0.47170 + 2.45044I$ | 0 |
| $u = 0.49424 - 1.51764I$<br>$a = -0.214632 - 0.065103I$<br>$b = -0.934609 - 0.149758I$ | $0.47170 - 2.45044I$ | 0 |
| $u = 0.231275 + 0.317769I$<br>$a = 5.65283 - 1.31027I$<br>$b = 0.827298 + 0.191137I$ | $0.87334 - 4.03318I$ | $-2.00000 + 7.97726I$ |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.231275 - 0.317769I$<br>$a = 5.65283 + 1.31027I$<br>$b = 0.827298 - 0.191137I$ | $0.87334 + 4.03318I$ | $-2.00000 - 7.97726I$ |
| $u = 0.376469 + 0.068668I$<br>$a = 2.65686 + 0.35677I$<br>$b = -0.544505 - 0.494974I$ | $-4.67836 + 1.46115I$ | $-8.19948 + 0.I$ |
| $u = 0.376469 - 0.068668I$<br>$a = 2.65686 - 0.35677I$<br>$b = -0.544505 + 0.494974I$ | $-4.67836 - 1.46115I$ | $-8.19948 + 0.I$ |
| $u = 1.35870 + 0.88608I$<br>$a = -0.282403 + 0.077544I$<br>$b = 0.13835 - 1.77117I$ | $-0.76584 - 5.06931I$ | 0 |
| $u = 1.35870 - 0.88608I$<br>$a = -0.282403 - 0.077544I$<br>$b = 0.13835 + 1.77117I$ | $-0.76584 + 5.06931I$ | 0 |
| $u = 0.334173 + 0.170801I$<br>$a = -1.63384 + 1.58675I$<br>$b = -0.987842 - 0.763040I$ | $-1.07900 - 3.08318I$ | $-6.95602 + 6.86916I$ |
| $u = 0.334173 - 0.170801I$<br>$a = -1.63384 - 1.58675I$<br>$b = -0.987842 + 0.763040I$ | $-1.07900 + 3.08318I$ | $-6.95602 - 6.86916I$ |
| $u = -1.19194 + 1.17231I$<br>$a = -1.096720 - 0.625218I$<br>$b = -1.107580 + 0.239050I$ | $-3.86760 - 0.76443I$ | 0 |
| $u = -1.19194 - 1.17231I$<br>$a = -1.096720 + 0.625218I$<br>$b = -1.107580 - 0.239050I$ | $-3.86760 + 0.76443I$ | 0 |
| $u = 1.28506 + 1.07395I$<br>$a = -1.38035 + 0.55966I$<br>$b = -0.930137 - 0.426988I$ | $1.82933 - 4.43364I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 1.28506 - 1.07395I$<br>$a = -1.38035 - 0.55966I$<br>$b = -0.930137 + 0.426988I$ | $1.82933 + 4.43364I$ | 0 |
| $u = 0.322952 + 0.024184I$<br>$a = 0.217338 + 0.478307I$<br>$b = 0.70190 + 1.49734I$ | $-3.23727 + 5.52143I$ | $-39.6829 - 3.6883I$ |
| $u = 0.322952 - 0.024184I$<br>$a = 0.217338 - 0.478307I$<br>$b = 0.70190 - 1.49734I$ | $-3.23727 - 5.52143I$ | $-39.6829 + 3.6883I$ |
| $u = 1.17387 + 1.20470I$<br>$a = -1.178410 + 0.710886I$<br>$b = -1.33869 - 0.70367I$ | $-7.1744 - 22.0288I$ | 0 |
| $u = 1.17387 - 1.20470I$<br>$a = -1.178410 - 0.710886I$<br>$b = -1.33869 + 0.70367I$ | $-7.1744 + 22.0288I$ | 0 |
| $u = -1.16025 + 1.22971I$<br>$a = 1.094970 + 0.730357I$<br>$b = 1.45024 - 0.73662I$ | $-4.95101 + 13.22520I$ | 0 |
| $u = -1.16025 - 1.22971I$<br>$a = 1.094970 - 0.730357I$<br>$b = 1.45024 + 0.73662I$ | $-4.95101 - 13.22520I$ | 0 |
| $u = 0.268103 + 0.138296I$<br>$a = 0.739517 - 0.285375I$<br>$b = -0.565455 - 1.158540I$ | $-2.86146 - 2.76530I$ | $-9.6410 + 15.7974I$ |
| $u = 0.268103 - 0.138296I$<br>$a = 0.739517 + 0.285375I$<br>$b = -0.565455 + 1.158540I$ | $-2.86146 + 2.76530I$ | $-9.6410 - 15.7974I$ |
| $u = -0.63748 + 1.57746I$<br>$a = 0.227163 + 1.027840I$<br>$b = -0.372244 - 1.062920I$ | $-2.71512 - 7.64573I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.63748-1.57746I$<br>$a=\ \ 0.227163-1.027840I$<br>$b=-0.372244+1.062920I$ | $-2.71512+7.64573I$ | 0 |
| $u=\ \ 1.29365+1.12087I$<br>$a=\ \ 1.243560-0.527756I$<br>$b=\ \ 1.258520+0.545587I$ | $-6.74339-11.85900I$ | 0 |
| $u=\ \ 1.29365-1.12087I$<br>$a=\ \ 1.243560+0.527756I$<br>$b=\ \ 1.258520-0.545587I$ | $-6.74339+11.85900I$ | 0 |
| $u=-1.18403+1.24970I$<br>$a=-1.178540-0.704351I$<br>$b=-1.231320+0.571900I$ | $-7.7687+12.4276I$ | 0 |
| $u=-1.18403-1.24970I$<br>$a=-1.178540+0.704351I$<br>$b=-1.231320-0.571900I$ | $-7.7687-12.4276I$ | 0 |
| $u=-0.070030+0.166933I$<br>$a=-11.13840-6.88788I$<br>$b=-0.803848+0.272267I$ | $0.72447-2.52624I$ | $1.92830-3.31742I$ |
| $u=-0.070030-0.166933I$<br>$a=-11.13840+6.88788I$<br>$b=-0.803848-0.272267I$ | $0.72447+2.52624I$ | $1.92830+3.31742I$ |
| $u=-0.87127+1.61950I$<br>$a=\ \ 0.746586+0.709323I$<br>$b=\ \ 1.295760-0.316558I$ | $-8.71492+8.17150I$ | 0 |
| $u=-0.87127-1.61950I$<br>$a=\ \ 0.746586-0.709323I$<br>$b=\ \ 1.295760+0.316558I$ | $-8.71492-8.17150I$ | 0 |
| $u=\ \ 1.43139+1.25692I$<br>$a=\ \ 1.002340-0.497305I$<br>$b=\ \ 1.32751+0.61186I$ | $-2.85815-12.36320I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 1.43139 - 1.25692I$<br>$a = 1.002340 + 0.497305I$<br>$b = 1.32751 - 0.61186I$ | $-2.85815 + 12.36320I$ | 0 |
| $u = 0.0055951 + 0.0382005I$<br>$a = -13.93980 - 0.71648I$<br>$b = -0.425463 + 1.149720I$ | $-0.03206 + 2.08683I$ | $1.60477 + 0.55920I$ |
| $u = 0.0055951 - 0.0382005I$<br>$a = -13.93980 + 0.71648I$<br>$b = -0.425463 - 1.149720I$ | $-0.03206 - 2.08683I$ | $1.60477 - 0.55920I$ |
| $u = -1.78555 + 0.81813I$<br>$a = 1.042670 - 0.063541I$<br>$b = 1.177710 + 0.269970I$ | $-8.99733 - 2.59091I$ | 0 |
| $u = -1.78555 - 0.81813I$<br>$a = 1.042670 + 0.063541I$<br>$b = 1.177710 - 0.269970I$ | $-8.99733 + 2.59091I$ | 0 |
| $u = -1.91420 + 0.85379I$<br>$a = -0.770193 - 0.033529I$<br>$b = -1.52640 - 0.54245I$ | $-6.01707 - 3.44905I$ | 0 |
| $u = -1.91420 - 0.85379I$<br>$a = -0.770193 + 0.033529I$<br>$b = -1.52640 + 0.54245I$ | $-6.01707 + 3.44905I$ | 0 |
| $u = 2.09803 + 0.44581I$<br>$a = -0.907819 + 0.149845I$<br>$b = -1.389030 - 0.143916I$ | $-5.85857 + 0.95537I$ | 0 |
| $u = 2.09803 - 0.44581I$<br>$a = -0.907819 - 0.149845I$<br>$b = -1.389030 + 0.143916I$ | $-5.85857 - 0.95537I$ | 0 |
| $u = 1.76826 + 1.30107I$<br>$a = 0.791422 - 0.037858I$<br>$b = 1.314220 - 0.435181I$ | $-7.6241 + 12.3354I$ | 0 |

| Solutions to $I_1^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 1.76826 - 1.30107I$<br>$a = 0.791422 + 0.037858I$<br>$b = 1.314220 + 0.435181I$ | $-7.6241 - 12.3354I$ | 0 |
| $u = -1.36925 + 1.76897I$<br>$a = -0.738018 - 0.668899I$<br>$b = -1.23103 + 0.82894I$ | $-5.12499 + 5.61769I$ | 0 |
| $u = -1.36925 - 1.76897I$<br>$a = -0.738018 + 0.668899I$<br>$b = -1.23103 - 0.82894I$ | $-5.12499 - 5.61769I$ | 0 |
| $u = -0.38813 + 2.23115I$<br>$a = -0.765659 - 0.330416I$<br>$b = -0.954752 + 0.124007I$ | $-4.58258 + 0.88159I$ | 0 |
| $u = -0.38813 - 2.23115I$<br>$a = -0.765659 + 0.330416I$<br>$b = -0.954752 - 0.124007I$ | $-4.58258 - 0.88159I$ | 0 |
| $u = 1.23708 + 2.24326I$<br>$a = -0.562477 + 0.441210I$<br>$b = -1.55593 - 0.44300I$ | $-6.85720 + 0.60791I$ | 0 |
| $u = 1.23708 - 2.24326I$<br>$a = -0.562477 - 0.441210I$<br>$b = -1.55593 + 0.44300I$ | $-6.85720 - 0.60791I$ | 0 |
| $u = -2.83234 + 0.76328I$<br>$a = -1.226790 - 0.096261I$<br>$b = -0.847037 + 0.017028I$ | $-4.61790 + 0.14975I$ | 0 |
| $u = -2.83234 - 0.76328I$<br>$a = -1.226790 + 0.096261I$<br>$b = -0.847037 - 0.017028I$ | $-4.61790 - 0.14975I$ | 0 |

**II. $I_2^u = \langle 1.17 \times 10^{183} u^{59} - 5.88 \times 10^{183} u^{58} + \cdots + 1.06 \times 10^{184} b + 6.01 \times 10^{183},\ -1.29 \times 10^{183} u^{59} + 6.70 \times 10^{183} u^{58} + \cdots + 1.06 \times 10^{184} a + 2.99 \times 10^{184},\ u^{60} - 5u^{59} + \cdots - 2u + 1 \rangle$**

**(i) Arc colorings**

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

$$a_8 = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$a_9 = \begin{pmatrix} 1 \\ u^2 \end{pmatrix}$$

$$a_{11} = \begin{pmatrix} 0.121567u^{59} - 0.630365u^{58} + \cdots + 0.257863u - 2.80969 \\ -0.110554u^{59} + 0.553273u^{58} + \cdots - 5.12053u - 0.565417 \end{pmatrix}$$

$$a_{12} = \begin{pmatrix} 0.232121u^{59} - 1.18364u^{58} + \cdots + 5.37839u - 2.24427 \\ -0.110554u^{59} + 0.553273u^{58} + \cdots - 5.12053u - 0.565417 \end{pmatrix}$$

$$a_7 = \begin{pmatrix} -0.251982u^{59} + 1.26786u^{58} + \cdots - 13.0230u - 0.946991 \\ -0.115915u^{59} + 0.613594u^{58} + \cdots - 8.33385u + 0.579084 \end{pmatrix}$$

$$a_4 = \begin{pmatrix} 0.0448519u^{59} - 0.322238u^{58} + \cdots + 3.23579u + 0.337461 \\ 0.0183401u^{59} - 0.167218u^{58} + \cdots + 4.77207u - 0.326633 \end{pmatrix}$$

$$a_6 = \begin{pmatrix} -0.144689u^{59} + 0.691837u^{58} + \cdots - 4.42124u - 1.53402 \\ -0.115082u^{59} + 0.614514u^{58} + \cdots - 8.52026u + 0.618642 \end{pmatrix}$$

$$a_2 = \begin{pmatrix} -0.112394u^{59} + 0.552273u^{58} + \cdots - 2.65457u + 0.598674 \\ 0.0632461u^{59} - 0.351078u^{58} + \cdots + 2.97049u + 0.173094 \end{pmatrix}$$

$$a_{10} = \begin{pmatrix} -0.146986u^{59} + 0.741280u^{58} + \cdots - 0.913095u + 0.924393 \\ -0.0939558u^{59} + 0.503192u^{58} + \cdots - 3.03735u + 0.728603 \end{pmatrix}$$

$$a_1 = \begin{pmatrix} 0.212462u^{59} - 0.938768u^{58} + \cdots - 2.47338u - 1.69518 \\ 0.0834050u^{59} - 0.373831u^{58} + \cdots - 2.58527u - 0.617122 \end{pmatrix}$$

$$a_5 = \begin{pmatrix} -0.000386417u^{59} - 0.0446264u^{58} + \cdots + 1.94209u + 0.962014 \\ -0.100661u^{59} + 0.469098u^{58} + \cdots + 0.0231930u - 0.125135 \end{pmatrix}$$

**(ii) Obstruction class** $= 1$

**(iii) Cusp Shapes** $= -1.69323u^{59} + 8.90146u^{58} + \cdots - 62.4836u + 2.34825$

**(iv) u-Polynomials at the component**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $u^{60} - 17u^{59} + \cdots + 2u + 1$ |
| $c_2$ | $u^{60} - u^{59} + \cdots + 2u + 1$ |
| $c_3$ | $u^{60} - 5u^{59} + \cdots - 66u + 13$ |
| $c_4$ | $u^{60} + 4u^{59} + \cdots - u + 1$ |
| $c_5$ | $u^{60} + 27u^{58} + \cdots + 53u^2 + 1$ |
| $c_6$ | $u^{60} + 5u^{59} + \cdots + 3u + 1$ |
| $c_7$ | $u^{60} - 3u^{59} + \cdots + u + 1$ |
| $c_8$ | $u^{60} - 5u^{59} + \cdots - 2u + 1$ |
| $c_9$ | $u^{60} - 5u^{59} + \cdots - 7u + 1$ |
| $c_{10}$ | $u^{60} - 14u^{59} + \cdots - 2u + 1$ |
| $c_{11}$ | $u^{60} + 3u^{59} + \cdots - u + 1$ |
| $c_{12}$ | $u^{60} + 27u^{58} + \cdots + 53u^2 + 1$ |

**(v) Riley Polynomials at the component**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $y^{60}+3y^{59}+\cdots+12y+1$ |
| $c_2$ | $y^{60}+25y^{59}+\cdots+30y+1$ |
| $c_3$ | $y^{60}+25y^{59}+\cdots-300y+169$ |
| $c_4$ | $y^{60}-10y^{59}+\cdots-43y+1$ |
| $c_5, c_{12}$ | $y^{60}+54y^{59}+\cdots+106y+1$ |
| $c_6$ | $y^{60}+11y^{59}+\cdots+35y+1$ |
| $c_7, c_{11}$ | $y^{60}-29y^{59}+\cdots-55y+1$ |
| $c_8$ | $y^{60}-3y^{59}+\cdots+40y+1$ |
| $c_9$ | $y^{60}+27y^{59}+\cdots+67y+1$ |
| $c_{10}$ | $y^{60}-16y^{59}+\cdots-16y+1$ |

**(vi) Complex Volumes and Cusp Shapes**

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.731730 + 0.676367I$<br>$a = -2.12054 + 0.41836I$<br>$b = -1.244870 - 0.231631I$ | $-6.70946 - 5.84589I$ | $2.90093 + 9.28141I$ |
| $u = 0.731730 - 0.676367I$<br>$a = -2.12054 - 0.41836I$<br>$b = -1.244870 + 0.231631I$ | $-6.70946 + 5.84589I$ | $2.90093 - 9.28141I$ |
| $u = -0.383677 + 0.978825I$<br>$a = 0.900205 - 0.281177I$<br>$b = -0.726249 + 0.060266I$ | $-4.14811 + 5.12809I$ | $-9.0993 + 13.6747I$ |
| $u = -0.383677 - 0.978825I$<br>$a = 0.900205 + 0.281177I$<br>$b = -0.726249 - 0.060266I$ | $-4.14811 - 5.12809I$ | $-9.0993 - 13.6747I$ |
| $u = -0.470936 + 0.819275I$<br>$a = 0.395337 - 0.100565I$<br>$b = 0.205954 - 0.879960I$ | $-0.08198 + 2.97739I$ | $-2.93488 - 6.71135I$ |
| $u = -0.470936 - 0.819275I$<br>$a = 0.395337 + 0.100565I$<br>$b = 0.205954 + 0.879960I$ | $-0.08198 - 2.97739I$ | $-2.93488 + 6.71135I$ |
| $u = 0.751406 + 0.523993I$<br>$a = 1.308320 - 0.405169I$<br>$b = 1.191740 - 0.011686I$ | $-2.98008 + 0.25858I$ | $-7.59712 - 3.27117I$ |
| $u = 0.751406 - 0.523993I$<br>$a = 1.308320 + 0.405169I$<br>$b = 1.191740 + 0.011686I$ | $-2.98008 - 0.25858I$ | $-7.59712 + 3.27117I$ |
| $u = -1.097130 + 0.145531I$<br>$a = 0.982430 + 0.295728I$<br>$b = 1.39272 - 0.35306I$ | $-7.52112 - 1.33982I$ | $9.97881 + 2.88727I$ |
| $u = -1.097130 - 0.145531I$<br>$a = 0.982430 - 0.295728I$<br>$b = 1.39272 + 0.35306I$ | $-7.52112 + 1.33982I$ | $9.97881 - 2.88727I$ |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.761335 + 0.424930I$<br>$a = 1.46387 - 0.51262I$<br>$b = 1.35828 + 0.69710I$ | $-4.39791 - 4.66369I$ | $-4.03422 + 1.62939I$ |
| $u = 0.761335 - 0.424930I$<br>$a = 1.46387 + 0.51262I$<br>$b = 1.35828 - 0.69710I$ | $-4.39791 + 4.66369I$ | $-4.03422 - 1.62939I$ |
| $u = -0.548313 + 0.673892I$<br>$a = 0.08852 + 1.74358I$<br>$b = 0.612735 - 0.225113I$ | $1.46546 + 2.73490I$ | $2.08992 - 6.61589I$ |
| $u = -0.548313 - 0.673892I$<br>$a = 0.08852 - 1.74358I$<br>$b = 0.612735 + 0.225113I$ | $1.46546 - 2.73490I$ | $2.08992 + 6.61589I$ |
| $u = 0.481780 + 0.676787I$<br>$a = -0.054262 - 0.984085I$<br>$b = 0.919570 + 0.653607I$ | $-5.14682 - 6.75162I$ | $-3.35141 + 13.09581I$ |
| $u = 0.481780 - 0.676787I$<br>$a = -0.054262 + 0.984085I$<br>$b = 0.919570 - 0.653607I$ | $-5.14682 + 6.75162I$ | $-3.35141 - 13.09581I$ |
| $u = -0.194909 + 0.776979I$<br>$a = 0.381386 - 0.024748I$<br>$b = 0.635089 - 0.818653I$ | $0.00958 + 3.02884I$ | $0.71094 - 5.19051I$ |
| $u = -0.194909 - 0.776979I$<br>$a = 0.381386 + 0.024748I$<br>$b = 0.635089 + 0.818653I$ | $0.00958 - 3.02884I$ | $0.71094 + 5.19051I$ |
| $u = 0.790700 + 0.923889I$<br>$a = 1.22043 - 0.93308I$<br>$b = 1.200080 + 0.597664I$ | $-4.74631 - 4.87413I$ | 0 |
| $u = 0.790700 - 0.923889I$<br>$a = 1.22043 + 0.93308I$<br>$b = 1.200080 - 0.597664I$ | $-4.74631 + 4.87413I$ | 0 |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.439423+0.638563I$<br>$a=\ \ 0.45197-2.19123I$<br>$b=-0.782616-0.261764I$ | $0.65593+3.19145I$ | $1.52659-8.49110I$ |
| $u=-0.439423-0.638563I$<br>$a=\ \ 0.45197+2.19123I$<br>$b=-0.782616+0.261764I$ | $0.65593-3.19145I$ | $1.52659+8.49110I$ |
| $u=-0.726330+0.253130I$<br>$a=-1.40984-1.34821I$<br>$b=-1.250360-0.457362I$ | $-6.47871-11.14530I$ | $-5.10342+8.31313I$ |
| $u=-0.726330-0.253130I$<br>$a=-1.40984+1.34821I$<br>$b=-1.250360+0.457362I$ | $-6.47871+11.14530I$ | $-5.10342-8.31313I$ |
| $u=-0.039775+0.765074I$<br>$a=-1.78815-0.57716I$<br>$b=\ \ 0.610936-0.151606I$ | $1.59348+3.45910I$ | $4.47704-4.53722I$ |
| $u=-0.039775-0.765074I$<br>$a=-1.78815+0.57716I$<br>$b=\ \ 0.610936+0.151606I$ | $1.59348-3.45910I$ | $4.47704+4.53722I$ |
| $u=\ \ 0.549064+1.131790I$<br>$a=\ \ 0.705466-0.330527I$<br>$b=\ \ 0.393731-0.153498I$ | $1.61636+1.86430I$ | $0$ |
| $u=\ \ 0.549064-1.131790I$<br>$a=\ \ 0.705466+0.330527I$<br>$b=\ \ 0.393731+0.153498I$ | $1.61636-1.86430I$ | $0$ |
| $u=-0.590797+1.117570I$<br>$a=\ \ 0.392837-0.334861I$<br>$b=-0.953319-0.689017I$ | $0.71738+2.72811I$ | $0$ |
| $u=-0.590797-1.117570I$<br>$a=\ \ 0.392837+0.334861I$<br>$b=-0.953319+0.689017I$ | $0.71738-2.72811I$ | $0$ |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u=-0.556616+0.440634I$<br>$a=-0.827246+0.645841I$<br>$b=\ \ 0.166278-0.836782I$ | $1.99883+3.87427I$ | $2.63144-3.57408I$ |
| $u=-0.556616-0.440634I$<br>$a=-0.827246-0.645841I$<br>$b=\ \ 0.166278+0.836782I$ | $1.99883-3.87427I$ | $2.63144+3.57408I$ |
| $u=\ \ 0.998819+0.818430I$<br>$a=-1.64252+0.69495I$<br>$b=-0.984772-0.611016I$ | $0.22883-7.41071I$ | 0 |
| $u=\ \ 0.998819-0.818430I$<br>$a=-1.64252-0.69495I$<br>$b=-0.984772+0.611016I$ | $0.22883+7.41071I$ | 0 |
| $u=-1.281230+0.173153I$<br>$a=-1.99530+0.09834I$<br>$b=-0.734861+0.253842I$ | $-6.18680-0.46889I$ | 0 |
| $u=-1.281230-0.173153I$<br>$a=-1.99530-0.09834I$<br>$b=-0.734861-0.253842I$ | $-6.18680+0.46889I$ | 0 |
| $u=\ \ 1.258120+0.363818I$<br>$a=-1.126510+0.519407I$<br>$b=-1.058990+0.339218I$ | $-7.49858+3.04558I$ | 0 |
| $u=\ \ 1.258120-0.363818I$<br>$a=-1.126510-0.519407I$<br>$b=-1.058990-0.339218I$ | $-7.49858-3.04558I$ | 0 |
| $u=\ \ 0.541767+1.254590I$<br>$a=-0.464971-0.145269I$<br>$b=-0.370991-0.004408I$ | $-0.24058-8.51869I$ | 0 |
| $u=\ \ 0.541767-1.254590I$<br>$a=-0.464971+0.145269I$<br>$b=-0.370991+0.004408I$ | $-0.24058+8.51869I$ | 0 |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.610541 + 0.151672I$<br>$a = -3.77174 + 4.14355I$<br>$b = -0.495954 - 0.051383I$ | $-2.33487 - 8.68372I$ | $-17.7954 + 16.8659I$ |
| $u = 0.610541 - 0.151672I$<br>$a = -3.77174 - 4.14355I$<br>$b = -0.495954 + 0.051383I$ | $-2.33487 + 8.68372I$ | $-17.7954 - 16.8659I$ |
| $u = -0.583074 + 0.142721I$<br>$a = 0.779221 - 0.372707I$<br>$b = 0.819548 + 0.972596I$ | $-3.00333 - 2.34035I$ | $-15.0591 - 0.0627I$ |
| $u = -0.583074 - 0.142721I$<br>$a = 0.779221 + 0.372707I$<br>$b = 0.819548 - 0.972596I$ | $-3.00333 + 2.34035I$ | $-15.0591 + 0.0627I$ |
| $u = -0.241335 + 1.383220I$<br>$a = 0.29093 + 1.53604I$<br>$b = 0.623018 - 0.886555I$ | $-2.98567 + 7.14494I$ | 0 |
| $u = -0.241335 - 1.383220I$<br>$a = 0.29093 - 1.53604I$<br>$b = 0.623018 + 0.886555I$ | $-2.98567 - 7.14494I$ | 0 |
| $u = 1.33349 + 0.78917I$<br>$a = 0.265036 - 0.146740I$<br>$b = -0.01191 + 1.63539I$ | $-0.98366 - 5.04416I$ | 0 |
| $u = 1.33349 - 0.78917I$<br>$a = 0.265036 + 0.146740I$<br>$b = -0.01191 - 1.63539I$ | $-0.98366 + 5.04416I$ | 0 |
| $u = 0.59649 + 1.50222I$<br>$a = 0.755747 - 0.865035I$<br>$b = 1.005560 + 0.290416I$ | $-4.48368 + 0.27359I$ | 0 |
| $u = 0.59649 - 1.50222I$<br>$a = 0.755747 + 0.865035I$<br>$b = 1.005560 - 0.290416I$ | $-4.48368 - 0.27359I$ | 0 |

| Solutions to $I_2^u$ | $\sqrt{-1}(\mathrm{vol}+\sqrt{-1}CS)$ | Cusp shape |
|---|---|---|
| $u = 0.257263 + 0.184039I$<br>$a = -3.43725 - 0.18490I$<br>$b = -1.236960 - 0.436653I$ | $-0.80077 - 5.45644I$ | $-4.67556 + 2.83152I$ |
| $u = 0.257263 - 0.184039I$<br>$a = -3.43725 + 0.18490I$<br>$b = -1.236960 + 0.436653I$ | $-0.80077 + 5.45644I$ | $-4.67556 - 2.83152I$ |
| $u = -1.23666 + 1.20361I$<br>$a = -1.148980 - 0.600727I$<br>$b = -1.33219 + 0.55807I$ | $-5.45783 + 11.79900I$ | 0 |
| $u = -1.23666 - 1.20361I$<br>$a = -1.148980 + 0.600727I$<br>$b = -1.33219 - 0.55807I$ | $-5.45783 - 11.79900I$ | 0 |
| $u = -0.014539 + 0.196356I$<br>$a = -2.57273 + 0.15207I$<br>$b = -0.787454 - 1.134290I$ | $-3.06006 + 5.59875I$ | $-1.4848 - 15.3280I$ |
| $u = -0.014539 - 0.196356I$<br>$a = -2.57273 - 0.15207I$<br>$b = -0.787454 + 1.134290I$ | $-3.06006 - 5.59875I$ | $-1.4848 + 15.3280I$ |
| $u = -1.56827 + 1.37903I$<br>$a = 0.827096 + 0.479442I$<br>$b = 1.43230 - 0.35095I$ | $-6.57515 - 0.89106I$ | 0 |
| $u = -1.56827 - 1.37903I$<br>$a = 0.827096 - 0.479442I$<br>$b = 1.43230 + 0.35095I$ | $-6.57515 + 0.89106I$ | 0 |
| $u = 2.81051 + 2.15096I$<br>$a = 1.151240 - 0.153666I$<br>$b = 0.903960 + 0.064250I$ | $-4.71109 - 0.17990I$ | 0 |
| $u = 2.81051 - 2.15096I$<br>$a = 1.151240 + 0.153666I$<br>$b = 0.903960 - 0.064250I$ | $-4.71109 + 0.17990I$ | 0 |

**III. u-Polynomials**

| Crossings | u-Polynomials at each crossing |
|---|---|
| $c_1$ | $(u^{60}-17u^{59}+\cdots+2u+1)(u^{209}+16u^{208}+\cdots-229u+7)$ |
| $c_2$ | $(u^{60}-u^{59}+\cdots+2u+1)(u^{209}+20u^{207}+\cdots+1001187u+56817)$ |
| $c_3$ | $(u^{60}-5u^{59}+\cdots-66u+13)$ $\cdot(u^{209}+8u^{208}+\cdots+10140313539u-1878370717)$ |
| $c_4$ | $(u^{60}+4u^{59}+\cdots-u+1)(u^{209}-5u^{208}+\cdots+4624338u-184123)$ |
| $c_5$ | $(u^{60}+27u^{58}+\cdots+53u^2+1)$ $\cdot(u^{209}+u^{208}+\cdots+4331046357u+113222443)$ |
| $c_6$ | $(u^{60}+5u^{59}+\cdots+3u+1)(u^{209}+16u^{208}+\cdots+12u+1)$ |
| $c_7$ | $(u^{60}-3u^{59}+\cdots+u+1)(u^{209}+4u^{208}+\cdots+2657560u+2311849)$ |
| $c_8$ | $(u^{60}-5u^{59}+\cdots-2u+1)(u^{209}+4u^{208}+\cdots-29u+1)$ |
| $c_9$ | $(u^{60}-5u^{59}+\cdots-7u+1)$ $\cdot(u^{209}+45u^{207}+\cdots+739402858830u+26116631329)$ |
| $c_{10}$ | $(u^{60}-14u^{59}+\cdots-2u+1)(u^{209}-7u^{208}+\cdots-17609u+341)$ |
| $c_{11}$ | $(u^{60}+3u^{59}+\cdots-u+1)(u^{209}+4u^{208}+\cdots+2657560u+2311849)$ |
| $c_{12}$ | $(u^{60}+27u^{58}+\cdots+53u^2+1)$ $\cdot(u^{209}+u^{208}+\cdots+4331046357u+113222443)$ |

**IV. Riley Polynomials**

| Crossings | Riley Polynomials at each crossing |
|---|---|
| $c_1$ | $(y^{60}+3y^{59}+\cdots+12y+1)(y^{209}-2y^{208}+\cdots-6625y-49)$ |
| $c_2$ | $(y^{60}+25y^{59}+\cdots+30y+1)$ $\cdot(y^{209}+40y^{208}+\cdots-266988642255y-3228171489)$ |
| $c_3$ | $(y^{60}+25y^{59}+\cdots-300y+169)$ $\cdot(y^{209}-8y^{208}+\cdots+2.14\times10^{20}y-3.53\times10^{18})$ |
| $c_4$ | $(y^{60}-10y^{59}+\cdots-43y+1)$ $\cdot(y^{209}-47y^{208}+\cdots+8724659978546y-33901279129)$ |
| $c_5, c_{12}$ | $(y^{60}+54y^{59}+\cdots+106y+1)$ $\cdot(y^{209}+165y^{208}+\cdots+833905590647922 01y-12819321598888249)$ |
| $c_6$ | $(y^{60}+11y^{59}+\cdots+35y+1)(y^{209}+30y^{208}+\cdots-56y-1)$ |
| $c_7, c_{11}$ | $(y^{60}-29y^{59}+\cdots-55y+1)$ $\cdot(y^{209}-118y^{208}+\cdots+340566951866202y-5344645798801)$ |
| $c_8$ | $(y^{60}-3y^{59}+\cdots+40y+1)(y^{209}-8y^{208}+\cdots-1269y-1)$ |
| $c_9$ | $(y^{60}+27y^{59}+\cdots+67y+1)$ $\cdot(y^{209}+90y^{208}+\cdots-4.99\times10^{22}y-6.82\times10^{20})$ |
| $c_{10}$ | $(y^{60}-16y^{59}+\cdots-16y+1)$ $\cdot(y^{209}-37y^{208}+\cdots+35347503y-116281)$ |