Rank-74051 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^2 X_3 + X_1^2 X_2 + X_0 X_3^2 + X_0 X_1 X_2 = 0$$

(0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1090785349

General information

Number of lines	10
Number of points	4353
Number of singular points	1
Number of Eckardt points	2
Number of double points	9
Number of single points	621
Number of points off lines	3720
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^{10}
Type of lines on points	$5, 3^2, 2^9, 1^{621}, 0^{3720}$

Singular Points

The surface has 1 singular points:

$0: P_2 = \mathbf{P}(0,0,1,0) = \mathbf{P}(0,0,1,0)$

The 10 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \mathbf{Pl}(1,0,0,0,0,0)_0$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \mathbf{Pl}(0,0,1,0,0,0)_2$$

$$\ell_2 = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{8257} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{8257} = \mathbf{Pl}(0,0,1,0,0,1)_{270528}$$

$$\ell_3 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \mathbf{Pl}(0,0,0,1,0,0)_{129}$$

$$\ell_4 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \mathbf{Pl}(1,0,0,1,0,0)_{130}$$

$$\ell_5 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \mathbf{Pl}(0,1,0,0,0,0)_1$$

$$\ell_6 = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{274561} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{274561} = \mathbf{Pl}(0,1,1,0,0,1)_{270592}$$

$$\ell_7 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \mathbf{Pl}(0,1,1,0,0,0)_{66}$$

$$\ell_8 = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \mathbf{Pl}(1,1,0,0,1,1)_{536577}$$

$$\ell_9 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \mathbf{Pl}(1,1,0,1,1,1)_{540609}$$

Rank of lines: (0, 4096, 8257, 17043520, 266304, 17047616, 274561, 270400, 4225, 270529)
Rank of points on Klein quadric: (0, 2, 270528, 129, 130, 1, 270592, 66, 536577, 540609)

Eckardt Points

The surface has 2 Eckardt points:
$0 : P_1 = \mathbf{P}(0,1,0,0) = \mathbf{P}(0,1,0,0)$,
$1 : P_{4226} = \mathbf{P}(0,1,0,1) = \mathbf{P}(0,1,0,1)$.

Double Points

The surface has 9 Double points:
The double points on the surface are:

$P_0 = (1,0,0,0) = \ell_0 \cap \ell_1$ $P_{4227} = (1,1,0,1) = \ell_4 \cap \ell_6$
$P_5 = (1,1,0,0) = \ell_0 \cap \ell_2$ $P_{4163} = (1,0,0,1) = \ell_4 \cap \ell_7$
$P_{68} = (1,0,1,0) = \ell_1 \cap \ell_8$ $P_4 = (1,1,1,1) = \ell_6 \cap \ell_8$
$P_{132} = (1,1,1,0) = \ell_2 \cap \ell_9$ $P_{8259} = (1,0,1,1) = \ell_7 \cap \ell_9$
$P_3 = (0,0,0,1) = \ell_3 \cap \ell_5$

Single Points

The surface has 621 single points:
The single points on the surface are:

$0 : P_6 = (2, 1, 0, 0)$ lies on line ℓ_0
$1 : P_7 = (3, 1, 0, 0)$ lies on line ℓ_0
$2 : P_8 = (4, 1, 0, 0)$ lies on line ℓ_0
$3 : P_9 = (5, 1, 0, 0)$ lies on line ℓ_0
$4 : P_{10} = (6, 1, 0, 0)$ lies on line ℓ_0
$5 : P_{11} = (7, 1, 0, 0)$ lies on line ℓ_0
$6 : P_{12} = (8, 1, 0, 0)$ lies on line ℓ_0
$7 : P_{13} = (9, 1, 0, 0)$ lies on line ℓ_0
$8 : P_{14} = (10, 1, 0, 0)$ lies on line ℓ_0
$9 : P_{15} = (11, 1, 0, 0)$ lies on line ℓ_0
$10 : P_{16} = (12, 1, 0, 0)$ lies on line ℓ_0
$11 : P_{17} = (13, 1, 0, 0)$ lies on line ℓ_0
$12 : P_{18} = (14, 1, 0, 0)$ lies on line ℓ_0
$13 : P_{19} = (15, 1, 0, 0)$ lies on line ℓ_0
$14 : P_{20} = (16, 1, 0, 0)$ lies on line ℓ_0
$15 : P_{21} = (17, 1, 0, 0)$ lies on line ℓ_0
$16 : P_{22} = (18, 1, 0, 0)$ lies on line ℓ_0
$17 : P_{23} = (19, 1, 0, 0)$ lies on line ℓ_0
$18 : P_{24} = (20, 1, 0, 0)$ lies on line ℓ_0
$19 : P_{25} = (21, 1, 0, 0)$ lies on line ℓ_0
$20 : P_{26} = (22, 1, 0, 0)$ lies on line ℓ_0
$21 : P_{27} = (23, 1, 0, 0)$ lies on line ℓ_0
$22 : P_{28} = (24, 1, 0, 0)$ lies on line ℓ_0
$23 : P_{29} = (25, 1, 0, 0)$ lies on line ℓ_0
$24 : P_{30} = (26, 1, 0, 0)$ lies on line ℓ_0
$25 : P_{31} = (27, 1, 0, 0)$ lies on line ℓ_0
$26 : P_{32} = (28, 1, 0, 0)$ lies on line ℓ_0
$27 : P_{33} = (29, 1, 0, 0)$ lies on line ℓ_0
$28 : P_{34} = (30, 1, 0, 0)$ lies on line ℓ_0
$29 : P_{35} = (31, 1, 0, 0)$ lies on line ℓ_0
$30 : P_{36} = (32, 1, 0, 0)$ lies on line ℓ_0
$31 : P_{37} = (33, 1, 0, 0)$ lies on line ℓ_0
$32 : P_{38} = (34, 1, 0, 0)$ lies on line ℓ_0
$33 : P_{39} = (35, 1, 0, 0)$ lies on line ℓ_0
$34 : P_{40} = (36, 1, 0, 0)$ lies on line ℓ_0
$35 : P_{41} = (37, 1, 0, 0)$ lies on line ℓ_0
$36 : P_{42} = (38, 1, 0, 0)$ lies on line ℓ_0
$37 : P_{43} = (39, 1, 0, 0)$ lies on line ℓ_0
$38 : P_{44} = (40, 1, 0, 0)$ lies on line ℓ_0
$39 : P_{45} = (41, 1, 0, 0)$ lies on line ℓ_0
$40 : P_{46} = (42, 1, 0, 0)$ lies on line ℓ_0
$41 : P_{47} = (43, 1, 0, 0)$ lies on line ℓ_0
$42 : P_{48} = (44, 1, 0, 0)$ lies on line ℓ_0
$43 : P_{49} = (45, 1, 0, 0)$ lies on line ℓ_0
$44 : P_{50} = (46, 1, 0, 0)$ lies on line ℓ_0
$45 : P_{51} = (47, 1, 0, 0)$ lies on line ℓ_0
$46 : P_{52} = (48, 1, 0, 0)$ lies on line ℓ_0
$47 : P_{53} = (49, 1, 0, 0)$ lies on line ℓ_0
$48 : P_{54} = (50, 1, 0, 0)$ lies on line ℓ_0
$49 : P_{55} = (51, 1, 0, 0)$ lies on line ℓ_0
$50 : P_{56} = (52, 1, 0, 0)$ lies on line ℓ_0
$51 : P_{57} = (53, 1, 0, 0)$ lies on line ℓ_0
$52 : P_{58} = (54, 1, 0, 0)$ lies on line ℓ_0
$53 : P_{59} = (55, 1, 0, 0)$ lies on line ℓ_0

$54 : P_{60} = (56, 1, 0, 0)$ lies on line ℓ_0
$55 : P_{61} = (57, 1, 0, 0)$ lies on line ℓ_0
$56 : P_{62} = (58, 1, 0, 0)$ lies on line ℓ_0
$57 : P_{63} = (59, 1, 0, 0)$ lies on line ℓ_0
$58 : P_{64} = (60, 1, 0, 0)$ lies on line ℓ_0
$59 : P_{65} = (61, 1, 0, 0)$ lies on line ℓ_0
$60 : P_{66} = (62, 1, 0, 0)$ lies on line ℓ_0
$61 : P_{67} = (63, 1, 0, 0)$ lies on line ℓ_0
$62 : P_{69} = (2, 0, 1, 0)$ lies on line ℓ_1
$63 : P_{70} = (3, 0, 1, 0)$ lies on line ℓ_1
$64 : P_{71} = (4, 0, 1, 0)$ lies on line ℓ_1
$65 : P_{72} = (5, 0, 1, 0)$ lies on line ℓ_1
$66 : P_{73} = (6, 0, 1, 0)$ lies on line ℓ_1
$67 : P_{74} = (7, 0, 1, 0)$ lies on line ℓ_1
$68 : P_{75} = (8, 0, 1, 0)$ lies on line ℓ_1
$69 : P_{76} = (9, 0, 1, 0)$ lies on line ℓ_1
$70 : P_{77} = (10, 0, 1, 0)$ lies on line ℓ_1
$71 : P_{78} = (11, 0, 1, 0)$ lies on line ℓ_1
$72 : P_{79} = (12, 0, 1, 0)$ lies on line ℓ_1
$73 : P_{80} = (13, 0, 1, 0)$ lies on line ℓ_1
$74 : P_{81} = (14, 0, 1, 0)$ lies on line ℓ_1
$75 : P_{82} = (15, 0, 1, 0)$ lies on line ℓ_1
$76 : P_{83} = (16, 0, 1, 0)$ lies on line ℓ_1
$77 : P_{84} = (17, 0, 1, 0)$ lies on line ℓ_1
$78 : P_{85} = (18, 0, 1, 0)$ lies on line ℓ_1
$79 : P_{86} = (19, 0, 1, 0)$ lies on line ℓ_1
$80 : P_{87} = (20, 0, 1, 0)$ lies on line ℓ_1
$81 : P_{88} = (21, 0, 1, 0)$ lies on line ℓ_1
$82 : P_{89} = (22, 0, 1, 0)$ lies on line ℓ_1
$83 : P_{90} = (23, 0, 1, 0)$ lies on line ℓ_1
$84 : P_{91} = (24, 0, 1, 0)$ lies on line ℓ_1
$85 : P_{92} = (25, 0, 1, 0)$ lies on line ℓ_1
$86 : P_{93} = (26, 0, 1, 0)$ lies on line ℓ_1
$87 : P_{94} = (27, 0, 1, 0)$ lies on line ℓ_1
$88 : P_{95} = (28, 0, 1, 0)$ lies on line ℓ_1
$89 : P_{96} = (29, 0, 1, 0)$ lies on line ℓ_1
$90 : P_{97} = (30, 0, 1, 0)$ lies on line ℓ_1
$91 : P_{98} = (31, 0, 1, 0)$ lies on line ℓ_1
$92 : P_{99} = (32, 0, 1, 0)$ lies on line ℓ_1
$93 : P_{100} = (33, 0, 1, 0)$ lies on line ℓ_1
$94 : P_{101} = (34, 0, 1, 0)$ lies on line ℓ_1
$95 : P_{102} = (35, 0, 1, 0)$ lies on line ℓ_1
$96 : P_{103} = (36, 0, 1, 0)$ lies on line ℓ_1
$97 : P_{104} = (37, 0, 1, 0)$ lies on line ℓ_1
$98 : P_{105} = (38, 0, 1, 0)$ lies on line ℓ_1
$99 : P_{106} = (39, 0, 1, 0)$ lies on line ℓ_1
$100 : P_{107} = (40, 0, 1, 0)$ lies on line ℓ_1
$101 : P_{108} = (41, 0, 1, 0)$ lies on line ℓ_1
$102 : P_{109} = (42, 0, 1, 0)$ lies on line ℓ_1
$103 : P_{110} = (43, 0, 1, 0)$ lies on line ℓ_1
$104 : P_{111} = (44, 0, 1, 0)$ lies on line ℓ_1
$105 : P_{112} = (45, 0, 1, 0)$ lies on line ℓ_1
$106 : P_{113} = (46, 0, 1, 0)$ lies on line ℓ_1
$107 : P_{114} = (47, 0, 1, 0)$ lies on line ℓ_1

$108 : P_{115} = (48, 0, 1, 0)$ lies on line ℓ_1
$109 : P_{116} = (49, 0, 1, 0)$ lies on line ℓ_1
$110 : P_{117} = (50, 0, 1, 0)$ lies on line ℓ_1
$111 : P_{118} = (51, 0, 1, 0)$ lies on line ℓ_1
$112 : P_{119} = (52, 0, 1, 0)$ lies on line ℓ_1
$113 : P_{120} = (53, 0, 1, 0)$ lies on line ℓ_1
$114 : P_{121} = (54, 0, 1, 0)$ lies on line ℓ_1
$115 : P_{122} = (55, 0, 1, 0)$ lies on line ℓ_1
$116 : P_{123} = (56, 0, 1, 0)$ lies on line ℓ_1
$117 : P_{124} = (57, 0, 1, 0)$ lies on line ℓ_1
$118 : P_{125} = (58, 0, 1, 0)$ lies on line ℓ_1
$119 : P_{126} = (59, 0, 1, 0)$ lies on line ℓ_1
$120 : P_{127} = (60, 0, 1, 0)$ lies on line ℓ_1
$121 : P_{128} = (61, 0, 1, 0)$ lies on line ℓ_1
$122 : P_{129} = (62, 0, 1, 0)$ lies on line ℓ_1
$123 : P_{130} = (63, 0, 1, 0)$ lies on line ℓ_1
$124 : P_{197} = (2, 2, 1, 0)$ lies on line ℓ_2
$125 : P_{262} = (3, 3, 1, 0)$ lies on line ℓ_2
$126 : P_{327} = (4, 4, 1, 0)$ lies on line ℓ_2
$127 : P_{392} = (5, 5, 1, 0)$ lies on line ℓ_2
$128 : P_{457} = (6, 6, 1, 0)$ lies on line ℓ_2
$129 : P_{522} = (7, 7, 1, 0)$ lies on line ℓ_2
$130 : P_{587} = (8, 8, 1, 0)$ lies on line ℓ_2
$131 : P_{652} = (9, 9, 1, 0)$ lies on line ℓ_2
$132 : P_{717} = (10, 10, 1, 0)$ lies on line ℓ_2
$133 : P_{782} = (11, 11, 1, 0)$ lies on line ℓ_2
$134 : P_{847} = (12, 12, 1, 0)$ lies on line ℓ_2
$135 : P_{912} = (13, 13, 1, 0)$ lies on line ℓ_2
$136 : P_{977} = (14, 14, 1, 0)$ lies on line ℓ_2
$137 : P_{1042} = (15, 15, 1, 0)$ lies on line ℓ_2
$138 : P_{1107} = (16, 16, 1, 0)$ lies on line ℓ_2
$139 : P_{1172} = (17, 17, 1, 0)$ lies on line ℓ_2
$140 : P_{1237} = (18, 18, 1, 0)$ lies on line ℓ_2
$141 : P_{1302} = (19, 19, 1, 0)$ lies on line ℓ_2
$142 : P_{1367} = (20, 20, 1, 0)$ lies on line ℓ_2
$143 : P_{1432} = (21, 21, 1, 0)$ lies on line ℓ_2
$144 : P_{1497} = (22, 22, 1, 0)$ lies on line ℓ_2
$145 : P_{1562} = (23, 23, 1, 0)$ lies on line ℓ_2
$146 : P_{1627} = (24, 24, 1, 0)$ lies on line ℓ_2
$147 : P_{1692} = (25, 25, 1, 0)$ lies on line ℓ_2
$148 : P_{1757} = (26, 26, 1, 0)$ lies on line ℓ_2
$149 : P_{1822} = (27, 27, 1, 0)$ lies on line ℓ_2
$150 : P_{1887} = (28, 28, 1, 0)$ lies on line ℓ_2
$151 : P_{1952} = (29, 29, 1, 0)$ lies on line ℓ_2
$152 : P_{2017} = (30, 30, 1, 0)$ lies on line ℓ_2
$153 : P_{2082} = (31, 31, 1, 0)$ lies on line ℓ_2
$154 : P_{2147} = (32, 32, 1, 0)$ lies on line ℓ_2
$155 : P_{2212} = (33, 33, 1, 0)$ lies on line ℓ_2
$156 : P_{2277} = (34, 34, 1, 0)$ lies on line ℓ_2
$157 : P_{2342} = (35, 35, 1, 0)$ lies on line ℓ_2
$158 : P_{2407} = (36, 36, 1, 0)$ lies on line ℓ_2
$159 : P_{2472} = (37, 37, 1, 0)$ lies on line ℓ_2
$160 : P_{2537} = (38, 38, 1, 0)$ lies on line ℓ_2
$161 : P_{2602} = (39, 39, 1, 0)$ lies on line ℓ_2

$162 : P_{2667} = (40, 40, 1, 0)$ lies on line ℓ_2
$163 : P_{2732} = (41, 41, 1, 0)$ lies on line ℓ_2
$164 : P_{2797} = (42, 42, 1, 0)$ lies on line ℓ_2
$165 : P_{2862} = (43, 43, 1, 0)$ lies on line ℓ_2
$166 : P_{2927} = (44, 44, 1, 0)$ lies on line ℓ_2
$167 : P_{2992} = (45, 45, 1, 0)$ lies on line ℓ_2
$168 : P_{3057} = (46, 46, 1, 0)$ lies on line ℓ_2
$169 : P_{3122} = (47, 47, 1, 0)$ lies on line ℓ_2
$170 : P_{3187} = (48, 48, 1, 0)$ lies on line ℓ_2
$171 : P_{3252} = (49, 49, 1, 0)$ lies on line ℓ_2
$172 : P_{3317} = (50, 50, 1, 0)$ lies on line ℓ_2
$173 : P_{3382} = (51, 51, 1, 0)$ lies on line ℓ_2
$174 : P_{3447} = (52, 52, 1, 0)$ lies on line ℓ_2
$175 : P_{3512} = (53, 53, 1, 0)$ lies on line ℓ_2
$176 : P_{3577} = (54, 54, 1, 0)$ lies on line ℓ_2
$177 : P_{3642} = (55, 55, 1, 0)$ lies on line ℓ_2
$178 : P_{3707} = (56, 56, 1, 0)$ lies on line ℓ_2
$179 : P_{3772} = (57, 57, 1, 0)$ lies on line ℓ_2
$180 : P_{3837} = (58, 58, 1, 0)$ lies on line ℓ_2
$181 : P_{3902} = (59, 59, 1, 0)$ lies on line ℓ_2
$182 : P_{3967} = (60, 60, 1, 0)$ lies on line ℓ_2
$183 : P_{4032} = (61, 61, 1, 0)$ lies on line ℓ_2
$184 : P_{4097} = (62, 62, 1, 0)$ lies on line ℓ_2
$185 : P_{4162} = (63, 63, 1, 0)$ lies on line ℓ_2
$186 : P_{4290} = (0, 2, 0, 1)$ lies on line ℓ_3
$187 : P_{4291} = (1, 2, 0, 1)$ lies on line ℓ_4
$188 : P_{4354} = (0, 3, 0, 1)$ lies on line ℓ_3
$189 : P_{4355} = (1, 3, 0, 1)$ lies on line ℓ_4
$190 : P_{4418} = (0, 4, 0, 1)$ lies on line ℓ_3
$191 : P_{4419} = (1, 4, 0, 1)$ lies on line ℓ_4
$192 : P_{4482} = (0, 5, 0, 1)$ lies on line ℓ_3
$193 : P_{4483} = (1, 5, 0, 1)$ lies on line ℓ_4
$194 : P_{4546} = (0, 6, 0, 1)$ lies on line ℓ_3
$195 : P_{4547} = (1, 6, 0, 1)$ lies on line ℓ_4
$196 : P_{4610} = (0, 7, 0, 1)$ lies on line ℓ_3
$197 : P_{4611} = (1, 7, 0, 1)$ lies on line ℓ_4
$198 : P_{4674} = (0, 8, 0, 1)$ lies on line ℓ_3
$199 : P_{4675} = (1, 8, 0, 1)$ lies on line ℓ_4
$200 : P_{4738} = (0, 9, 0, 1)$ lies on line ℓ_3
$201 : P_{4739} = (1, 9, 0, 1)$ lies on line ℓ_4
$202 : P_{4802} = (0, 10, 0, 1)$ lies on line ℓ_3
$203 : P_{4803} = (1, 10, 0, 1)$ lies on line ℓ_4
$204 : P_{4866} = (0, 11, 0, 1)$ lies on line ℓ_3
$205 : P_{4867} = (1, 11, 0, 1)$ lies on line ℓ_4
$206 : P_{4930} = (0, 12, 0, 1)$ lies on line ℓ_3
$207 : P_{4931} = (1, 12, 0, 1)$ lies on line ℓ_4
$208 : P_{4994} = (0, 13, 0, 1)$ lies on line ℓ_3
$209 : P_{4995} = (1, 13, 0, 1)$ lies on line ℓ_4
$210 : P_{5058} = (0, 14, 0, 1)$ lies on line ℓ_3
$211 : P_{5059} = (1, 14, 0, 1)$ lies on line ℓ_4
$212 : P_{5122} = (0, 15, 0, 1)$ lies on line ℓ_3
$213 : P_{5123} = (1, 15, 0, 1)$ lies on line ℓ_4
$214 : P_{5186} = (0, 16, 0, 1)$ lies on line ℓ_3
$215 : P_{5187} = (1, 16, 0, 1)$ lies on line ℓ_4

$216: P_{5250} = (0, 17, 0, 1)$ lies on line ℓ_3
$217: P_{5251} = (1, 17, 0, 1)$ lies on line ℓ_4
$218: P_{5314} = (0, 18, 0, 1)$ lies on line ℓ_3
$219: P_{5315} = (1, 18, 0, 1)$ lies on line ℓ_4
$220: P_{5378} = (0, 19, 0, 1)$ lies on line ℓ_3
$221: P_{5379} = (1, 19, 0, 1)$ lies on line ℓ_4
$222: P_{5442} = (0, 20, 0, 1)$ lies on line ℓ_3
$223: P_{5443} = (1, 20, 0, 1)$ lies on line ℓ_4
$224: P_{5506} = (0, 21, 0, 1)$ lies on line ℓ_3
$225: P_{5507} = (1, 21, 0, 1)$ lies on line ℓ_4
$226: P_{5570} = (0, 22, 0, 1)$ lies on line ℓ_3
$227: P_{5571} = (1, 22, 0, 1)$ lies on line ℓ_4
$228: P_{5634} = (0, 23, 0, 1)$ lies on line ℓ_3
$229: P_{5635} = (1, 23, 0, 1)$ lies on line ℓ_4
$230: P_{5698} = (0, 24, 0, 1)$ lies on line ℓ_3
$231: P_{5699} = (1, 24, 0, 1)$ lies on line ℓ_4
$232: P_{5762} = (0, 25, 0, 1)$ lies on line ℓ_3
$233: P_{5763} = (1, 25, 0, 1)$ lies on line ℓ_4
$234: P_{5826} = (0, 26, 0, 1)$ lies on line ℓ_3
$235: P_{5827} = (1, 26, 0, 1)$ lies on line ℓ_4
$236: P_{5890} = (0, 27, 0, 1)$ lies on line ℓ_3
$237: P_{5891} = (1, 27, 0, 1)$ lies on line ℓ_4
$238: P_{5954} = (0, 28, 0, 1)$ lies on line ℓ_3
$239: P_{5955} = (1, 28, 0, 1)$ lies on line ℓ_4
$240: P_{6018} = (0, 29, 0, 1)$ lies on line ℓ_3
$241: P_{6019} = (1, 29, 0, 1)$ lies on line ℓ_4
$242: P_{6082} = (0, 30, 0, 1)$ lies on line ℓ_3
$243: P_{6083} = (1, 30, 0, 1)$ lies on line ℓ_4
$244: P_{6146} = (0, 31, 0, 1)$ lies on line ℓ_3
$245: P_{6147} = (1, 31, 0, 1)$ lies on line ℓ_4
$246: P_{6210} = (0, 32, 0, 1)$ lies on line ℓ_3
$247: P_{6211} = (1, 32, 0, 1)$ lies on line ℓ_4
$248: P_{6274} = (0, 33, 0, 1)$ lies on line ℓ_3
$249: P_{6275} = (1, 33, 0, 1)$ lies on line ℓ_4
$250: P_{6338} = (0, 34, 0, 1)$ lies on line ℓ_3
$251: P_{6339} = (1, 34, 0, 1)$ lies on line ℓ_4
$252: P_{6402} = (0, 35, 0, 1)$ lies on line ℓ_3
$253: P_{6403} = (1, 35, 0, 1)$ lies on line ℓ_4
$254: P_{6466} = (0, 36, 0, 1)$ lies on line ℓ_3
$255: P_{6467} = (1, 36, 0, 1)$ lies on line ℓ_4
$256: P_{6530} = (0, 37, 0, 1)$ lies on line ℓ_3
$257: P_{6531} = (1, 37, 0, 1)$ lies on line ℓ_4
$258: P_{6594} = (0, 38, 0, 1)$ lies on line ℓ_3
$259: P_{6595} = (1, 38, 0, 1)$ lies on line ℓ_4
$260: P_{6658} = (0, 39, 0, 1)$ lies on line ℓ_3
$261: P_{6659} = (1, 39, 0, 1)$ lies on line ℓ_4
$262: P_{6722} = (0, 40, 0, 1)$ lies on line ℓ_3
$263: P_{6723} = (1, 40, 0, 1)$ lies on line ℓ_4
$264: P_{6786} = (0, 41, 0, 1)$ lies on line ℓ_3
$265: P_{6787} = (1, 41, 0, 1)$ lies on line ℓ_4
$266: P_{6850} = (0, 42, 0, 1)$ lies on line ℓ_3
$267: P_{6851} = (1, 42, 0, 1)$ lies on line ℓ_4
$268: P_{6914} = (0, 43, 0, 1)$ lies on line ℓ_3
$269: P_{6915} = (1, 43, 0, 1)$ lies on line ℓ_4

$270: P_{6978} = (0, 44, 0, 1)$ lies on line ℓ_3
$271: P_{6979} = (1, 44, 0, 1)$ lies on line ℓ_4
$272: P_{7042} = (0, 45, 0, 1)$ lies on line ℓ_3
$273: P_{7043} = (1, 45, 0, 1)$ lies on line ℓ_4
$274: P_{7106} = (0, 46, 0, 1)$ lies on line ℓ_3
$275: P_{7107} = (1, 46, 0, 1)$ lies on line ℓ_4
$276: P_{7170} = (0, 47, 0, 1)$ lies on line ℓ_3
$277: P_{7171} = (1, 47, 0, 1)$ lies on line ℓ_4
$278: P_{7234} = (0, 48, 0, 1)$ lies on line ℓ_3
$279: P_{7235} = (1, 48, 0, 1)$ lies on line ℓ_4
$280: P_{7298} = (0, 49, 0, 1)$ lies on line ℓ_3
$281: P_{7299} = (1, 49, 0, 1)$ lies on line ℓ_4
$282: P_{7362} = (0, 50, 0, 1)$ lies on line ℓ_3
$283: P_{7363} = (1, 50, 0, 1)$ lies on line ℓ_4
$284: P_{7426} = (0, 51, 0, 1)$ lies on line ℓ_3
$285: P_{7427} = (1, 51, 0, 1)$ lies on line ℓ_4
$286: P_{7490} = (0, 52, 0, 1)$ lies on line ℓ_3
$287: P_{7491} = (1, 52, 0, 1)$ lies on line ℓ_4
$288: P_{7554} = (0, 53, 0, 1)$ lies on line ℓ_3
$289: P_{7555} = (1, 53, 0, 1)$ lies on line ℓ_4
$290: P_{7618} = (0, 54, 0, 1)$ lies on line ℓ_3
$291: P_{7619} = (1, 54, 0, 1)$ lies on line ℓ_4
$292: P_{7682} = (0, 55, 0, 1)$ lies on line ℓ_3
$293: P_{7683} = (1, 55, 0, 1)$ lies on line ℓ_4
$294: P_{7746} = (0, 56, 0, 1)$ lies on line ℓ_3
$295: P_{7747} = (1, 56, 0, 1)$ lies on line ℓ_4
$296: P_{7810} = (0, 57, 0, 1)$ lies on line ℓ_3
$297: P_{7811} = (1, 57, 0, 1)$ lies on line ℓ_4
$298: P_{7874} = (0, 58, 0, 1)$ lies on line ℓ_3
$299: P_{7875} = (1, 58, 0, 1)$ lies on line ℓ_4
$300: P_{7938} = (0, 59, 0, 1)$ lies on line ℓ_3
$301: P_{7939} = (1, 59, 0, 1)$ lies on line ℓ_4
$302: P_{8002} = (0, 60, 0, 1)$ lies on line ℓ_3
$303: P_{8003} = (1, 60, 0, 1)$ lies on line ℓ_4
$304: P_{8066} = (0, 61, 0, 1)$ lies on line ℓ_3
$305: P_{8067} = (1, 61, 0, 1)$ lies on line ℓ_4
$306: P_{8130} = (0, 62, 0, 1)$ lies on line ℓ_3
$307: P_{8131} = (1, 62, 0, 1)$ lies on line ℓ_4
$308: P_{8194} = (0, 63, 0, 1)$ lies on line ℓ_3
$309: P_{8195} = (1, 63, 0, 1)$ lies on line ℓ_4
$310: P_{8258} = (0, 0, 1, 1)$ lies on line ℓ_5
$311: P_{12353} = (0, 0, 2, 1)$ lies on line ℓ_5
$312: P_{12354} = (1, 0, 2, 1)$ lies on line ℓ_7
$313: P_{12418} = (1, 1, 2, 1)$ lies on line ℓ_6
$314: P_{12419} = (2, 1, 2, 1)$ lies on line ℓ_8
$315: P_{12547} = (2, 3, 2, 1)$ lies on line ℓ_9
$316: P_{16449} = (0, 0, 3, 1)$ lies on line ℓ_5
$317: P_{16450} = (1, 0, 3, 1)$ lies on line ℓ_7
$318: P_{16514} = (1, 1, 3, 1)$ lies on line ℓ_6
$319: P_{16516} = (3, 1, 3, 1)$ lies on line ℓ_8
$320: P_{16580} = (3, 2, 3, 1)$ lies on line ℓ_9
$321: P_{20545} = (0, 0, 4, 1)$ lies on line ℓ_5
$322: P_{20546} = (1, 0, 4, 1)$ lies on line ℓ_7
$323: P_{20610} = (1, 1, 4, 1)$ lies on line ℓ_6

$324 : P_{20613} = (4, 1, 4, 1)$ lies on line ℓ_8

$325 : P_{20869} = (4, 5, 4, 1)$ lies on line ℓ_9

$326 : P_{24641} = (0, 0, 5, 1)$ lies on line ℓ_5

$327 : P_{24642} = (1, 0, 5, 1)$ lies on line ℓ_7

$328 : P_{24706} = (1, 1, 5, 1)$ lies on line ℓ_6

$329 : P_{24710} = (5, 1, 5, 1)$ lies on line ℓ_8

$330 : P_{24902} = (5, 4, 5, 1)$ lies on line ℓ_9

$331 : P_{28737} = (0, 0, 6, 1)$ lies on line ℓ_5

$332 : P_{28738} = (1, 0, 6, 1)$ lies on line ℓ_7

$333 : P_{28802} = (1, 1, 6, 1)$ lies on line ℓ_6

$334 : P_{28807} = (6, 1, 6, 1)$ lies on line ℓ_8

$335 : P_{29191} = (6, 7, 6, 1)$ lies on line ℓ_9

$336 : P_{32833} = (0, 0, 7, 1)$ lies on line ℓ_5

$337 : P_{32834} = (1, 0, 7, 1)$ lies on line ℓ_7

$338 : P_{32898} = (1, 1, 7, 1)$ lies on line ℓ_6

$339 : P_{32904} = (7, 1, 7, 1)$ lies on line ℓ_8

$340 : P_{33224} = (7, 6, 7, 1)$ lies on line ℓ_9

$341 : P_{36929} = (0, 0, 8, 1)$ lies on line ℓ_5

$342 : P_{36930} = (1, 0, 8, 1)$ lies on line ℓ_7

$343 : P_{36994} = (1, 1, 8, 1)$ lies on line ℓ_6

$344 : P_{37001} = (8, 1, 8, 1)$ lies on line ℓ_8

$345 : P_{37513} = (8, 9, 8, 1)$ lies on line ℓ_9

$346 : P_{41025} = (0, 0, 9, 1)$ lies on line ℓ_5

$347 : P_{41026} = (1, 0, 9, 1)$ lies on line ℓ_7

$348 : P_{41090} = (1, 1, 9, 1)$ lies on line ℓ_6

$349 : P_{41098} = (9, 1, 9, 1)$ lies on line ℓ_8

$350 : P_{41546} = (9, 8, 9, 1)$ lies on line ℓ_9

$351 : P_{45121} = (0, 0, 10, 1)$ lies on line ℓ_5

$352 : P_{45122} = (1, 0, 10, 1)$ lies on line ℓ_7

$353 : P_{45186} = (1, 1, 10, 1)$ lies on line ℓ_6

$354 : P_{45195} = (10, 1, 10, 1)$ lies on line ℓ_8

$355 : P_{45835} = (10, 11, 10, 1)$ lies on line ℓ_9

$356 : P_{49217} = (0, 0, 11, 1)$ lies on line ℓ_5

$357 : P_{49218} = (1, 0, 11, 1)$ lies on line ℓ_7

$358 : P_{49282} = (1, 1, 11, 1)$ lies on line ℓ_6

$359 : P_{49292} = (11, 1, 11, 1)$ lies on line ℓ_8

$360 : P_{49868} = (11, 10, 11, 1)$ lies on line ℓ_9

$361 : P_{53313} = (0, 0, 12, 1)$ lies on line ℓ_5

$362 : P_{53314} = (1, 0, 12, 1)$ lies on line ℓ_7

$363 : P_{53378} = (1, 1, 12, 1)$ lies on line ℓ_6

$364 : P_{53389} = (12, 1, 12, 1)$ lies on line ℓ_8

$365 : P_{54157} = (12, 13, 12, 1)$ lies on line ℓ_9

$366 : P_{57409} = (0, 0, 13, 1)$ lies on line ℓ_5

$367 : P_{57410} = (1, 0, 13, 1)$ lies on line ℓ_7

$368 : P_{57474} = (1, 1, 13, 1)$ lies on line ℓ_6

$369 : P_{57486} = (13, 1, 13, 1)$ lies on line ℓ_8

$370 : P_{58190} = (13, 12, 13, 1)$ lies on line ℓ_9

$371 : P_{61505} = (0, 0, 14, 1)$ lies on line ℓ_5

$372 : P_{61506} = (1, 0, 14, 1)$ lies on line ℓ_7

$373 : P_{61570} = (1, 1, 14, 1)$ lies on line ℓ_6

$374 : P_{61583} = (14, 1, 14, 1)$ lies on line ℓ_8

$375 : P_{62479} = (14, 15, 14, 1)$ lies on line ℓ_9

$376 : P_{65601} = (0, 0, 15, 1)$ lies on line ℓ_5

$377 : P_{65602} = (1, 0, 15, 1)$ lies on line ℓ_7

$378 : P_{65666} = (1, 1, 15, 1)$ lies on line ℓ_6

$379 : P_{65680} = (15, 1, 15, 1)$ lies on line ℓ_8

$380 : P_{66512} = (15, 14, 15, 1)$ lies on line ℓ_9

$381 : P_{69697} = (0, 0, 16, 1)$ lies on line ℓ_5

$382 : P_{69698} = (1, 0, 16, 1)$ lies on line ℓ_7

$383 : P_{69762} = (1, 1, 16, 1)$ lies on line ℓ_6

$384 : P_{69777} = (16, 1, 16, 1)$ lies on line ℓ_8

$385 : P_{70801} = (16, 17, 16, 1)$ lies on line ℓ_9

$386 : P_{73793} = (0, 0, 17, 1)$ lies on line ℓ_5

$387 : P_{73794} = (1, 0, 17, 1)$ lies on line ℓ_7

$388 : P_{73858} = (1, 1, 17, 1)$ lies on line ℓ_6

$389 : P_{73874} = (17, 1, 17, 1)$ lies on line ℓ_8

$390 : P_{74834} = (17, 16, 17, 1)$ lies on line ℓ_9

$391 : P_{77889} = (0, 0, 18, 1)$ lies on line ℓ_5

$392 : P_{77890} = (1, 0, 18, 1)$ lies on line ℓ_7

$393 : P_{77954} = (1, 1, 18, 1)$ lies on line ℓ_6

$394 : P_{77971} = (18, 1, 18, 1)$ lies on line ℓ_8

$395 : P_{79123} = (18, 19, 18, 1)$ lies on line ℓ_9

$396 : P_{81985} = (0, 0, 19, 1)$ lies on line ℓ_5

$397 : P_{81986} = (1, 0, 19, 1)$ lies on line ℓ_7

$398 : P_{82050} = (1, 1, 19, 1)$ lies on line ℓ_6

$399 : P_{82068} = (19, 1, 19, 1)$ lies on line ℓ_8

$400 : P_{83156} = (19, 18, 19, 1)$ lies on line ℓ_9

$401 : P_{86081} = (0, 0, 20, 1)$ lies on line ℓ_5

$402 : P_{86082} = (1, 0, 20, 1)$ lies on line ℓ_7

$403 : P_{86146} = (1, 1, 20, 1)$ lies on line ℓ_6

$404 : P_{86165} = (20, 1, 20, 1)$ lies on line ℓ_8

$405 : P_{87445} = (20, 21, 20, 1)$ lies on line ℓ_9

$406 : P_{90177} = (0, 0, 21, 1)$ lies on line ℓ_5

$407 : P_{90178} = (1, 0, 21, 1)$ lies on line ℓ_7

$408 : P_{90242} = (1, 1, 21, 1)$ lies on line ℓ_6

$409 : P_{90262} = (21, 1, 21, 1)$ lies on line ℓ_8

$410 : P_{91478} = (21, 20, 21, 1)$ lies on line ℓ_9

$411 : P_{94273} = (0, 0, 22, 1)$ lies on line ℓ_5

$412 : P_{94274} = (1, 0, 22, 1)$ lies on line ℓ_7

$413 : P_{94338} = (1, 1, 22, 1)$ lies on line ℓ_6

$414 : P_{94359} = (22, 1, 22, 1)$ lies on line ℓ_8

$415 : P_{95767} = (22, 23, 22, 1)$ lies on line ℓ_9

$416 : P_{98369} = (0, 0, 23, 1)$ lies on line ℓ_5

$417 : P_{98370} = (1, 0, 23, 1)$ lies on line ℓ_7

$418 : P_{98434} = (1, 1, 23, 1)$ lies on line ℓ_6

$419 : P_{98456} = (23, 1, 23, 1)$ lies on line ℓ_8

$420 : P_{99800} = (23, 22, 23, 1)$ lies on line ℓ_9

$421 : P_{102465} = (0, 0, 24, 1)$ lies on line ℓ_5

$422 : P_{102466} = (1, 0, 24, 1)$ lies on line ℓ_7

$423 : P_{102530} = (1, 1, 24, 1)$ lies on line ℓ_6

$424 : P_{102553} = (24, 1, 24, 1)$ lies on line ℓ_8

$425 : P_{104089} = (24, 25, 24, 1)$ lies on line ℓ_9

$426 : P_{106561} = (0, 0, 25, 1)$ lies on line ℓ_5

$427 : P_{106562} = (1, 0, 25, 1)$ lies on line ℓ_7

$428 : P_{106626} = (1, 1, 25, 1)$ lies on line ℓ_6

$429 : P_{106650} = (25, 1, 25, 1)$ lies on line ℓ_8

$430 : P_{108122} = (25, 24, 25, 1)$ lies on line ℓ_9

$431 : P_{110657} = (0, 0, 26, 1)$ lies on line ℓ_5

$432 : P_{110658} = (1, 0, 26, 1)$ lies on line ℓ_7

$433 : P_{110722} = (1, 1, 26, 1)$ lies on line ℓ_6

$434 : P_{110747} = (26, 1, 26, 1)$ lies on line ℓ_8

$435 : P_{112411} = (26, 27, 26, 1)$ lies on line ℓ_9

$436 : P_{114753} = (0, 0, 27, 1)$ lies on line ℓ_5

$437 : P_{114754} = (1, 0, 27, 1)$ lies on line ℓ_7

$438 : P_{114818} = (1, 1, 27, 1)$ lies on line ℓ_6

$439 : P_{114844} = (27, 1, 27, 1)$ lies on line ℓ_8

$440 : P_{116444} = (27, 26, 27, 1)$ lies on line ℓ_9

$441 : P_{118849} = (0, 0, 28, 1)$ lies on line ℓ_5

$442 : P_{118850} = (1, 0, 28, 1)$ lies on line ℓ_7

$443 : P_{118914} = (1, 1, 28, 1)$ lies on line ℓ_6

$444 : P_{118941} = (28, 1, 28, 1)$ lies on line ℓ_8

$445 : P_{120733} = (28, 29, 28, 1)$ lies on line ℓ_9

$446 : P_{122945} = (0, 0, 29, 1)$ lies on line ℓ_5

$447 : P_{122946} = (1, 0, 29, 1)$ lies on line ℓ_7

$448 : P_{123010} = (1, 1, 29, 1)$ lies on line ℓ_6

$449 : P_{123038} = (29, 1, 29, 1)$ lies on line ℓ_8

$450 : P_{124766} = (29, 28, 29, 1)$ lies on line ℓ_9

$451 : P_{127041} = (0, 0, 30, 1)$ lies on line ℓ_5

$452 : P_{127042} = (1, 0, 30, 1)$ lies on line ℓ_7

$453 : P_{127106} = (1, 1, 30, 1)$ lies on line ℓ_6

$454 : P_{127135} = (30, 1, 30, 1)$ lies on line ℓ_8

$455 : P_{129055} = (30, 31, 30, 1)$ lies on line ℓ_9

$456 : P_{131137} = (0, 0, 31, 1)$ lies on line ℓ_5

$457 : P_{131138} = (1, 0, 31, 1)$ lies on line ℓ_7

$458 : P_{131202} = (1, 1, 31, 1)$ lies on line ℓ_6

$459 : P_{131232} = (31, 1, 31, 1)$ lies on line ℓ_8

$460 : P_{133088} = (31, 30, 31, 1)$ lies on line ℓ_9

$461 : P_{135233} = (0, 0, 32, 1)$ lies on line ℓ_5

$462 : P_{135234} = (1, 0, 32, 1)$ lies on line ℓ_7

$463 : P_{135298} = (1, 1, 32, 1)$ lies on line ℓ_6

$464 : P_{135329} = (32, 1, 32, 1)$ lies on line ℓ_8

$465 : P_{137377} = (32, 33, 32, 1)$ lies on line ℓ_9

$466 : P_{139329} = (0, 0, 33, 1)$ lies on line ℓ_5

$467 : P_{139330} = (1, 0, 33, 1)$ lies on line ℓ_7

$468 : P_{139394} = (1, 1, 33, 1)$ lies on line ℓ_6

$469 : P_{139426} = (33, 1, 33, 1)$ lies on line ℓ_8

$470 : P_{141410} = (33, 32, 33, 1)$ lies on line ℓ_9

$471 : P_{143425} = (0, 0, 34, 1)$ lies on line ℓ_5

$472 : P_{143426} = (1, 0, 34, 1)$ lies on line ℓ_7

$473 : P_{143490} = (1, 1, 34, 1)$ lies on line ℓ_6

$474 : P_{143523} = (34, 1, 34, 1)$ lies on line ℓ_8

$475 : P_{145699} = (34, 35, 34, 1)$ lies on line ℓ_9

$476 : P_{147521} = (0, 0, 35, 1)$ lies on line ℓ_5

$477 : P_{147522} = (1, 0, 35, 1)$ lies on line ℓ_7

$478 : P_{147586} = (1, 1, 35, 1)$ lies on line ℓ_6

$479 : P_{147620} = (35, 1, 35, 1)$ lies on line ℓ_8

$480 : P_{149732} = (35, 34, 35, 1)$ lies on line ℓ_9

$481 : P_{151617} = (0, 0, 36, 1)$ lies on line ℓ_5

$482 : P_{151618} = (1, 0, 36, 1)$ lies on line ℓ_7

$483 : P_{151682} = (1, 1, 36, 1)$ lies on line ℓ_6

$484 : P_{151717} = (36, 1, 36, 1)$ lies on line ℓ_8

$485 : P_{154021} = (36, 37, 36, 1)$ lies on line ℓ_9

$486 : P_{155713} = (0, 0, 37, 1)$ lies on line ℓ_5

$487 : P_{155714} = (1, 0, 37, 1)$ lies on line ℓ_7

$488 : P_{155778} = (1, 1, 37, 1)$ lies on line ℓ_6

$489 : P_{155814} = (37, 1, 37, 1)$ lies on line ℓ_8

$490 : P_{158054} = (37, 36, 37, 1)$ lies on line ℓ_9

$491 : P_{159809} = (0, 0, 38, 1)$ lies on line ℓ_5

$492 : P_{159810} = (1, 0, 38, 1)$ lies on line ℓ_7

$493 : P_{159874} = (1, 1, 38, 1)$ lies on line ℓ_6

$494 : P_{159911} = (38, 1, 38, 1)$ lies on line ℓ_8

$495 : P_{162343} = (38, 39, 38, 1)$ lies on line ℓ_9

$496 : P_{163905} = (0, 0, 39, 1)$ lies on line ℓ_5

$497 : P_{163906} = (1, 0, 39, 1)$ lies on line ℓ_7

$498 : P_{163970} = (1, 1, 39, 1)$ lies on line ℓ_6

$499 : P_{164008} = (39, 1, 39, 1)$ lies on line ℓ_8

$500 : P_{166376} = (39, 38, 39, 1)$ lies on line ℓ_9

$501 : P_{168001} = (0, 0, 40, 1)$ lies on line ℓ_5

$502 : P_{168002} = (1, 0, 40, 1)$ lies on line ℓ_7

$503 : P_{168066} = (1, 1, 40, 1)$ lies on line ℓ_6

$504 : P_{168105} = (40, 1, 40, 1)$ lies on line ℓ_8

$505 : P_{170665} = (40, 41, 40, 1)$ lies on line ℓ_9

$506 : P_{172097} = (0, 0, 41, 1)$ lies on line ℓ_5

$507 : P_{172098} = (1, 0, 41, 1)$ lies on line ℓ_7

$508 : P_{172162} = (1, 1, 41, 1)$ lies on line ℓ_6

$509 : P_{172202} = (41, 1, 41, 1)$ lies on line ℓ_8

$510 : P_{174698} = (41, 40, 41, 1)$ lies on line ℓ_9

$511 : P_{176193} = (0, 0, 42, 1)$ lies on line ℓ_5

$512 : P_{176194} = (1, 0, 42, 1)$ lies on line ℓ_7

$513 : P_{176258} = (1, 1, 42, 1)$ lies on line ℓ_6

$514 : P_{176299} = (42, 1, 42, 1)$ lies on line ℓ_8

$515 : P_{178987} = (42, 43, 42, 1)$ lies on line ℓ_9

$516 : P_{180289} = (0, 0, 43, 1)$ lies on line ℓ_5

$517 : P_{180290} = (1, 0, 43, 1)$ lies on line ℓ_7

$518 : P_{180354} = (1, 1, 43, 1)$ lies on line ℓ_6

$519 : P_{180396} = (43, 1, 43, 1)$ lies on line ℓ_8

$520 : P_{183020} = (43, 42, 43, 1)$ lies on line ℓ_9

$521 : P_{184385} = (0, 0, 44, 1)$ lies on line ℓ_5

$522 : P_{184386} = (1, 0, 44, 1)$ lies on line ℓ_7

$523 : P_{184450} = (1, 1, 44, 1)$ lies on line ℓ_6

$524 : P_{184493} = (44, 1, 44, 1)$ lies on line ℓ_8

$525 : P_{187309} = (44, 45, 44, 1)$ lies on line ℓ_9

$526 : P_{188481} = (0, 0, 45, 1)$ lies on line ℓ_5

$527 : P_{188482} = (1, 0, 45, 1)$ lies on line ℓ_7

$528 : P_{188546} = (1, 1, 45, 1)$ lies on line ℓ_6

$529 : P_{188590} = (45, 1, 45, 1)$ lies on line ℓ_8

$530 : P_{191342} = (45, 44, 45, 1)$ lies on line ℓ_9

$531 : P_{192577} = (0, 0, 46, 1)$ lies on line ℓ_5

$532 : P_{192578} = (1, 0, 46, 1)$ lies on line ℓ_7

$533 : P_{192642} = (1, 1, 46, 1)$ lies on line ℓ_6

$534 : P_{192687} = (46, 1, 46, 1)$ lies on line ℓ_8

$535 : P_{195631} = (46, 47, 46, 1)$ lies on line ℓ_9

$536 : P_{196673} = (0, 0, 47, 1)$ lies on line ℓ_5

$537 : P_{196674} = (1, 0, 47, 1)$ lies on line ℓ_7

$538 : P_{196738} = (1, 1, 47, 1)$ lies on line ℓ_6

$539 : P_{196784} = (47, 1, 47, 1)$ lies on line ℓ_8

$540 : P_{199664} = (47, 46, 47, 1)$ lies on line ℓ_9
$541 : P_{200769} = (0, 0, 48, 1)$ lies on line ℓ_5
$542 : P_{200770} = (1, 0, 48, 1)$ lies on line ℓ_7
$543 : P_{200834} = (1, 1, 48, 1)$ lies on line ℓ_6
$544 : P_{200881} = (48, 1, 48, 1)$ lies on line ℓ_8
$545 : P_{203953} = (48, 49, 48, 1)$ lies on line ℓ_9
$546 : P_{204865} = (0, 0, 49, 1)$ lies on line ℓ_5
$547 : P_{204866} = (1, 0, 49, 1)$ lies on line ℓ_7
$548 : P_{204930} = (1, 1, 49, 1)$ lies on line ℓ_6
$549 : P_{204978} = (49, 1, 49, 1)$ lies on line ℓ_8
$550 : P_{207986} = (49, 48, 49, 1)$ lies on line ℓ_9
$551 : P_{208961} = (0, 0, 50, 1)$ lies on line ℓ_5
$552 : P_{208962} = (1, 0, 50, 1)$ lies on line ℓ_7
$553 : P_{209026} = (1, 1, 50, 1)$ lies on line ℓ_6
$554 : P_{209075} = (50, 1, 50, 1)$ lies on line ℓ_8
$555 : P_{212275} = (50, 51, 50, 1)$ lies on line ℓ_9
$556 : P_{213057} = (0, 0, 51, 1)$ lies on line ℓ_5
$557 : P_{213058} = (1, 0, 51, 1)$ lies on line ℓ_7
$558 : P_{213122} = (1, 1, 51, 1)$ lies on line ℓ_6
$559 : P_{213172} = (51, 1, 51, 1)$ lies on line ℓ_8
$560 : P_{216308} = (51, 50, 51, 1)$ lies on line ℓ_9
$561 : P_{217153} = (0, 0, 52, 1)$ lies on line ℓ_5
$562 : P_{217154} = (1, 0, 52, 1)$ lies on line ℓ_7
$563 : P_{217218} = (1, 1, 52, 1)$ lies on line ℓ_6
$564 : P_{217269} = (52, 1, 52, 1)$ lies on line ℓ_8
$565 : P_{220597} = (52, 53, 52, 1)$ lies on line ℓ_9
$566 : P_{221249} = (0, 0, 53, 1)$ lies on line ℓ_5
$567 : P_{221250} = (1, 0, 53, 1)$ lies on line ℓ_7
$568 : P_{221314} = (1, 1, 53, 1)$ lies on line ℓ_6
$569 : P_{221366} = (53, 1, 53, 1)$ lies on line ℓ_8
$570 : P_{224630} = (53, 52, 53, 1)$ lies on line ℓ_9
$571 : P_{225345} = (0, 0, 54, 1)$ lies on line ℓ_5
$572 : P_{225346} = (1, 0, 54, 1)$ lies on line ℓ_7
$573 : P_{225410} = (1, 1, 54, 1)$ lies on line ℓ_6
$574 : P_{225463} = (54, 1, 54, 1)$ lies on line ℓ_8
$575 : P_{228919} = (54, 55, 54, 1)$ lies on line ℓ_9
$576 : P_{229441} = (0, 0, 55, 1)$ lies on line ℓ_5
$577 : P_{229442} = (1, 0, 55, 1)$ lies on line ℓ_7
$578 : P_{229506} = (1, 1, 55, 1)$ lies on line ℓ_6
$579 : P_{229560} = (55, 1, 55, 1)$ lies on line ℓ_8
$580 : P_{232952} = (55, 54, 55, 1)$ lies on line ℓ_9

$581 : P_{233537} = (0, 0, 56, 1)$ lies on line ℓ_5
$582 : P_{233538} = (1, 0, 56, 1)$ lies on line ℓ_7
$583 : P_{233602} = (1, 1, 56, 1)$ lies on line ℓ_6
$584 : P_{233657} = (56, 1, 56, 1)$ lies on line ℓ_8
$585 : P_{237241} = (56, 57, 56, 1)$ lies on line ℓ_9
$586 : P_{237633} = (0, 0, 57, 1)$ lies on line ℓ_5
$587 : P_{237634} = (1, 0, 57, 1)$ lies on line ℓ_7
$588 : P_{237698} = (1, 1, 57, 1)$ lies on line ℓ_6
$589 : P_{237754} = (57, 1, 57, 1)$ lies on line ℓ_8
$590 : P_{241274} = (57, 56, 57, 1)$ lies on line ℓ_9
$591 : P_{241729} = (0, 0, 58, 1)$ lies on line ℓ_5
$592 : P_{241730} = (1, 0, 58, 1)$ lies on line ℓ_7
$593 : P_{241794} = (1, 1, 58, 1)$ lies on line ℓ_6
$594 : P_{241851} = (58, 1, 58, 1)$ lies on line ℓ_8
$595 : P_{245563} = (58, 59, 58, 1)$ lies on line ℓ_9
$596 : P_{245825} = (0, 0, 59, 1)$ lies on line ℓ_5
$597 : P_{245826} = (1, 0, 59, 1)$ lies on line ℓ_7
$598 : P_{245890} = (1, 1, 59, 1)$ lies on line ℓ_6
$599 : P_{245948} = (59, 1, 59, 1)$ lies on line ℓ_8
$600 : P_{249596} = (59, 58, 59, 1)$ lies on line ℓ_9
$601 : P_{249921} = (0, 0, 60, 1)$ lies on line ℓ_5
$602 : P_{249922} = (1, 0, 60, 1)$ lies on line ℓ_7
$603 : P_{249986} = (1, 1, 60, 1)$ lies on line ℓ_6
$604 : P_{250045} = (60, 1, 60, 1)$ lies on line ℓ_8
$605 : P_{253885} = (60, 61, 60, 1)$ lies on line ℓ_9
$606 : P_{254017} = (0, 0, 61, 1)$ lies on line ℓ_5
$607 : P_{254018} = (1, 0, 61, 1)$ lies on line ℓ_7
$608 : P_{254082} = (1, 1, 61, 1)$ lies on line ℓ_6
$609 : P_{254142} = (61, 1, 61, 1)$ lies on line ℓ_8
$610 : P_{257918} = (61, 60, 61, 1)$ lies on line ℓ_9
$611 : P_{258113} = (0, 0, 62, 1)$ lies on line ℓ_5
$612 : P_{258114} = (1, 0, 62, 1)$ lies on line ℓ_7
$613 : P_{258178} = (1, 1, 62, 1)$ lies on line ℓ_6
$614 : P_{258239} = (62, 1, 62, 1)$ lies on line ℓ_8
$615 : P_{262207} = (62, 63, 62, 1)$ lies on line ℓ_9
$616 : P_{262209} = (0, 0, 63, 1)$ lies on line ℓ_5
$617 : P_{262210} = (1, 0, 63, 1)$ lies on line ℓ_7
$618 : P_{262274} = (1, 1, 63, 1)$ lies on line ℓ_6
$619 : P_{262336} = (63, 1, 63, 1)$ lies on line ℓ_8
$620 : P_{266240} = (63, 62, 63, 1)$ lies on line ℓ_9

The single points on the surface are:

Points on surface but on no line

The surface has 3720 points not on any line:
Too many to print.

Line Intersection Graph

	0 1 2 3 4 5 6 7 8 9
0	0 1 1 1 1 0 0 0 0 0
1	1 0 1 0 0 1 1 1 1 0
2	1 1 0 0 0 1 1 1 0 1
3	1 0 0 0 1 1 0 0 1 1
4	1 0 0 1 0 0 1 1 0 0
5	0 1 1 1 0 0 1 1 0 0
6	0 1 1 0 1 1 0 1 1 0
7	0 1 1 0 1 1 1 0 0 1
8	0 1 0 1 0 0 1 0 0 1
9	0 0 1 1 0 0 0 1 1 0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4
in point	P_0	P_5	P_1	P_1

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_5	ℓ_6	ℓ_7	ℓ_8
in point	P_0	P_2	P_2	P_2	P_2	P_{68}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_5	ℓ_6	ℓ_7	ℓ_9
in point	P_5	P_2	P_2	P_2	P_2	P_{132}

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_8	ℓ_9
in point	P_1	P_1	P_3	P_{4226}	P_{4226}

Line 4 intersects

Line	ℓ_0	ℓ_3	ℓ_6	ℓ_7
in point	P_1	P_1	P_{4227}	P_{4163}

Line 5 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_7
in point	P_2	P_2	P_3	P_2	P_2

Line 6 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_7	ℓ_8
in point	P_2	P_2	P_{4227}	P_2	P_2	P_4

Line 7 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_6	ℓ_9
in point	P_2	P_2	P_{4163}	P_2	P_2	P_{8259}

Line 8 intersects

Line	ℓ_1	ℓ_3	ℓ_6	ℓ_9
in point	P_{68}	P_{4226}	P_4	P_{4226}

Line 9 intersects

Line	ℓ_2	ℓ_3	ℓ_7	ℓ_8
in point	P_{132}	P_{4226}	P_{8259}	P_{4226}

The surface has 4353 points:
Too many to print.