Rank-20 over GF(64)

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The equation

The equation of the surface is :

$$X_0^3 + X_1^3 + X_2^3 + X_3^3 + X_0^2 X_1 + X_0^2 X_2 + X_0^2 X_3 + X_0 X_1^2 + X_1^2 X_2 + X_1^2 X_3$$

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

(1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1)
The point rank of the equation over GF(64) is 20

General information

Number of lines	9
Number of points	4289
Number of singular points	4
Number of Eckardt points	5
Number of double points	6
Number of single points	558
Number of points off lines	3720
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^9
Type of lines on points	$3^5, 2^6, 1^{558}, 0^{3720}$

Singular Points

The surface has 4 singular points:

0 : $P_{132} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0)$ 3 : $P_{8322} = \mathbf{P}(0,1,1,1) = \mathbf{P}(0,1,1,1)$
1 : $P_{4227} = \mathbf{P}(1,1,0,1) = \mathbf{P}(1,1,0,1)$
2 : $P_{8259} = \mathbf{P}(1,0,1,1) = \mathbf{P}(1,0,1,1)$

The 9 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{8258} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{8258} = \mathbf{Pl}(0,0,1,1,1,1)_{544578}$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{270530} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{270530} = \mathbf{Pl}(1,0,1,1,1,1)_{544579}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \mathbf{Pl}(1,1,0,0,1,1)_{536577}$$

$$\ell_3 = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{4226} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{4226} = \mathbf{Pl}(1,1,1,0,1,1)_{536640}$$

$$\ell_4 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{266305} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{266305} = \mathbf{Pl}(1,1,1,1,0,0)_{256}$$

$$\ell_5 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{270466} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{270466} = \mathbf{Pl}(1,1,1,1,0,1)_{286530}$$

$$\ell_6 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{266369} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{266369} = \mathbf{Pl}(1,1,1,1,1,0)_{20354}$$

$$\ell_7 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \mathbf{Pl}(1,1,0,1,1,1)_{540609}$$

$$\ell_8 = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \mathbf{Pl}(0,1,1,1,1,1)_{544642}$$

Rank of lines: (8258, 270530, 4225, 4226, 266305, 270466, 266369, 270529, 274562)
Rank of points on Klein quadric: (544578, 544579, 536577, 536640, 256, 286530, 20354, 540609, 544642)

Eckardt Points

The surface has 5 Eckardt points:
$0 : P_4 = \mathbf{P}(1,1,1,1) = \mathbf{P}(1,1,1,1)$,
$1 : P_{132} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0)$,
$2 : P_{4227} = \mathbf{P}(1,1,0,1) = \mathbf{P}(1,1,0,1)$,
$3 : P_{8259} = \mathbf{P}(1,0,1,1) = \mathbf{P}(1,0,1,1)$,
$4 : P_{8322} = \mathbf{P}(0,1,1,1) = \mathbf{P}(0,1,1,1)$.

Double Points

The surface has 6 Double points:
The double points on the surface are:

$P_5 = (1,1,0,0) = \ell_0 \cap \ell_1$ $P_{131} = (0,1,1,0) = \ell_4 \cap \ell_5$
$P_{8258} = (0,0,1,1) = \ell_0 \cap \ell_8$ $P_{4163} = (1,0,0,1) = \ell_4 \cap \ell_6$
$P_{68} = (1,0,1,0) = \ell_2 \cap \ell_3$
$P_{4226} = (0,1,0,1) = \ell_2 \cap \ell_7$

Single Points

The surface has 558 single points:
The single points on the surface are:

$0: P_{8387} = (2, 2, 1, 1)$ lies on line ℓ_0
$1: P_{8388} = (3, 2, 1, 1)$ lies on line ℓ_1
$2: P_{8451} = (2, 3, 1, 1)$ lies on line ℓ_1
$3: P_{8452} = (3, 3, 1, 1)$ lies on line ℓ_0
$4: P_{8517} = (4, 4, 1, 1)$ lies on line ℓ_0
$5: P_{8518} = (5, 4, 1, 1)$ lies on line ℓ_1
$6: P_{8581} = (4, 5, 1, 1)$ lies on line ℓ_1
$7: P_{8582} = (5, 5, 1, 1)$ lies on line ℓ_0
$8: P_{8647} = (6, 6, 1, 1)$ lies on line ℓ_0
$9: P_{8648} = (7, 6, 1, 1)$ lies on line ℓ_1
$10: P_{8711} = (6, 7, 1, 1)$ lies on line ℓ_1
$11: P_{8712} = (7, 7, 1, 1)$ lies on line ℓ_0
$12: P_{8777} = (8, 8, 1, 1)$ lies on line ℓ_0
$13: P_{8778} = (9, 8, 1, 1)$ lies on line ℓ_1
$14: P_{8841} = (8, 9, 1, 1)$ lies on line ℓ_1
$15: P_{8842} = (9, 9, 1, 1)$ lies on line ℓ_0
$16: P_{8907} = (10, 10, 1, 1)$ lies on line ℓ_0
$17: P_{8908} = (11, 10, 1, 1)$ lies on line ℓ_1
$18: P_{8971} = (10, 11, 1, 1)$ lies on line ℓ_1
$19: P_{8972} = (11, 11, 1, 1)$ lies on line ℓ_0
$20: P_{9037} = (12, 12, 1, 1)$ lies on line ℓ_0
$21: P_{9038} = (13, 12, 1, 1)$ lies on line ℓ_1
$22: P_{9101} = (12, 13, 1, 1)$ lies on line ℓ_1
$23: P_{9102} = (13, 13, 1, 1)$ lies on line ℓ_0
$24: P_{9167} = (14, 14, 1, 1)$ lies on line ℓ_0
$25: P_{9168} = (15, 14, 1, 1)$ lies on line ℓ_1
$26: P_{9231} = (14, 15, 1, 1)$ lies on line ℓ_1
$27: P_{9232} = (15, 15, 1, 1)$ lies on line ℓ_0
$28: P_{9297} = (16, 16, 1, 1)$ lies on line ℓ_0
$29: P_{9298} = (17, 16, 1, 1)$ lies on line ℓ_1
$30: P_{9361} = (16, 17, 1, 1)$ lies on line ℓ_1
$31: P_{9362} = (17, 17, 1, 1)$ lies on line ℓ_0
$32: P_{9427} = (18, 18, 1, 1)$ lies on line ℓ_0
$33: P_{9428} = (19, 18, 1, 1)$ lies on line ℓ_1
$34: P_{9491} = (18, 19, 1, 1)$ lies on line ℓ_1
$35: P_{9492} = (19, 19, 1, 1)$ lies on line ℓ_0
$36: P_{9557} = (20, 20, 1, 1)$ lies on line ℓ_0
$37: P_{9558} = (21, 20, 1, 1)$ lies on line ℓ_1
$38: P_{9621} = (20, 21, 1, 1)$ lies on line ℓ_1
$39: P_{9622} = (21, 21, 1, 1)$ lies on line ℓ_0
$40: P_{9687} = (22, 22, 1, 1)$ lies on line ℓ_0
$41: P_{9688} = (23, 22, 1, 1)$ lies on line ℓ_1
$42: P_{9751} = (22, 23, 1, 1)$ lies on line ℓ_1
$43: P_{9752} = (23, 23, 1, 1)$ lies on line ℓ_0
$44: P_{9817} = (24, 24, 1, 1)$ lies on line ℓ_0
$45: P_{9818} = (25, 24, 1, 1)$ lies on line ℓ_1
$46: P_{9881} = (24, 25, 1, 1)$ lies on line ℓ_1
$47: P_{9882} = (25, 25, 1, 1)$ lies on line ℓ_0
$48: P_{9947} = (26, 26, 1, 1)$ lies on line ℓ_0
$49: P_{9948} = (27, 26, 1, 1)$ lies on line ℓ_1
$50: P_{10011} = (26, 27, 1, 1)$ lies on line ℓ_1
$51: P_{10012} = (27, 27, 1, 1)$ lies on line ℓ_0
$52: P_{10077} = (28, 28, 1, 1)$ lies on line ℓ_0
$53: P_{10078} = (29, 28, 1, 1)$ lies on line ℓ_1
$54: P_{10141} = (28, 29, 1, 1)$ lies on line ℓ_1
$55: P_{10142} = (29, 29, 1, 1)$ lies on line ℓ_0
$56: P_{10207} = (30, 30, 1, 1)$ lies on line ℓ_0
$57: P_{10208} = (31, 30, 1, 1)$ lies on line ℓ_1
$58: P_{10271} = (30, 31, 1, 1)$ lies on line ℓ_1
$59: P_{10272} = (31, 31, 1, 1)$ lies on line ℓ_0
$60: P_{10337} = (32, 32, 1, 1)$ lies on line ℓ_0
$61: P_{10338} = (33, 32, 1, 1)$ lies on line ℓ_1
$62: P_{10401} = (32, 33, 1, 1)$ lies on line ℓ_1
$63: P_{10402} = (33, 33, 1, 1)$ lies on line ℓ_0
$64: P_{10467} = (34, 34, 1, 1)$ lies on line ℓ_0
$65: P_{10468} = (35, 34, 1, 1)$ lies on line ℓ_1
$66: P_{10531} = (34, 35, 1, 1)$ lies on line ℓ_1
$67: P_{10532} = (35, 35, 1, 1)$ lies on line ℓ_0
$68: P_{10597} = (36, 36, 1, 1)$ lies on line ℓ_0
$69: P_{10598} = (37, 36, 1, 1)$ lies on line ℓ_1
$70: P_{10661} = (36, 37, 1, 1)$ lies on line ℓ_1
$71: P_{10662} = (37, 37, 1, 1)$ lies on line ℓ_0
$72: P_{10727} = (38, 38, 1, 1)$ lies on line ℓ_0
$73: P_{10728} = (39, 38, 1, 1)$ lies on line ℓ_1
$74: P_{10791} = (38, 39, 1, 1)$ lies on line ℓ_1
$75: P_{10792} = (39, 39, 1, 1)$ lies on line ℓ_0
$76: P_{10857} = (40, 40, 1, 1)$ lies on line ℓ_0
$77: P_{10858} = (41, 40, 1, 1)$ lies on line ℓ_1
$78: P_{10921} = (40, 41, 1, 1)$ lies on line ℓ_1
$79: P_{10922} = (41, 41, 1, 1)$ lies on line ℓ_0
$80: P_{10987} = (42, 42, 1, 1)$ lies on line ℓ_0
$81: P_{10988} = (43, 42, 1, 1)$ lies on line ℓ_1
$82: P_{11051} = (42, 43, 1, 1)$ lies on line ℓ_1
$83: P_{11052} = (43, 43, 1, 1)$ lies on line ℓ_0
$84: P_{11117} = (44, 44, 1, 1)$ lies on line ℓ_0
$85: P_{11118} = (45, 44, 1, 1)$ lies on line ℓ_1
$86: P_{11181} = (44, 45, 1, 1)$ lies on line ℓ_1
$87: P_{11182} = (45, 45, 1, 1)$ lies on line ℓ_0
$88: P_{11247} = (46, 46, 1, 1)$ lies on line ℓ_0
$89: P_{11248} = (47, 46, 1, 1)$ lies on line ℓ_1
$90: P_{11311} = (46, 47, 1, 1)$ lies on line ℓ_1
$91: P_{11312} = (47, 47, 1, 1)$ lies on line ℓ_0
$92: P_{11377} = (48, 48, 1, 1)$ lies on line ℓ_0
$93: P_{11378} = (49, 48, 1, 1)$ lies on line ℓ_1
$94: P_{11441} = (48, 49, 1, 1)$ lies on line ℓ_1
$95: P_{11442} = (49, 49, 1, 1)$ lies on line ℓ_0
$96: P_{11507} = (50, 50, 1, 1)$ lies on line ℓ_0
$97: P_{11508} = (51, 50, 1, 1)$ lies on line ℓ_1
$98: P_{11571} = (50, 51, 1, 1)$ lies on line ℓ_1
$99: P_{11572} = (51, 51, 1, 1)$ lies on line ℓ_0
$100: P_{11637} = (52, 52, 1, 1)$ lies on line ℓ_0
$101: P_{11638} = (53, 52, 1, 1)$ lies on line ℓ_1
$102: P_{11701} = (52, 53, 1, 1)$ lies on line ℓ_1
$103: P_{11702} = (53, 53, 1, 1)$ lies on line ℓ_0
$104: P_{11767} = (54, 54, 1, 1)$ lies on line ℓ_0
$105: P_{11768} = (55, 54, 1, 1)$ lies on line ℓ_1
$106: P_{11831} = (54, 55, 1, 1)$ lies on line ℓ_1
$107: P_{11832} = (55, 55, 1, 1)$ lies on line ℓ_0

108 : $P_{11897} = (56, 56, 1, 1)$ lies on line ℓ_0
109 : $P_{11898} = (57, 56, 1, 1)$ lies on line ℓ_1
110 : $P_{11961} = (56, 57, 1, 1)$ lies on line ℓ_1
111 : $P_{11962} = (57, 57, 1, 1)$ lies on line ℓ_0
112 : $P_{12027} = (58, 58, 1, 1)$ lies on line ℓ_0
113 : $P_{12028} = (59, 58, 1, 1)$ lies on line ℓ_1
114 : $P_{12091} = (58, 59, 1, 1)$ lies on line ℓ_1
115 : $P_{12092} = (59, 59, 1, 1)$ lies on line ℓ_0
116 : $P_{12157} = (60, 60, 1, 1)$ lies on line ℓ_0
117 : $P_{12158} = (61, 60, 1, 1)$ lies on line ℓ_1
118 : $P_{12221} = (60, 61, 1, 1)$ lies on line ℓ_1
119 : $P_{12222} = (61, 61, 1, 1)$ lies on line ℓ_0
120 : $P_{12287} = (62, 62, 1, 1)$ lies on line ℓ_0
121 : $P_{12288} = (63, 62, 1, 1)$ lies on line ℓ_1
122 : $P_{12351} = (62, 63, 1, 1)$ lies on line ℓ_1
123 : $P_{12352} = (63, 63, 1, 1)$ lies on line ℓ_0
124 : $P_{12419} = (2, 1, 2, 1)$ lies on line ℓ_2
125 : $P_{12420} = (3, 1, 2, 1)$ lies on line ℓ_3
126 : $P_{12482} = (1, 2, 2, 1)$ lies on line ℓ_4
127 : $P_{12484} = (3, 2, 2, 1)$ lies on line ℓ_6
128 : $P_{12546} = (1, 3, 2, 1)$ lies on line ℓ_5
129 : $P_{12547} = (2, 3, 2, 1)$ lies on line ℓ_7
130 : $P_{12548} = (3, 3, 2, 1)$ lies on line ℓ_8
131 : $P_{16515} = (2, 1, 3, 1)$ lies on line ℓ_3
132 : $P_{16516} = (3, 1, 3, 1)$ lies on line ℓ_2
133 : $P_{16578} = (1, 2, 3, 1)$ lies on line ℓ_5
134 : $P_{16579} = (2, 2, 3, 1)$ lies on line ℓ_8
135 : $P_{16580} = (3, 2, 3, 1)$ lies on line ℓ_7
136 : $P_{16642} = (1, 3, 3, 1)$ lies on line ℓ_4
137 : $P_{16643} = (2, 3, 3, 1)$ lies on line ℓ_6
138 : $P_{20613} = (4, 1, 4, 1)$ lies on line ℓ_2
139 : $P_{20614} = (5, 1, 4, 1)$ lies on line ℓ_3
140 : $P_{20802} = (1, 4, 4, 1)$ lies on line ℓ_4
141 : $P_{20806} = (5, 4, 4, 1)$ lies on line ℓ_6
142 : $P_{20866} = (1, 5, 4, 1)$ lies on line ℓ_5
143 : $P_{20869} = (4, 5, 4, 1)$ lies on line ℓ_7
144 : $P_{20870} = (5, 5, 4, 1)$ lies on line ℓ_8
145 : $P_{24709} = (4, 1, 5, 1)$ lies on line ℓ_3
146 : $P_{24710} = (5, 1, 5, 1)$ lies on line ℓ_2
147 : $P_{24898} = (1, 4, 5, 1)$ lies on line ℓ_5
148 : $P_{24901} = (4, 4, 5, 1)$ lies on line ℓ_8
149 : $P_{24902} = (5, 4, 5, 1)$ lies on line ℓ_7
150 : $P_{24962} = (1, 5, 5, 1)$ lies on line ℓ_4
151 : $P_{24965} = (4, 5, 5, 1)$ lies on line ℓ_6
152 : $P_{28807} = (6, 1, 6, 1)$ lies on line ℓ_2
153 : $P_{28808} = (7, 1, 6, 1)$ lies on line ℓ_3
154 : $P_{29122} = (1, 6, 6, 1)$ lies on line ℓ_4
155 : $P_{29128} = (7, 6, 6, 1)$ lies on line ℓ_6
156 : $P_{29186} = (1, 7, 6, 1)$ lies on line ℓ_5
157 : $P_{29191} = (6, 7, 6, 1)$ lies on line ℓ_7
158 : $P_{29192} = (7, 7, 6, 1)$ lies on line ℓ_8
159 : $P_{32903} = (6, 1, 7, 1)$ lies on line ℓ_3
160 : $P_{32904} = (7, 1, 7, 1)$ lies on line ℓ_2
161 : $P_{33218} = (1, 6, 7, 1)$ lies on line ℓ_5

162 : $P_{33223} = (6, 6, 7, 1)$ lies on line ℓ_8
163 : $P_{33224} = (7, 6, 7, 1)$ lies on line ℓ_7
164 : $P_{33282} = (1, 7, 7, 1)$ lies on line ℓ_4
165 : $P_{33287} = (6, 7, 7, 1)$ lies on line ℓ_6
166 : $P_{37001} = (8, 1, 8, 1)$ lies on line ℓ_2
167 : $P_{37002} = (9, 1, 8, 1)$ lies on line ℓ_3
168 : $P_{37442} = (1, 8, 8, 1)$ lies on line ℓ_4
169 : $P_{37450} = (9, 8, 8, 1)$ lies on line ℓ_6
170 : $P_{37506} = (1, 9, 8, 1)$ lies on line ℓ_5
171 : $P_{37513} = (8, 9, 8, 1)$ lies on line ℓ_7
172 : $P_{37514} = (9, 9, 8, 1)$ lies on line ℓ_8
173 : $P_{41097} = (8, 1, 9, 1)$ lies on line ℓ_3
174 : $P_{41098} = (9, 1, 9, 1)$ lies on line ℓ_2
175 : $P_{41538} = (1, 8, 9, 1)$ lies on line ℓ_5
176 : $P_{41545} = (8, 8, 9, 1)$ lies on line ℓ_8
177 : $P_{41546} = (9, 8, 9, 1)$ lies on line ℓ_7
178 : $P_{41602} = (1, 9, 9, 1)$ lies on line ℓ_4
179 : $P_{41609} = (8, 9, 9, 1)$ lies on line ℓ_6
180 : $P_{45195} = (10, 1, 10, 1)$ lies on line ℓ_2
181 : $P_{45196} = (11, 1, 10, 1)$ lies on line ℓ_3
182 : $P_{45762} = (1, 10, 10, 1)$ lies on line ℓ_4
183 : $P_{45772} = (11, 10, 10, 1)$ lies on line ℓ_6
184 : $P_{45826} = (1, 11, 10, 1)$ lies on line ℓ_5
185 : $P_{45835} = (10, 11, 10, 1)$ lies on line ℓ_7
186 : $P_{45836} = (11, 11, 10, 1)$ lies on line ℓ_8
187 : $P_{49291} = (10, 1, 11, 1)$ lies on line ℓ_3
188 : $P_{49292} = (11, 1, 11, 1)$ lies on line ℓ_2
189 : $P_{49858} = (1, 10, 11, 1)$ lies on line ℓ_5
190 : $P_{49867} = (10, 10, 11, 1)$ lies on line ℓ_8
191 : $P_{49868} = (11, 10, 11, 1)$ lies on line ℓ_7
192 : $P_{49922} = (1, 11, 11, 1)$ lies on line ℓ_4
193 : $P_{49931} = (10, 11, 11, 1)$ lies on line ℓ_6
194 : $P_{53389} = (12, 1, 12, 1)$ lies on line ℓ_2
195 : $P_{53390} = (13, 1, 12, 1)$ lies on line ℓ_3
196 : $P_{54082} = (1, 12, 12, 1)$ lies on line ℓ_4
197 : $P_{54094} = (13, 12, 12, 1)$ lies on line ℓ_6
198 : $P_{54146} = (1, 13, 12, 1)$ lies on line ℓ_5
199 : $P_{54157} = (12, 13, 12, 1)$ lies on line ℓ_7
200 : $P_{54158} = (13, 13, 12, 1)$ lies on line ℓ_8
201 : $P_{57485} = (12, 1, 13, 1)$ lies on line ℓ_3
202 : $P_{57486} = (13, 1, 13, 1)$ lies on line ℓ_2
203 : $P_{58178} = (1, 12, 13, 1)$ lies on line ℓ_5
204 : $P_{58189} = (12, 12, 13, 1)$ lies on line ℓ_8
205 : $P_{58190} = (13, 12, 13, 1)$ lies on line ℓ_7
206 : $P_{58242} = (1, 13, 13, 1)$ lies on line ℓ_4
207 : $P_{58253} = (12, 13, 13, 1)$ lies on line ℓ_6
208 : $P_{61583} = (14, 1, 14, 1)$ lies on line ℓ_2
209 : $P_{61584} = (15, 1, 14, 1)$ lies on line ℓ_3
210 : $P_{62402} = (1, 14, 14, 1)$ lies on line ℓ_4
211 : $P_{62416} = (15, 14, 14, 1)$ lies on line ℓ_6
212 : $P_{62466} = (1, 15, 14, 1)$ lies on line ℓ_5
213 : $P_{62479} = (14, 15, 14, 1)$ lies on line ℓ_7
214 : $P_{62480} = (15, 15, 14, 1)$ lies on line ℓ_8
215 : $P_{65679} = (14, 1, 15, 1)$ lies on line ℓ_3

216 : $P_{65680} = (15, 1, 15, 1)$ lies on line ℓ_2
217 : $P_{66498} = (1, 14, 15, 1)$ lies on line ℓ_5
218 : $P_{66511} = (14, 14, 15, 1)$ lies on line ℓ_8
219 : $P_{66512} = (15, 14, 15, 1)$ lies on line ℓ_7
220 : $P_{66562} = (1, 15, 15, 1)$ lies on line ℓ_4
221 : $P_{66575} = (14, 15, 15, 1)$ lies on line ℓ_6
222 : $P_{69777} = (16, 1, 16, 1)$ lies on line ℓ_2
223 : $P_{69778} = (17, 1, 16, 1)$ lies on line ℓ_3
224 : $P_{70722} = (1, 16, 16, 1)$ lies on line ℓ_4
225 : $P_{70738} = (17, 16, 16, 1)$ lies on line ℓ_6
226 : $P_{70786} = (1, 17, 16, 1)$ lies on line ℓ_5
227 : $P_{70801} = (16, 17, 16, 1)$ lies on line ℓ_7
228 : $P_{70802} = (17, 17, 16, 1)$ lies on line ℓ_8
229 : $P_{73873} = (16, 1, 17, 1)$ lies on line ℓ_3
230 : $P_{73874} = (17, 1, 17, 1)$ lies on line ℓ_2
231 : $P_{74818} = (1, 16, 17, 1)$ lies on line ℓ_5
232 : $P_{74833} = (16, 16, 17, 1)$ lies on line ℓ_8
233 : $P_{74834} = (17, 16, 17, 1)$ lies on line ℓ_7
234 : $P_{74882} = (1, 17, 17, 1)$ lies on line ℓ_4
235 : $P_{74897} = (16, 17, 17, 1)$ lies on line ℓ_6
236 : $P_{77971} = (18, 1, 18, 1)$ lies on line ℓ_2
237 : $P_{77972} = (19, 1, 18, 1)$ lies on line ℓ_3
238 : $P_{79042} = (1, 18, 18, 1)$ lies on line ℓ_4
239 : $P_{79060} = (19, 18, 18, 1)$ lies on line ℓ_6
240 : $P_{79106} = (1, 19, 18, 1)$ lies on line ℓ_5
241 : $P_{79123} = (18, 19, 18, 1)$ lies on line ℓ_7
242 : $P_{79124} = (19, 19, 18, 1)$ lies on line ℓ_8
243 : $P_{82067} = (18, 1, 19, 1)$ lies on line ℓ_3
244 : $P_{82068} = (19, 1, 19, 1)$ lies on line ℓ_2
245 : $P_{83138} = (1, 18, 19, 1)$ lies on line ℓ_5
246 : $P_{83155} = (18, 18, 19, 1)$ lies on line ℓ_8
247 : $P_{83156} = (19, 18, 19, 1)$ lies on line ℓ_7
248 : $P_{83202} = (1, 19, 19, 1)$ lies on line ℓ_4
249 : $P_{83219} = (18, 19, 19, 1)$ lies on line ℓ_6
250 : $P_{86165} = (20, 1, 20, 1)$ lies on line ℓ_2
251 : $P_{86166} = (21, 1, 20, 1)$ lies on line ℓ_3
252 : $P_{87362} = (1, 20, 20, 1)$ lies on line ℓ_4
253 : $P_{87382} = (21, 20, 20, 1)$ lies on line ℓ_6
254 : $P_{87426} = (1, 21, 20, 1)$ lies on line ℓ_5
255 : $P_{87445} = (20, 21, 20, 1)$ lies on line ℓ_7
256 : $P_{87446} = (21, 21, 20, 1)$ lies on line ℓ_8
257 : $P_{90261} = (20, 1, 21, 1)$ lies on line ℓ_3
258 : $P_{90262} = (21, 1, 21, 1)$ lies on line ℓ_2
259 : $P_{91458} = (1, 20, 21, 1)$ lies on line ℓ_5
260 : $P_{91477} = (20, 20, 21, 1)$ lies on line ℓ_8
261 : $P_{91478} = (21, 20, 21, 1)$ lies on line ℓ_7
262 : $P_{91522} = (1, 21, 21, 1)$ lies on line ℓ_4
263 : $P_{91541} = (20, 21, 21, 1)$ lies on line ℓ_6
264 : $P_{94359} = (22, 1, 22, 1)$ lies on line ℓ_2
265 : $P_{94360} = (23, 1, 22, 1)$ lies on line ℓ_3
266 : $P_{95682} = (1, 22, 22, 1)$ lies on line ℓ_4
267 : $P_{95704} = (23, 22, 22, 1)$ lies on line ℓ_6
268 : $P_{95746} = (1, 23, 22, 1)$ lies on line ℓ_5
269 : $P_{95767} = (22, 23, 22, 1)$ lies on line ℓ_7

270 : $P_{95768} = (23, 23, 22, 1)$ lies on line ℓ_8
271 : $P_{98455} = (22, 1, 23, 1)$ lies on line ℓ_3
272 : $P_{98456} = (23, 1, 23, 1)$ lies on line ℓ_2
273 : $P_{99778} = (1, 22, 23, 1)$ lies on line ℓ_5
274 : $P_{99799} = (22, 22, 23, 1)$ lies on line ℓ_8
275 : $P_{99800} = (23, 22, 23, 1)$ lies on line ℓ_7
276 : $P_{99842} = (1, 23, 23, 1)$ lies on line ℓ_4
277 : $P_{99863} = (22, 23, 23, 1)$ lies on line ℓ_6
278 : $P_{102553} = (24, 1, 24, 1)$ lies on line ℓ_2
279 : $P_{102554} = (25, 1, 24, 1)$ lies on line ℓ_3
280 : $P_{104002} = (1, 24, 24, 1)$ lies on line ℓ_4
281 : $P_{104026} = (25, 24, 24, 1)$ lies on line ℓ_6
282 : $P_{104066} = (1, 25, 24, 1)$ lies on line ℓ_5
283 : $P_{104089} = (24, 25, 24, 1)$ lies on line ℓ_7
284 : $P_{104090} = (25, 25, 24, 1)$ lies on line ℓ_8
285 : $P_{106649} = (24, 1, 25, 1)$ lies on line ℓ_3
286 : $P_{106650} = (25, 1, 25, 1)$ lies on line ℓ_2
287 : $P_{108098} = (1, 24, 25, 1)$ lies on line ℓ_5
288 : $P_{108121} = (24, 24, 25, 1)$ lies on line ℓ_8
289 : $P_{108122} = (25, 24, 25, 1)$ lies on line ℓ_7
290 : $P_{108162} = (1, 25, 25, 1)$ lies on line ℓ_4
291 : $P_{108185} = (24, 25, 25, 1)$ lies on line ℓ_6
292 : $P_{110747} = (26, 1, 26, 1)$ lies on line ℓ_2
293 : $P_{110748} = (27, 1, 26, 1)$ lies on line ℓ_3
294 : $P_{112322} = (1, 26, 26, 1)$ lies on line ℓ_4
295 : $P_{112348} = (27, 26, 26, 1)$ lies on line ℓ_6
296 : $P_{112386} = (1, 27, 26, 1)$ lies on line ℓ_5
297 : $P_{112411} = (26, 27, 26, 1)$ lies on line ℓ_7
298 : $P_{112412} = (27, 27, 26, 1)$ lies on line ℓ_8
299 : $P_{114843} = (26, 1, 27, 1)$ lies on line ℓ_3
300 : $P_{114844} = (27, 1, 27, 1)$ lies on line ℓ_2
301 : $P_{116418} = (1, 26, 27, 1)$ lies on line ℓ_5
302 : $P_{116443} = (26, 26, 27, 1)$ lies on line ℓ_8
303 : $P_{116444} = (27, 26, 27, 1)$ lies on line ℓ_7
304 : $P_{116482} = (1, 27, 27, 1)$ lies on line ℓ_4
305 : $P_{116507} = (26, 27, 27, 1)$ lies on line ℓ_6
306 : $P_{118941} = (28, 1, 28, 1)$ lies on line ℓ_2
307 : $P_{118942} = (29, 1, 28, 1)$ lies on line ℓ_3
308 : $P_{120642} = (1, 28, 28, 1)$ lies on line ℓ_4
309 : $P_{120670} = (29, 28, 28, 1)$ lies on line ℓ_6
310 : $P_{120706} = (1, 29, 28, 1)$ lies on line ℓ_5
311 : $P_{120733} = (28, 29, 28, 1)$ lies on line ℓ_7
312 : $P_{120734} = (29, 29, 28, 1)$ lies on line ℓ_8
313 : $P_{123037} = (28, 1, 29, 1)$ lies on line ℓ_3
314 : $P_{123038} = (29, 1, 29, 1)$ lies on line ℓ_2
315 : $P_{124738} = (1, 28, 29, 1)$ lies on line ℓ_5
316 : $P_{124765} = (28, 28, 29, 1)$ lies on line ℓ_8
317 : $P_{124766} = (29, 28, 29, 1)$ lies on line ℓ_7
318 : $P_{124802} = (1, 29, 29, 1)$ lies on line ℓ_4
319 : $P_{124829} = (28, 29, 29, 1)$ lies on line ℓ_6
320 : $P_{127135} = (30, 1, 30, 1)$ lies on line ℓ_2
321 : $P_{127136} = (31, 1, 30, 1)$ lies on line ℓ_3
322 : $P_{128962} = (1, 30, 30, 1)$ lies on line ℓ_4
323 : $P_{128992} = (31, 30, 30, 1)$ lies on line ℓ_6

$324: P_{129026} = (1, 31, 30, 1)$ lies on line ℓ_5

$325: P_{129055} = (30, 31, 30, 1)$ lies on line ℓ_7

$326: P_{129056} = (31, 31, 30, 1)$ lies on line ℓ_8

$327: P_{131231} = (30, 1, 31, 1)$ lies on line ℓ_3

$328: P_{131232} = (31, 1, 31, 1)$ lies on line ℓ_2

$329: P_{133058} = (1, 30, 31, 1)$ lies on line ℓ_5

$330: P_{133087} = (30, 30, 31, 1)$ lies on line ℓ_8

$331: P_{133088} = (31, 30, 31, 1)$ lies on line ℓ_7

$332: P_{133122} = (1, 31, 31, 1)$ lies on line ℓ_4

$333: P_{133151} = (30, 31, 31, 1)$ lies on line ℓ_6

$334: P_{135329} = (32, 1, 32, 1)$ lies on line ℓ_2

$335: P_{135330} = (33, 1, 32, 1)$ lies on line ℓ_3

$336: P_{137282} = (1, 32, 32, 1)$ lies on line ℓ_4

$337: P_{137314} = (33, 32, 32, 1)$ lies on line ℓ_6

$338: P_{137346} = (1, 33, 32, 1)$ lies on line ℓ_5

$339: P_{137377} = (32, 33, 32, 1)$ lies on line ℓ_7

$340: P_{137378} = (33, 33, 32, 1)$ lies on line ℓ_8

$341: P_{139425} = (32, 1, 33, 1)$ lies on line ℓ_3

$342: P_{139426} = (33, 1, 33, 1)$ lies on line ℓ_2

$343: P_{141378} = (1, 32, 33, 1)$ lies on line ℓ_5

$344: P_{141409} = (32, 32, 33, 1)$ lies on line ℓ_8

$345: P_{141410} = (33, 32, 33, 1)$ lies on line ℓ_7

$346: P_{141442} = (1, 33, 33, 1)$ lies on line ℓ_4

$347: P_{141473} = (32, 33, 33, 1)$ lies on line ℓ_6

$348: P_{143523} = (34, 1, 34, 1)$ lies on line ℓ_2

$349: P_{143524} = (35, 1, 34, 1)$ lies on line ℓ_3

$350: P_{145602} = (1, 34, 34, 1)$ lies on line ℓ_4

$351: P_{145636} = (35, 34, 34, 1)$ lies on line ℓ_6

$352: P_{145666} = (1, 35, 34, 1)$ lies on line ℓ_5

$353: P_{145699} = (34, 35, 34, 1)$ lies on line ℓ_7

$354: P_{145700} = (35, 35, 34, 1)$ lies on line ℓ_8

$355: P_{147619} = (34, 1, 35, 1)$ lies on line ℓ_3

$356: P_{147620} = (35, 1, 35, 1)$ lies on line ℓ_2

$357: P_{149698} = (1, 34, 35, 1)$ lies on line ℓ_5

$358: P_{149731} = (34, 34, 35, 1)$ lies on line ℓ_8

$359: P_{149732} = (35, 34, 35, 1)$ lies on line ℓ_7

$360: P_{149762} = (1, 35, 35, 1)$ lies on line ℓ_4

$361: P_{149795} = (34, 35, 35, 1)$ lies on line ℓ_6

$362: P_{151717} = (36, 1, 36, 1)$ lies on line ℓ_2

$363: P_{151718} = (37, 1, 36, 1)$ lies on line ℓ_3

$364: P_{153922} = (1, 36, 36, 1)$ lies on line ℓ_4

$365: P_{153958} = (37, 36, 36, 1)$ lies on line ℓ_6

$366: P_{153986} = (1, 37, 36, 1)$ lies on line ℓ_5

$367: P_{154021} = (36, 37, 36, 1)$ lies on line ℓ_7

$368: P_{154022} = (37, 37, 36, 1)$ lies on line ℓ_8

$369: P_{155813} = (36, 1, 37, 1)$ lies on line ℓ_3

$370: P_{155814} = (37, 1, 37, 1)$ lies on line ℓ_2

$371: P_{158018} = (1, 36, 37, 1)$ lies on line ℓ_5

$372: P_{158053} = (36, 36, 37, 1)$ lies on line ℓ_8

$373: P_{158054} = (37, 36, 37, 1)$ lies on line ℓ_7

$374: P_{158082} = (1, 37, 37, 1)$ lies on line ℓ_4

$375: P_{158117} = (36, 37, 37, 1)$ lies on line ℓ_6

$376: P_{159911} = (38, 1, 38, 1)$ lies on line ℓ_2

$377: P_{159912} = (39, 1, 38, 1)$ lies on line ℓ_3

$378: P_{162242} = (1, 38, 38, 1)$ lies on line ℓ_4

$379: P_{162280} = (39, 38, 38, 1)$ lies on line ℓ_6

$380: P_{162306} = (1, 39, 38, 1)$ lies on line ℓ_5

$381: P_{162343} = (38, 39, 38, 1)$ lies on line ℓ_7

$382: P_{162344} = (39, 39, 38, 1)$ lies on line ℓ_8

$383: P_{164007} = (38, 1, 39, 1)$ lies on line ℓ_3

$384: P_{164008} = (39, 1, 39, 1)$ lies on line ℓ_2

$385: P_{166338} = (1, 38, 39, 1)$ lies on line ℓ_5

$386: P_{166375} = (38, 38, 39, 1)$ lies on line ℓ_8

$387: P_{166376} = (39, 38, 39, 1)$ lies on line ℓ_7

$388: P_{166402} = (1, 39, 39, 1)$ lies on line ℓ_4

$389: P_{166439} = (38, 39, 39, 1)$ lies on line ℓ_6

$390: P_{168105} = (40, 1, 40, 1)$ lies on line ℓ_2

$391: P_{168106} = (41, 1, 40, 1)$ lies on line ℓ_3

$392: P_{170562} = (1, 40, 40, 1)$ lies on line ℓ_4

$393: P_{170602} = (41, 40, 40, 1)$ lies on line ℓ_6

$394: P_{170626} = (1, 41, 40, 1)$ lies on line ℓ_5

$395: P_{170665} = (40, 41, 40, 1)$ lies on line ℓ_7

$396: P_{170666} = (41, 41, 40, 1)$ lies on line ℓ_8

$397: P_{172201} = (40, 1, 41, 1)$ lies on line ℓ_3

$398: P_{172202} = (41, 1, 41, 1)$ lies on line ℓ_2

$399: P_{174658} = (1, 40, 41, 1)$ lies on line ℓ_5

$400: P_{174697} = (40, 40, 41, 1)$ lies on line ℓ_8

$401: P_{174698} = (41, 40, 41, 1)$ lies on line ℓ_7

$402: P_{174722} = (1, 41, 41, 1)$ lies on line ℓ_4

$403: P_{174761} = (40, 41, 41, 1)$ lies on line ℓ_6

$404: P_{176299} = (42, 1, 42, 1)$ lies on line ℓ_2

$405: P_{176300} = (43, 1, 42, 1)$ lies on line ℓ_3

$406: P_{178882} = (1, 42, 42, 1)$ lies on line ℓ_4

$407: P_{178924} = (43, 42, 42, 1)$ lies on line ℓ_6

$408: P_{178946} = (1, 43, 42, 1)$ lies on line ℓ_5

$409: P_{178987} = (42, 43, 42, 1)$ lies on line ℓ_7

$410: P_{178988} = (43, 43, 42, 1)$ lies on line ℓ_8

$411: P_{180395} = (42, 1, 43, 1)$ lies on line ℓ_3

$412: P_{180396} = (43, 1, 43, 1)$ lies on line ℓ_2

$413: P_{182978} = (1, 42, 43, 1)$ lies on line ℓ_5

$414: P_{183019} = (42, 42, 43, 1)$ lies on line ℓ_8

$415: P_{183020} = (43, 42, 43, 1)$ lies on line ℓ_7

$416: P_{183042} = (1, 43, 43, 1)$ lies on line ℓ_4

$417: P_{183083} = (42, 43, 43, 1)$ lies on line ℓ_6

$418: P_{184493} = (44, 1, 44, 1)$ lies on line ℓ_2

$419: P_{184494} = (45, 1, 44, 1)$ lies on line ℓ_3

$420: P_{187202} = (1, 44, 44, 1)$ lies on line ℓ_4

$421: P_{187246} = (45, 44, 44, 1)$ lies on line ℓ_6

$422: P_{187266} = (1, 45, 44, 1)$ lies on line ℓ_5

$423: P_{187309} = (44, 45, 44, 1)$ lies on line ℓ_7

$424: P_{187310} = (45, 45, 44, 1)$ lies on line ℓ_8

$425: P_{188589} = (44, 1, 45, 1)$ lies on line ℓ_3

$426: P_{188590} = (45, 1, 45, 1)$ lies on line ℓ_2

$427: P_{191298} = (1, 44, 45, 1)$ lies on line ℓ_5

$428: P_{191341} = (44, 44, 45, 1)$ lies on line ℓ_8

$429: P_{191342} = (45, 44, 45, 1)$ lies on line ℓ_7

$430: P_{191362} = (1, 45, 45, 1)$ lies on line ℓ_4

$431: P_{191405} = (44, 45, 45, 1)$ lies on line ℓ_6

$432: P_{192687} = (46, 1, 46, 1)$ lies on line ℓ_2
$433: P_{192688} = (47, 1, 46, 1)$ lies on line ℓ_3
$434: P_{195522} = (1, 46, 46, 1)$ lies on line ℓ_4
$435: P_{195568} = (47, 46, 46, 1)$ lies on line ℓ_6
$436: P_{195586} = (1, 47, 46, 1)$ lies on line ℓ_5
$437: P_{195631} = (46, 47, 46, 1)$ lies on line ℓ_7
$438: P_{195632} = (47, 47, 46, 1)$ lies on line ℓ_8
$439: P_{196783} = (46, 1, 47, 1)$ lies on line ℓ_3
$440: P_{196784} = (47, 1, 47, 1)$ lies on line ℓ_2
$441: P_{199618} = (1, 46, 47, 1)$ lies on line ℓ_5
$442: P_{199663} = (46, 46, 47, 1)$ lies on line ℓ_8
$443: P_{199664} = (47, 46, 47, 1)$ lies on line ℓ_7
$444: P_{199682} = (1, 47, 47, 1)$ lies on line ℓ_4
$445: P_{199727} = (46, 47, 47, 1)$ lies on line ℓ_6
$446: P_{200881} = (48, 1, 48, 1)$ lies on line ℓ_2
$447: P_{200882} = (49, 1, 48, 1)$ lies on line ℓ_3
$448: P_{203842} = (1, 48, 48, 1)$ lies on line ℓ_4
$449: P_{203890} = (49, 48, 48, 1)$ lies on line ℓ_6
$450: P_{203906} = (1, 49, 48, 1)$ lies on line ℓ_5
$451: P_{203953} = (48, 49, 48, 1)$ lies on line ℓ_7
$452: P_{203954} = (49, 49, 48, 1)$ lies on line ℓ_8
$453: P_{204977} = (48, 1, 49, 1)$ lies on line ℓ_3
$454: P_{204978} = (49, 1, 49, 1)$ lies on line ℓ_2
$455: P_{207938} = (1, 48, 49, 1)$ lies on line ℓ_5
$456: P_{207985} = (48, 48, 49, 1)$ lies on line ℓ_8
$457: P_{207986} = (49, 48, 49, 1)$ lies on line ℓ_7
$458: P_{208002} = (1, 49, 49, 1)$ lies on line ℓ_4
$459: P_{208049} = (48, 49, 49, 1)$ lies on line ℓ_6
$460: P_{209075} = (50, 1, 50, 1)$ lies on line ℓ_2
$461: P_{209076} = (51, 1, 50, 1)$ lies on line ℓ_3
$462: P_{212162} = (1, 50, 50, 1)$ lies on line ℓ_4
$463: P_{212212} = (51, 50, 50, 1)$ lies on line ℓ_6
$464: P_{212226} = (1, 51, 50, 1)$ lies on line ℓ_5
$465: P_{212275} = (50, 51, 50, 1)$ lies on line ℓ_7
$466: P_{212276} = (51, 51, 50, 1)$ lies on line ℓ_8
$467: P_{213171} = (50, 1, 51, 1)$ lies on line ℓ_3
$468: P_{213172} = (51, 1, 51, 1)$ lies on line ℓ_2
$469: P_{216258} = (1, 50, 51, 1)$ lies on line ℓ_5
$470: P_{216307} = (50, 50, 51, 1)$ lies on line ℓ_8
$471: P_{216308} = (51, 50, 51, 1)$ lies on line ℓ_7
$472: P_{216322} = (1, 51, 51, 1)$ lies on line ℓ_4
$473: P_{216371} = (50, 51, 51, 1)$ lies on line ℓ_6
$474: P_{217269} = (52, 1, 52, 1)$ lies on line ℓ_2
$475: P_{217270} = (53, 1, 52, 1)$ lies on line ℓ_3
$476: P_{220482} = (1, 52, 52, 1)$ lies on line ℓ_4
$477: P_{220534} = (53, 52, 52, 1)$ lies on line ℓ_6
$478: P_{220546} = (1, 53, 52, 1)$ lies on line ℓ_5
$479: P_{220597} = (52, 53, 52, 1)$ lies on line ℓ_7
$480: P_{220598} = (53, 53, 52, 1)$ lies on line ℓ_8
$481: P_{221365} = (52, 1, 53, 1)$ lies on line ℓ_3
$482: P_{221366} = (53, 1, 53, 1)$ lies on line ℓ_2
$483: P_{224578} = (1, 52, 53, 1)$ lies on line ℓ_5
$484: P_{224629} = (52, 52, 53, 1)$ lies on line ℓ_8
$485: P_{224630} = (53, 52, 53, 1)$ lies on line ℓ_7

$486: P_{224642} = (1, 53, 53, 1)$ lies on line ℓ_4
$487: P_{224693} = (52, 53, 53, 1)$ lies on line ℓ_6
$488: P_{225463} = (54, 1, 54, 1)$ lies on line ℓ_2
$489: P_{225464} = (55, 1, 54, 1)$ lies on line ℓ_3
$490: P_{228802} = (1, 54, 54, 1)$ lies on line ℓ_4
$491: P_{228856} = (55, 54, 54, 1)$ lies on line ℓ_6
$492: P_{228866} = (1, 55, 54, 1)$ lies on line ℓ_5
$493: P_{228919} = (54, 55, 54, 1)$ lies on line ℓ_7
$494: P_{228920} = (55, 55, 54, 1)$ lies on line ℓ_8
$495: P_{229559} = (54, 1, 55, 1)$ lies on line ℓ_3
$496: P_{229560} = (55, 1, 55, 1)$ lies on line ℓ_2
$497: P_{232898} = (1, 54, 55, 1)$ lies on line ℓ_5
$498: P_{232951} = (54, 54, 55, 1)$ lies on line ℓ_8
$499: P_{232952} = (55, 54, 55, 1)$ lies on line ℓ_7
$500: P_{232962} = (1, 55, 55, 1)$ lies on line ℓ_4
$501: P_{233015} = (54, 55, 55, 1)$ lies on line ℓ_6
$502: P_{233657} = (56, 1, 56, 1)$ lies on line ℓ_2
$503: P_{233658} = (57, 1, 56, 1)$ lies on line ℓ_3
$504: P_{237122} = (1, 56, 56, 1)$ lies on line ℓ_4
$505: P_{237178} = (57, 56, 56, 1)$ lies on line ℓ_6
$506: P_{237186} = (1, 57, 56, 1)$ lies on line ℓ_5
$507: P_{237241} = (56, 57, 56, 1)$ lies on line ℓ_7
$508: P_{237242} = (57, 57, 56, 1)$ lies on line ℓ_8
$509: P_{237753} = (56, 1, 57, 1)$ lies on line ℓ_3
$510: P_{237754} = (57, 1, 57, 1)$ lies on line ℓ_2
$511: P_{241218} = (1, 56, 57, 1)$ lies on line ℓ_5
$512: P_{241273} = (56, 56, 57, 1)$ lies on line ℓ_8
$513: P_{241274} = (57, 56, 57, 1)$ lies on line ℓ_7
$514: P_{241282} = (1, 57, 57, 1)$ lies on line ℓ_4
$515: P_{241337} = (56, 57, 57, 1)$ lies on line ℓ_6
$516: P_{241851} = (58, 1, 58, 1)$ lies on line ℓ_2
$517: P_{241852} = (59, 1, 58, 1)$ lies on line ℓ_3
$518: P_{245442} = (1, 58, 58, 1)$ lies on line ℓ_4
$519: P_{245500} = (59, 58, 58, 1)$ lies on line ℓ_6
$520: P_{245506} = (1, 59, 58, 1)$ lies on line ℓ_5
$521: P_{245563} = (58, 59, 58, 1)$ lies on line ℓ_7
$522: P_{245564} = (59, 59, 58, 1)$ lies on line ℓ_8
$523: P_{245947} = (58, 1, 59, 1)$ lies on line ℓ_3
$524: P_{245948} = (59, 1, 59, 1)$ lies on line ℓ_2
$525: P_{249538} = (1, 58, 59, 1)$ lies on line ℓ_5
$526: P_{249595} = (58, 58, 59, 1)$ lies on line ℓ_8
$527: P_{249596} = (59, 58, 59, 1)$ lies on line ℓ_7
$528: P_{249602} = (1, 59, 59, 1)$ lies on line ℓ_4
$529: P_{249659} = (58, 59, 59, 1)$ lies on line ℓ_6
$530: P_{250045} = (60, 1, 60, 1)$ lies on line ℓ_2
$531: P_{250046} = (61, 1, 60, 1)$ lies on line ℓ_3
$532: P_{253762} = (1, 60, 60, 1)$ lies on line ℓ_4
$533: P_{253822} = (61, 60, 60, 1)$ lies on line ℓ_6
$534: P_{253826} = (1, 61, 60, 1)$ lies on line ℓ_5
$535: P_{253885} = (60, 61, 60, 1)$ lies on line ℓ_7
$536: P_{253886} = (61, 61, 60, 1)$ lies on line ℓ_8
$537: P_{254141} = (60, 1, 61, 1)$ lies on line ℓ_3
$538: P_{254142} = (61, 1, 61, 1)$ lies on line ℓ_2
$539: P_{257858} = (1, 60, 61, 1)$ lies on line ℓ_5

$540 : P_{257917} = (60, 60, 61, 1)$ lies on line ℓ_8
$541 : P_{257918} = (61, 60, 61, 1)$ lies on line ℓ_7
$542 : P_{257922} = (1, 61, 61, 1)$ lies on line ℓ_4
$543 : P_{257981} = (60, 61, 61, 1)$ lies on line ℓ_6
$544 : P_{258239} = (62, 1, 62, 1)$ lies on line ℓ_2
$545 : P_{258240} = (63, 1, 62, 1)$ lies on line ℓ_3
$546 : P_{262082} = (1, 62, 62, 1)$ lies on line ℓ_4
$547 : P_{262144} = (63, 62, 62, 1)$ lies on line ℓ_6
$548 : P_{262146} = (1, 63, 62, 1)$ lies on line ℓ_5
$549 : P_{262207} = (62, 63, 62, 1)$ lies on line ℓ_7

$550 : P_{262208} = (63, 63, 62, 1)$ lies on line ℓ_8
$551 : P_{262335} = (62, 1, 63, 1)$ lies on line ℓ_3
$552 : P_{262336} = (63, 1, 63, 1)$ lies on line ℓ_2
$553 : P_{266178} = (1, 62, 63, 1)$ lies on line ℓ_5
$554 : P_{266239} = (62, 62, 63, 1)$ lies on line ℓ_8
$555 : P_{266240} = (63, 62, 63, 1)$ lies on line ℓ_7
$556 : P_{266242} = (1, 63, 63, 1)$ lies on line ℓ_4
$557 : P_{266303} = (62, 63, 63, 1)$ lies on line ℓ_6

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
-+-----------------
0|0 1 1 0 1 0 0 0 1
1|1 0 0 1 0 1 1 1 0
2|1 0 0 1 1 0 0 1 0
3|0 1 1 0 0 1 1 0 1
4|1 0 1 0 0 1 1 0 0
5|0 1 0 1 1 0 0 1 1
6|0 1 0 1 1 0 0 1 1
7|0 1 1 0 0 1 1 0 1
8|1 0 0 1 0 1 1 1 0
```

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_8
in point	P_5	P_4	P_4	P_{8258}

Line 1 intersects

Line	ℓ_0	ℓ_3	ℓ_5	ℓ_6	ℓ_7
in point	P_5	P_{8322}	P_{8259}	P_{8322}	P_{8259}

Line 2 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_7
in point	P_4	P_{68}	P_4	P_{4226}

Line 3 intersects

Line	ℓ_1	ℓ_2	ℓ_5	ℓ_6	ℓ_8
in point	P_{8322}	P_{68}	P_{4227}	P_{8322}	P_{4227}

Line 4 intersects

Line	ℓ_0	ℓ_2	ℓ_5	ℓ_6
in point	P_4	P_4	P_{131}	P_{4163}

Line 5 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_7	ℓ_8
in point	P_{8259}	P_{4227}	P_{131}	P_{8259}	P_{4227}

Line 6 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_7	ℓ_8
in point	P_{8322}	P_{8322}	P_{4163}	P_{132}	P_{132}

Line 7 intersects

Line	ℓ_1	ℓ_2	ℓ_5	ℓ_6	ℓ_8
in point	P_{8259}	P_{4226}	P_{8259}	P_{132}	P_{132}

Line 8 intersects

Line	ℓ_0	ℓ_3	ℓ_5	ℓ_6	ℓ_7
in point	P_{8258}	P_{4227}	P_{4227}	P_{132}	P_{132}

The surface has 4289 points:
Too many to print.