

Rank-73737 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_1^3 + X_2^3 + X_0X_3^2 + X_0X_1X_2 = 0$$

(0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)

The point rank of the equation over GF(64) is 1090789509

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:

$$0 : P_0 = \mathbf{P}(1, 0, 0, 0) = \mathbf{P}(1, 0, 0, 0)$$

$$1 : P_4 = \mathbf{P}(1, 1, 1, 1) = \mathbf{P}(1, 1, 1, 1)$$

$$2 : P_{237186} = \mathbf{P}(1, \epsilon^{21}, \epsilon^{42}, 1) = \mathbf{P}(1, 57, 56, 1)$$

$$3 : P_{241218} = \mathbf{P}(1, \epsilon^{42}, \epsilon^{21}, 1) = \mathbf{P}(1, 56, 57, 1)$$

The 9 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{65} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{65} = \mathbf{Pl}(1, 0, 1, 0, 1, 0)_{4353}$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & \epsilon^{21} & \epsilon^{42} \end{bmatrix}_{3641} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 57 & 56 \end{bmatrix}_{3641} = \mathbf{Pl}(57, 0, 56, 0, 1, 0)_{11394} \\
\ell_2 &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & \epsilon^{42} & \epsilon^{21} \end{bmatrix}_{3704} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 56 & 57 \end{bmatrix}_{3704} = \mathbf{Pl}(56, 0, 57, 0, 1, 0)_{11520} \\
\ell_3 &= \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \mathbf{Pl}(0, 1, 0, 1, 0, 0)_{193} \\
\ell_4 &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{270466} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{270466} = \mathbf{Pl}(1, 1, 1, 1, 0, 1)_{286530} \\
\ell_5 &= \begin{bmatrix} 0 & 1 & \epsilon^{21} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047225} = \begin{bmatrix} 0 & 1 & 57 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047225} = \mathbf{Pl}(0, 57, 0, 1, 0, 0)_{249} \\
\ell_6 &= \begin{bmatrix} 1 & 0 & \epsilon^{42} & 1 \\ 0 & 1 & \epsilon^{21} & 0 \end{bmatrix}_{499377} = \begin{bmatrix} 1 & 0 & 56 & 1 \\ 0 & 1 & 57 & 0 \end{bmatrix}_{499377} = \mathbf{Pl}(57, 56, 56, 57, 0, 1)_{512315} \\
\ell_7 &= \begin{bmatrix} 0 & 1 & \epsilon^{42} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047160} = \begin{bmatrix} 0 & 1 & 56 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047160} = \mathbf{Pl}(0, 56, 0, 1, 0, 0)_{248} \\
\ell_8 &= \begin{bmatrix} 1 & 0 & \epsilon^{21} & 1 \\ 0 & 1 & \epsilon^{42} & 0 \end{bmatrix}_{503537} = \begin{bmatrix} 1 & 0 & 57 & 1 \\ 0 & 1 & 56 & 0 \end{bmatrix}_{503537} = \mathbf{Pl}(56, 57, 57, 56, 0, 1)_{508408}
\end{aligned}$$

Rank of lines: (65, 3641, 3704, 17043585, 270466, 17047225, 499377, 17047160, 503537)

Rank of points on Klein quadric: (4353, 11394, 11520, 193, 286530, 249, 512315, 248, 508408)

Eckardt Points

The surface has 5 Eckardt points:

$$\begin{aligned}
0 : P_0 &= \mathbf{P}(1, 0, 0, 0) = \mathbf{P}(1, 0, 0, 0), \\
1 : P_3 &= \mathbf{P}(0, 0, 0, 1) = \mathbf{P}(0, 0, 0, 1), \\
2 : P_4 &= \mathbf{P}(1, 1, 1, 1) = \mathbf{P}(1, 1, 1, 1), \\
3 : P_{237186} &= \mathbf{P}(1, \epsilon^{21}, \epsilon^{42}, 1) = \mathbf{P}(1, 57, 56, 1), \\
4 : P_{241218} &= \mathbf{P}(1, \epsilon^{42}, \epsilon^{21}, 1) = \mathbf{P}(1, 56, 57, 1).
\end{aligned}$$

Double Points

The surface has 6 Double points:

The double points on the surface are:

$$\begin{aligned}
P_{8322} &= (0, 1, 1, 1) = \ell_0 \cap \ell_3 & P_{3651} &= (0, 56, 1, 0) = \ell_5 \cap \ell_6 \\
P_{237185} &= (0, 57, 56, 1) = \ell_1 \cap \ell_5 & P_{3715} &= (0, 57, 1, 0) = \ell_7 \cap \ell_8 \\
P_{241217} &= (0, 56, 57, 1) = \ell_2 \cap \ell_7 \\
P_{131} &= (0, 1, 1, 0) = \ell_3 \cap \ell_4
\end{aligned}$$

Single Points

The surface has 558 single points:

The single points on the surface are:

$$\begin{aligned}
0 : P_{4227} &= (1, 1, 0, 1) \text{ lies on line } \ell_4 & 3 : P_{8259} &= (1, 0, 1, 1) \text{ lies on line } \ell_4 \\
1 : P_{7747} &= (1, 56, 0, 1) \text{ lies on line } \ell_8 & 4 : P_{8323} &= (2, 1, 1, 1) \text{ lies on line } \ell_0 \\
2 : P_{7811} &= (1, 57, 0, 1) \text{ lies on line } \ell_6 & 5 : P_{8324} &= (3, 1, 1, 1) \text{ lies on line } \ell_0
\end{aligned}$$

6 : $P_{8325} = (4, 1, 1, 1)$ lies on line ℓ_0
 7 : $P_{8326} = (5, 1, 1, 1)$ lies on line ℓ_0
 8 : $P_{8327} = (6, 1, 1, 1)$ lies on line ℓ_0
 9 : $P_{8328} = (7, 1, 1, 1)$ lies on line ℓ_0
 10 : $P_{8329} = (8, 1, 1, 1)$ lies on line ℓ_0
 11 : $P_{8330} = (9, 1, 1, 1)$ lies on line ℓ_0
 12 : $P_{8331} = (10, 1, 1, 1)$ lies on line ℓ_0
 13 : $P_{8332} = (11, 1, 1, 1)$ lies on line ℓ_0
 14 : $P_{8333} = (12, 1, 1, 1)$ lies on line ℓ_0
 15 : $P_{8334} = (13, 1, 1, 1)$ lies on line ℓ_0
 16 : $P_{8335} = (14, 1, 1, 1)$ lies on line ℓ_0
 17 : $P_{8336} = (15, 1, 1, 1)$ lies on line ℓ_0
 18 : $P_{8337} = (16, 1, 1, 1)$ lies on line ℓ_0
 19 : $P_{8338} = (17, 1, 1, 1)$ lies on line ℓ_0
 20 : $P_{8339} = (18, 1, 1, 1)$ lies on line ℓ_0
 21 : $P_{8340} = (19, 1, 1, 1)$ lies on line ℓ_0
 22 : $P_{8341} = (20, 1, 1, 1)$ lies on line ℓ_0
 23 : $P_{8342} = (21, 1, 1, 1)$ lies on line ℓ_0
 24 : $P_{8343} = (22, 1, 1, 1)$ lies on line ℓ_0
 25 : $P_{8344} = (23, 1, 1, 1)$ lies on line ℓ_0
 26 : $P_{8345} = (24, 1, 1, 1)$ lies on line ℓ_0
 27 : $P_{8346} = (25, 1, 1, 1)$ lies on line ℓ_0
 28 : $P_{8347} = (26, 1, 1, 1)$ lies on line ℓ_0
 29 : $P_{8348} = (27, 1, 1, 1)$ lies on line ℓ_0
 30 : $P_{8349} = (28, 1, 1, 1)$ lies on line ℓ_0
 31 : $P_{8350} = (29, 1, 1, 1)$ lies on line ℓ_0
 32 : $P_{8351} = (30, 1, 1, 1)$ lies on line ℓ_0
 33 : $P_{8352} = (31, 1, 1, 1)$ lies on line ℓ_0
 34 : $P_{8353} = (32, 1, 1, 1)$ lies on line ℓ_0
 35 : $P_{8354} = (33, 1, 1, 1)$ lies on line ℓ_0
 36 : $P_{8355} = (34, 1, 1, 1)$ lies on line ℓ_0
 37 : $P_{8356} = (35, 1, 1, 1)$ lies on line ℓ_0
 38 : $P_{8357} = (36, 1, 1, 1)$ lies on line ℓ_0
 39 : $P_{8358} = (37, 1, 1, 1)$ lies on line ℓ_0
 40 : $P_{8359} = (38, 1, 1, 1)$ lies on line ℓ_0
 41 : $P_{8360} = (39, 1, 1, 1)$ lies on line ℓ_0
 42 : $P_{8361} = (40, 1, 1, 1)$ lies on line ℓ_0
 43 : $P_{8362} = (41, 1, 1, 1)$ lies on line ℓ_0
 44 : $P_{8363} = (42, 1, 1, 1)$ lies on line ℓ_0
 45 : $P_{8364} = (43, 1, 1, 1)$ lies on line ℓ_0
 46 : $P_{8365} = (44, 1, 1, 1)$ lies on line ℓ_0
 47 : $P_{8366} = (45, 1, 1, 1)$ lies on line ℓ_0
 48 : $P_{8367} = (46, 1, 1, 1)$ lies on line ℓ_0
 49 : $P_{8368} = (47, 1, 1, 1)$ lies on line ℓ_0
 50 : $P_{8369} = (48, 1, 1, 1)$ lies on line ℓ_0
 51 : $P_{8370} = (49, 1, 1, 1)$ lies on line ℓ_0
 52 : $P_{8371} = (50, 1, 1, 1)$ lies on line ℓ_0
 53 : $P_{8372} = (51, 1, 1, 1)$ lies on line ℓ_0
 54 : $P_{8373} = (52, 1, 1, 1)$ lies on line ℓ_0
 55 : $P_{8374} = (53, 1, 1, 1)$ lies on line ℓ_0
 56 : $P_{8375} = (54, 1, 1, 1)$ lies on line ℓ_0
 57 : $P_{8376} = (55, 1, 1, 1)$ lies on line ℓ_0
 58 : $P_{8377} = (56, 1, 1, 1)$ lies on line ℓ_0
 59 : $P_{8378} = (57, 1, 1, 1)$ lies on line ℓ_0

60 : $P_{8379} = (58, 1, 1, 1)$ lies on line ℓ_0
 61 : $P_{8380} = (59, 1, 1, 1)$ lies on line ℓ_0
 62 : $P_{8381} = (60, 1, 1, 1)$ lies on line ℓ_0
 63 : $P_{8382} = (61, 1, 1, 1)$ lies on line ℓ_0
 64 : $P_{8383} = (62, 1, 1, 1)$ lies on line ℓ_0
 65 : $P_{8384} = (63, 1, 1, 1)$ lies on line ℓ_0
 66 : $P_{11841} = (0, 56, 1, 1)$ lies on line ℓ_5
 67 : $P_{11905} = (0, 57, 1, 1)$ lies on line ℓ_7
 68 : $P_{12481} = (0, 2, 2, 1)$ lies on line ℓ_3
 69 : $P_{12546} = (1, 3, 2, 1)$ lies on line ℓ_4
 70 : $P_{13441} = (0, 17, 2, 1)$ lies on line ℓ_5
 71 : $P_{13569} = (0, 19, 2, 1)$ lies on line ℓ_7
 72 : $P_{14914} = (1, 40, 2, 1)$ lies on line ℓ_6
 73 : $P_{15106} = (1, 43, 2, 1)$ lies on line ℓ_8
 74 : $P_{16578} = (1, 2, 3, 1)$ lies on line ℓ_4
 75 : $P_{16641} = (0, 3, 3, 1)$ lies on line ℓ_3
 76 : $P_{17474} = (1, 16, 3, 1)$ lies on line ℓ_6
 77 : $P_{17602} = (1, 18, 3, 1)$ lies on line ℓ_8
 78 : $P_{19073} = (0, 41, 3, 1)$ lies on line ℓ_5
 79 : $P_{19137} = (0, 42, 3, 1)$ lies on line ℓ_7
 80 : $P_{20801} = (0, 4, 4, 1)$ lies on line ℓ_3
 81 : $P_{20866} = (1, 5, 4, 1)$ lies on line ℓ_4
 82 : $P_{22274} = (1, 27, 4, 1)$ lies on line ℓ_6
 83 : $P_{22466} = (1, 30, 4, 1)$ lies on line ℓ_8
 84 : $P_{22721} = (0, 34, 4, 1)$ lies on line ℓ_5
 85 : $P_{22977} = (0, 38, 4, 1)$ lies on line ℓ_7
 86 : $P_{24898} = (1, 4, 5, 1)$ lies on line ℓ_4
 87 : $P_{24961} = (0, 5, 5, 1)$ lies on line ℓ_3
 88 : $P_{26305} = (0, 26, 5, 1)$ lies on line ℓ_5
 89 : $P_{26625} = (0, 31, 5, 1)$ lies on line ℓ_7
 90 : $P_{26882} = (1, 35, 5, 1)$ lies on line ℓ_6
 91 : $P_{27138} = (1, 39, 5, 1)$ lies on line ℓ_8
 92 : $P_{29121} = (0, 6, 6, 1)$ lies on line ℓ_3
 93 : $P_{29186} = (1, 7, 6, 1)$ lies on line ℓ_4
 94 : $P_{29378} = (1, 10, 6, 1)$ lies on line ℓ_6
 95 : $P_{29570} = (1, 13, 6, 1)$ lies on line ℓ_8
 96 : $P_{32001} = (0, 51, 6, 1)$ lies on line ℓ_5
 97 : $P_{32129} = (0, 53, 6, 1)$ lies on line ℓ_7
 98 : $P_{33218} = (1, 6, 7, 1)$ lies on line ℓ_4
 99 : $P_{33281} = (0, 7, 7, 1)$ lies on line ℓ_3
 100 : $P_{33537} = (0, 11, 7, 1)$ lies on line ℓ_5
 101 : $P_{33601} = (0, 12, 7, 1)$ lies on line ℓ_7
 102 : $P_{36034} = (1, 50, 7, 1)$ lies on line ℓ_6
 103 : $P_{36162} = (1, 52, 7, 1)$ lies on line ℓ_8
 104 : $P_{37441} = (0, 8, 8, 1)$ lies on line ℓ_3
 105 : $P_{37506} = (1, 9, 8, 1)$ lies on line ℓ_4
 106 : $P_{38274} = (1, 21, 8, 1)$ lies on line ℓ_8
 107 : $P_{38722} = (1, 28, 8, 1)$ lies on line ℓ_6
 108 : $P_{39297} = (0, 37, 8, 1)$ lies on line ℓ_5
 109 : $P_{39809} = (0, 45, 8, 1)$ lies on line ℓ_7
 110 : $P_{41538} = (1, 8, 9, 1)$ lies on line ℓ_4
 111 : $P_{41601} = (0, 9, 9, 1)$ lies on line ℓ_3
 112 : $P_{42305} = (0, 20, 9, 1)$ lies on line ℓ_7
 113 : $P_{42881} = (0, 29, 9, 1)$ lies on line ℓ_5

114 : $P_{43330} = (1, 36, 9, 1)$ lies on line ℓ_6
115 : $P_{43842} = (1, 44, 9, 1)$ lies on line ℓ_8
116 : $P_{45506} = (1, 6, 10, 1)$ lies on line ℓ_8
117 : $P_{45761} = (0, 10, 10, 1)$ lies on line ℓ_3
118 : $P_{45826} = (1, 11, 10, 1)$ lies on line ℓ_4
119 : $P_{45954} = (1, 13, 10, 1)$ lies on line ℓ_6
120 : $P_{48449} = (0, 52, 10, 1)$ lies on line ℓ_5
121 : $P_{49089} = (0, 62, 10, 1)$ lies on line ℓ_7
122 : $P_{49665} = (0, 7, 11, 1)$ lies on line ℓ_7
123 : $P_{49858} = (1, 10, 11, 1)$ lies on line ℓ_4
124 : $P_{49921} = (0, 11, 11, 1)$ lies on line ℓ_3
125 : $P_{49985} = (0, 12, 11, 1)$ lies on line ℓ_5
126 : $P_{52610} = (1, 53, 11, 1)$ lies on line ℓ_6
127 : $P_{53250} = (1, 63, 11, 1)$ lies on line ℓ_8
128 : $P_{53761} = (0, 7, 12, 1)$ lies on line ℓ_5
129 : $P_{54017} = (0, 11, 12, 1)$ lies on line ℓ_7
130 : $P_{54081} = (0, 12, 12, 1)$ lies on line ℓ_3
131 : $P_{54146} = (1, 13, 12, 1)$ lies on line ℓ_4
132 : $P_{56578} = (1, 51, 12, 1)$ lies on line ℓ_8
133 : $P_{57282} = (1, 62, 12, 1)$ lies on line ℓ_6
134 : $P_{57794} = (1, 6, 13, 1)$ lies on line ℓ_6
135 : $P_{58050} = (1, 10, 13, 1)$ lies on line ℓ_8
136 : $P_{58178} = (1, 12, 13, 1)$ lies on line ℓ_4
137 : $P_{58241} = (0, 13, 13, 1)$ lies on line ℓ_3
138 : $P_{60609} = (0, 50, 13, 1)$ lies on line ℓ_7
139 : $P_{61441} = (0, 63, 13, 1)$ lies on line ℓ_5
140 : $P_{62401} = (0, 14, 14, 1)$ lies on line ℓ_3
141 : $P_{62466} = (1, 15, 14, 1)$ lies on line ℓ_4
142 : $P_{62913} = (0, 22, 14, 1)$ lies on line ℓ_5
143 : $P_{63041} = (0, 24, 14, 1)$ lies on line ℓ_7
144 : $P_{63554} = (1, 32, 14, 1)$ lies on line ℓ_8
145 : $P_{64514} = (1, 47, 14, 1)$ lies on line ℓ_6
146 : $P_{66498} = (1, 14, 15, 1)$ lies on line ℓ_4
147 : $P_{66561} = (0, 15, 15, 1)$ lies on line ℓ_3
148 : $P_{67074} = (1, 23, 15, 1)$ lies on line ℓ_6
149 : $P_{67202} = (1, 25, 15, 1)$ lies on line ℓ_8
150 : $P_{67713} = (0, 33, 15, 1)$ lies on line ℓ_7
151 : $P_{68545} = (0, 46, 15, 1)$ lies on line ℓ_5
152 : $P_{69890} = (1, 3, 16, 1)$ lies on line ℓ_8
153 : $P_{70721} = (0, 16, 16, 1)$ lies on line ℓ_3
154 : $P_{70786} = (1, 17, 16, 1)$ lies on line ℓ_4
155 : $P_{70850} = (1, 18, 16, 1)$ lies on line ℓ_6
156 : $P_{72449} = (0, 43, 16, 1)$ lies on line ℓ_5
157 : $P_{73473} = (0, 59, 16, 1)$ lies on line ℓ_7
158 : $P_{73921} = (0, 2, 17, 1)$ lies on line ℓ_7
159 : $P_{74818} = (1, 16, 17, 1)$ lies on line ℓ_4
160 : $P_{74881} = (0, 17, 17, 1)$ lies on line ℓ_3
161 : $P_{75009} = (0, 19, 17, 1)$ lies on line ℓ_5
162 : $P_{76482} = (1, 42, 17, 1)$ lies on line ℓ_6
163 : $P_{77506} = (1, 58, 17, 1)$ lies on line ℓ_8
164 : $P_{78082} = (1, 3, 18, 1)$ lies on line ℓ_6
165 : $P_{78914} = (1, 16, 18, 1)$ lies on line ℓ_8
166 : $P_{79041} = (0, 18, 18, 1)$ lies on line ℓ_3
167 : $P_{79106} = (1, 19, 18, 1)$ lies on line ℓ_4
168 : $P_{80449} = (0, 40, 18, 1)$ lies on line ℓ_7
169 : $P_{81601} = (0, 58, 18, 1)$ lies on line ℓ_5
170 : $P_{82113} = (0, 2, 19, 1)$ lies on line ℓ_5
171 : $P_{83073} = (0, 17, 19, 1)$ lies on line ℓ_7
172 : $P_{83138} = (1, 18, 19, 1)$ lies on line ℓ_4
173 : $P_{83201} = (0, 19, 19, 1)$ lies on line ℓ_3
174 : $P_{84610} = (1, 41, 19, 1)$ lies on line ℓ_8
175 : $P_{85762} = (1, 59, 19, 1)$ lies on line ℓ_6
176 : $P_{86657} = (0, 9, 20, 1)$ lies on line ℓ_5
177 : $P_{87361} = (0, 20, 20, 1)$ lies on line ℓ_3
178 : $P_{87426} = (1, 21, 20, 1)$ lies on line ℓ_4
179 : $P_{87937} = (0, 29, 20, 1)$ lies on line ℓ_7
180 : $P_{88450} = (1, 37, 20, 1)$ lies on line ℓ_8
181 : $P_{89154} = (1, 48, 20, 1)$ lies on line ℓ_6
182 : $P_{90690} = (1, 8, 21, 1)$ lies on line ℓ_6
183 : $P_{91458} = (1, 20, 21, 1)$ lies on line ℓ_4
184 : $P_{91521} = (0, 21, 21, 1)$ lies on line ℓ_3
185 : $P_{91970} = (1, 28, 21, 1)$ lies on line ℓ_8
186 : $P_{92481} = (0, 36, 21, 1)$ lies on line ℓ_7
187 : $P_{93313} = (0, 49, 21, 1)$ lies on line ℓ_5
188 : $P_{95169} = (0, 14, 22, 1)$ lies on line ℓ_7
189 : $P_{95681} = (0, 22, 22, 1)$ lies on line ℓ_3
190 : $P_{95746} = (1, 23, 22, 1)$ lies on line ℓ_4
191 : $P_{95809} = (0, 24, 22, 1)$ lies on line ℓ_5
192 : $P_{96386} = (1, 33, 22, 1)$ lies on line ℓ_6
193 : $P_{97730} = (1, 54, 22, 1)$ lies on line ℓ_8
194 : $P_{99330} = (1, 15, 23, 1)$ lies on line ℓ_8
195 : $P_{99778} = (1, 22, 23, 1)$ lies on line ℓ_4
196 : $P_{99841} = (0, 23, 23, 1)$ lies on line ℓ_3
197 : $P_{99970} = (1, 25, 23, 1)$ lies on line ℓ_6
198 : $P_{100417} = (0, 32, 23, 1)$ lies on line ℓ_5
199 : $P_{101889} = (0, 55, 23, 1)$ lies on line ℓ_7
200 : $P_{103361} = (0, 14, 24, 1)$ lies on line ℓ_5
201 : $P_{103873} = (0, 22, 24, 1)$ lies on line ℓ_7
202 : $P_{104001} = (0, 24, 24, 1)$ lies on line ℓ_3
203 : $P_{104066} = (1, 25, 24, 1)$ lies on line ℓ_4
204 : $P_{105410} = (1, 46, 24, 1)$ lies on line ℓ_8
205 : $P_{105986} = (1, 55, 24, 1)$ lies on line ℓ_6
206 : $P_{107522} = (1, 15, 25, 1)$ lies on line ℓ_6
207 : $P_{108034} = (1, 23, 25, 1)$ lies on line ℓ_8
208 : $P_{108098} = (1, 24, 25, 1)$ lies on line ℓ_4
209 : $P_{108161} = (0, 25, 25, 1)$ lies on line ℓ_3
210 : $P_{109569} = (0, 47, 25, 1)$ lies on line ℓ_7
211 : $P_{110017} = (0, 54, 25, 1)$ lies on line ℓ_5
212 : $P_{110977} = (0, 5, 26, 1)$ lies on line ℓ_7
213 : $P_{112321} = (0, 26, 26, 1)$ lies on line ℓ_3
214 : $P_{112386} = (1, 27, 26, 1)$ lies on line ℓ_4
215 : $P_{112641} = (0, 31, 26, 1)$ lies on line ℓ_5
216 : $P_{113090} = (1, 38, 26, 1)$ lies on line ℓ_6
217 : $P_{114562} = (1, 61, 26, 1)$ lies on line ℓ_8
218 : $P_{115010} = (1, 4, 27, 1)$ lies on line ℓ_8
219 : $P_{116418} = (1, 26, 27, 1)$ lies on line ℓ_4
220 : $P_{116481} = (0, 27, 27, 1)$ lies on line ℓ_3
221 : $P_{116674} = (1, 30, 27, 1)$ lies on line ℓ_6

222 : $P_{117249} = (0, 39, 27, 1)$ lies on line ℓ_5
 223 : $P_{118593} = (0, 60, 27, 1)$ lies on line ℓ_7
 224 : $P_{119362} = (1, 8, 28, 1)$ lies on line ℓ_8
 225 : $P_{120194} = (1, 21, 28, 1)$ lies on line ℓ_6
 226 : $P_{120641} = (0, 28, 28, 1)$ lies on line ℓ_3
 227 : $P_{120706} = (1, 29, 28, 1)$ lies on line ℓ_4
 228 : $P_{121665} = (0, 44, 28, 1)$ lies on line ℓ_5
 229 : $P_{121921} = (0, 48, 28, 1)$ lies on line ℓ_7
 230 : $P_{123521} = (0, 9, 29, 1)$ lies on line ℓ_7
 231 : $P_{124225} = (0, 20, 29, 1)$ lies on line ℓ_5
 232 : $P_{124738} = (1, 28, 29, 1)$ lies on line ℓ_4
 233 : $P_{124801} = (0, 29, 29, 1)$ lies on line ℓ_3
 234 : $P_{125826} = (1, 45, 29, 1)$ lies on line ℓ_6
 235 : $P_{126082} = (1, 49, 29, 1)$ lies on line ℓ_8
 236 : $P_{127298} = (1, 4, 30, 1)$ lies on line ℓ_6
 237 : $P_{128770} = (1, 27, 30, 1)$ lies on line ℓ_8
 238 : $P_{128961} = (0, 30, 30, 1)$ lies on line ℓ_3
 239 : $P_{129026} = (1, 31, 30, 1)$ lies on line ℓ_4
 240 : $P_{129281} = (0, 35, 30, 1)$ lies on line ℓ_7
 241 : $P_{130945} = (0, 61, 30, 1)$ lies on line ℓ_5
 242 : $P_{131457} = (0, 5, 31, 1)$ lies on line ℓ_5
 243 : $P_{132801} = (0, 26, 31, 1)$ lies on line ℓ_7
 244 : $P_{133058} = (1, 30, 31, 1)$ lies on line ℓ_4
 245 : $P_{133121} = (0, 31, 31, 1)$ lies on line ℓ_3
 246 : $P_{133314} = (1, 34, 31, 1)$ lies on line ℓ_8
 247 : $P_{134978} = (1, 60, 31, 1)$ lies on line ℓ_6
 248 : $P_{136130} = (1, 14, 32, 1)$ lies on line ℓ_6
 249 : $P_{136705} = (0, 23, 32, 1)$ lies on line ℓ_7
 250 : $P_{137281} = (0, 32, 32, 1)$ lies on line ℓ_3
 251 : $P_{137346} = (1, 33, 32, 1)$ lies on line ℓ_4
 252 : $P_{138242} = (1, 47, 32, 1)$ lies on line ℓ_8
 253 : $P_{138753} = (0, 55, 32, 1)$ lies on line ℓ_5
 254 : $P_{140289} = (0, 15, 33, 1)$ lies on line ℓ_5
 255 : $P_{140738} = (1, 22, 33, 1)$ lies on line ℓ_8
 256 : $P_{141378} = (1, 32, 33, 1)$ lies on line ℓ_4
 257 : $P_{141441} = (0, 33, 33, 1)$ lies on line ℓ_3
 258 : $P_{142273} = (0, 46, 33, 1)$ lies on line ℓ_7
 259 : $P_{142786} = (1, 54, 33, 1)$ lies on line ℓ_6
 260 : $P_{143681} = (0, 4, 34, 1)$ lies on line ℓ_7
 261 : $P_{145410} = (1, 31, 34, 1)$ lies on line ℓ_6
 262 : $P_{145601} = (0, 34, 34, 1)$ lies on line ℓ_3
 263 : $P_{145666} = (1, 35, 34, 1)$ lies on line ℓ_4
 264 : $P_{145857} = (0, 38, 34, 1)$ lies on line ℓ_5
 265 : $P_{147266} = (1, 60, 34, 1)$ lies on line ℓ_8
 266 : $P_{147842} = (1, 5, 35, 1)$ lies on line ℓ_8
 267 : $P_{149441} = (0, 30, 35, 1)$ lies on line ℓ_5
 268 : $P_{149698} = (1, 34, 35, 1)$ lies on line ℓ_4
 269 : $P_{149761} = (0, 35, 35, 1)$ lies on line ℓ_3
 270 : $P_{150018} = (1, 39, 35, 1)$ lies on line ℓ_6
 271 : $P_{151425} = (0, 61, 35, 1)$ lies on line ℓ_7
 272 : $P_{152194} = (1, 9, 36, 1)$ lies on line ℓ_8
 273 : $P_{152961} = (0, 21, 36, 1)$ lies on line ℓ_5
 274 : $P_{153921} = (0, 36, 36, 1)$ lies on line ℓ_3
 275 : $P_{153986} = (1, 37, 36, 1)$ lies on line ℓ_4

276 : $P_{154434} = (1, 44, 36, 1)$ lies on line ℓ_6
 277 : $P_{154753} = (0, 49, 36, 1)$ lies on line ℓ_7
 278 : $P_{156225} = (0, 8, 37, 1)$ lies on line ℓ_7
 279 : $P_{156994} = (1, 20, 37, 1)$ lies on line ℓ_6
 280 : $P_{158018} = (1, 36, 37, 1)$ lies on line ℓ_4
 281 : $P_{158081} = (0, 37, 37, 1)$ lies on line ℓ_3
 282 : $P_{158593} = (0, 45, 37, 1)$ lies on line ℓ_5
 283 : $P_{158786} = (1, 48, 37, 1)$ lies on line ℓ_8
 284 : $P_{160065} = (0, 4, 38, 1)$ lies on line ℓ_5
 285 : $P_{161474} = (1, 26, 38, 1)$ lies on line ℓ_8
 286 : $P_{161985} = (0, 34, 38, 1)$ lies on line ℓ_7
 287 : $P_{162241} = (0, 38, 38, 1)$ lies on line ℓ_3
 288 : $P_{162306} = (1, 39, 38, 1)$ lies on line ℓ_4
 289 : $P_{163714} = (1, 61, 38, 1)$ lies on line ℓ_6
 290 : $P_{164226} = (1, 5, 39, 1)$ lies on line ℓ_6
 291 : $P_{165633} = (0, 27, 39, 1)$ lies on line ℓ_7
 292 : $P_{166146} = (1, 35, 39, 1)$ lies on line ℓ_8
 293 : $P_{166338} = (1, 38, 39, 1)$ lies on line ℓ_4
 294 : $P_{166401} = (0, 39, 39, 1)$ lies on line ℓ_3
 295 : $P_{167745} = (0, 60, 39, 1)$ lies on line ℓ_5
 296 : $P_{168130} = (1, 2, 40, 1)$ lies on line ℓ_8
 297 : $P_{169153} = (0, 18, 40, 1)$ lies on line ℓ_5
 298 : $P_{170561} = (0, 40, 40, 1)$ lies on line ℓ_3
 299 : $P_{170626} = (1, 41, 40, 1)$ lies on line ℓ_4
 300 : $P_{170754} = (1, 43, 40, 1)$ lies on line ℓ_6
 301 : $P_{171713} = (0, 58, 40, 1)$ lies on line ℓ_7
 302 : $P_{172289} = (0, 3, 41, 1)$ lies on line ℓ_7
 303 : $P_{173314} = (1, 19, 41, 1)$ lies on line ℓ_6
 304 : $P_{174658} = (1, 40, 41, 1)$ lies on line ℓ_4
 305 : $P_{174721} = (0, 41, 41, 1)$ lies on line ℓ_3
 306 : $P_{174785} = (0, 42, 41, 1)$ lies on line ℓ_5
 307 : $P_{175874} = (1, 59, 41, 1)$ lies on line ℓ_8
 308 : $P_{176385} = (0, 3, 42, 1)$ lies on line ℓ_5
 309 : $P_{177282} = (1, 17, 42, 1)$ lies on line ℓ_8
 310 : $P_{178817} = (0, 41, 42, 1)$ lies on line ℓ_7
 311 : $P_{178881} = (0, 42, 42, 1)$ lies on line ℓ_3
 312 : $P_{178946} = (1, 43, 42, 1)$ lies on line ℓ_4
 313 : $P_{179906} = (1, 58, 42, 1)$ lies on line ℓ_6
 314 : $P_{180418} = (1, 2, 43, 1)$ lies on line ℓ_6
 315 : $P_{181313} = (0, 16, 43, 1)$ lies on line ℓ_7
 316 : $P_{182850} = (1, 40, 43, 1)$ lies on line ℓ_8
 317 : $P_{182978} = (1, 42, 43, 1)$ lies on line ℓ_4
 318 : $P_{183041} = (0, 43, 43, 1)$ lies on line ℓ_3
 319 : $P_{184065} = (0, 59, 43, 1)$ lies on line ℓ_5
 320 : $P_{184962} = (1, 9, 44, 1)$ lies on line ℓ_6
 321 : $P_{186177} = (0, 28, 44, 1)$ lies on line ℓ_7
 322 : $P_{186690} = (1, 36, 44, 1)$ lies on line ℓ_8
 323 : $P_{187201} = (0, 44, 44, 1)$ lies on line ℓ_3
 324 : $P_{187266} = (1, 45, 44, 1)$ lies on line ℓ_4
 325 : $P_{187457} = (0, 48, 44, 1)$ lies on line ℓ_5
 326 : $P_{188993} = (0, 8, 45, 1)$ lies on line ℓ_5
 327 : $P_{190338} = (1, 29, 45, 1)$ lies on line ℓ_8
 328 : $P_{190849} = (0, 37, 45, 1)$ lies on line ℓ_7
 329 : $P_{191298} = (1, 44, 45, 1)$ lies on line ℓ_4

330 : $P_{191361} = (0, 45, 45, 1)$ lies on line ℓ_3
331 : $P_{191618} = (1, 49, 45, 1)$ lies on line ℓ_6
332 : $P_{193537} = (0, 15, 46, 1)$ lies on line ℓ_7
333 : $P_{194114} = (1, 24, 46, 1)$ lies on line ℓ_6
334 : $P_{194689} = (0, 33, 46, 1)$ lies on line ℓ_5
335 : $P_{195521} = (0, 46, 46, 1)$ lies on line ℓ_3
336 : $P_{195586} = (1, 47, 46, 1)$ lies on line ℓ_4
337 : $P_{196098} = (1, 55, 46, 1)$ lies on line ℓ_8
338 : $P_{197570} = (1, 14, 47, 1)$ lies on line ℓ_8
339 : $P_{198273} = (0, 25, 47, 1)$ lies on line ℓ_5
340 : $P_{198722} = (1, 32, 47, 1)$ lies on line ℓ_6
341 : $P_{199618} = (1, 46, 47, 1)$ lies on line ℓ_4
342 : $P_{199681} = (0, 47, 47, 1)$ lies on line ℓ_3
343 : $P_{200129} = (0, 54, 47, 1)$ lies on line ℓ_7
344 : $P_{202050} = (1, 20, 48, 1)$ lies on line ℓ_8
345 : $P_{202561} = (0, 28, 48, 1)$ lies on line ℓ_5
346 : $P_{203138} = (1, 37, 48, 1)$ lies on line ℓ_6
347 : $P_{203585} = (0, 44, 48, 1)$ lies on line ℓ_7
348 : $P_{203841} = (0, 48, 48, 1)$ lies on line ℓ_3
349 : $P_{203906} = (1, 49, 48, 1)$ lies on line ℓ_4
350 : $P_{206209} = (0, 21, 49, 1)$ lies on line ℓ_7
351 : $P_{206722} = (1, 29, 49, 1)$ lies on line ℓ_6
352 : $P_{207169} = (0, 36, 49, 1)$ lies on line ℓ_5
353 : $P_{207746} = (1, 45, 49, 1)$ lies on line ℓ_8
354 : $P_{207938} = (1, 48, 49, 1)$ lies on line ℓ_4
355 : $P_{208001} = (0, 49, 49, 1)$ lies on line ℓ_3
356 : $P_{209410} = (1, 7, 50, 1)$ lies on line ℓ_8
357 : $P_{209793} = (0, 13, 50, 1)$ lies on line ℓ_5
358 : $P_{212161} = (0, 50, 50, 1)$ lies on line ℓ_3
359 : $P_{212226} = (1, 51, 50, 1)$ lies on line ℓ_4
360 : $P_{212290} = (1, 52, 50, 1)$ lies on line ℓ_6
361 : $P_{212993} = (0, 63, 50, 1)$ lies on line ℓ_7
362 : $P_{213441} = (0, 6, 51, 1)$ lies on line ℓ_7
363 : $P_{213826} = (1, 12, 51, 1)$ lies on line ℓ_6
364 : $P_{216258} = (1, 50, 51, 1)$ lies on line ℓ_4
365 : $P_{216321} = (0, 51, 51, 1)$ lies on line ℓ_3
366 : $P_{216449} = (0, 53, 51, 1)$ lies on line ℓ_5
367 : $P_{217026} = (1, 62, 51, 1)$ lies on line ℓ_8
368 : $P_{217602} = (1, 7, 52, 1)$ lies on line ℓ_6
369 : $P_{217793} = (0, 10, 52, 1)$ lies on line ℓ_7
370 : $P_{220354} = (1, 50, 52, 1)$ lies on line ℓ_8
371 : $P_{220481} = (0, 52, 52, 1)$ lies on line ℓ_3
372 : $P_{220546} = (1, 53, 52, 1)$ lies on line ℓ_4
373 : $P_{221121} = (0, 62, 52, 1)$ lies on line ℓ_5
374 : $P_{221633} = (0, 6, 53, 1)$ lies on line ℓ_5
375 : $P_{221954} = (1, 11, 53, 1)$ lies on line ℓ_8
376 : $P_{224513} = (0, 51, 53, 1)$ lies on line ℓ_7
377 : $P_{224578} = (1, 52, 53, 1)$ lies on line ℓ_4
378 : $P_{224641} = (0, 53, 53, 1)$ lies on line ℓ_3
379 : $P_{225282} = (1, 63, 53, 1)$ lies on line ℓ_6
380 : $P_{226754} = (1, 22, 54, 1)$ lies on line ℓ_6
381 : $P_{226945} = (0, 25, 54, 1)$ lies on line ℓ_7
382 : $P_{227458} = (1, 33, 54, 1)$ lies on line ℓ_8
383 : $P_{228353} = (0, 47, 54, 1)$ lies on line ℓ_5
384 : $P_{228801} = (0, 54, 54, 1)$ lies on line ℓ_3
385 : $P_{228866} = (1, 55, 54, 1)$ lies on line ℓ_4
386 : $P_{230913} = (0, 23, 55, 1)$ lies on line ℓ_5
387 : $P_{230978} = (1, 24, 55, 1)$ lies on line ℓ_8
388 : $P_{231489} = (0, 32, 55, 1)$ lies on line ℓ_7
389 : $P_{232386} = (1, 46, 55, 1)$ lies on line ℓ_6
390 : $P_{232898} = (1, 54, 55, 1)$ lies on line ℓ_4
391 : $P_{232961} = (0, 55, 55, 1)$ lies on line ℓ_3
392 : $P_{233538} = (1, 0, 56, 1)$ lies on line ℓ_6
393 : $P_{233601} = (0, 1, 56, 1)$ lies on line ℓ_7
394 : $P_{237121} = (0, 56, 56, 1)$ lies on line ℓ_3
395 : $P_{237187} = (2, 57, 56, 1)$ lies on line ℓ_1
396 : $P_{237188} = (3, 57, 56, 1)$ lies on line ℓ_1
397 : $P_{237189} = (4, 57, 56, 1)$ lies on line ℓ_1
398 : $P_{237190} = (5, 57, 56, 1)$ lies on line ℓ_1
399 : $P_{237191} = (6, 57, 56, 1)$ lies on line ℓ_1
400 : $P_{237192} = (7, 57, 56, 1)$ lies on line ℓ_1
401 : $P_{237193} = (8, 57, 56, 1)$ lies on line ℓ_1
402 : $P_{237194} = (9, 57, 56, 1)$ lies on line ℓ_1
403 : $P_{237195} = (10, 57, 56, 1)$ lies on line ℓ_1
404 : $P_{237196} = (11, 57, 56, 1)$ lies on line ℓ_1
405 : $P_{237197} = (12, 57, 56, 1)$ lies on line ℓ_1
406 : $P_{237198} = (13, 57, 56, 1)$ lies on line ℓ_1
407 : $P_{237199} = (14, 57, 56, 1)$ lies on line ℓ_1
408 : $P_{237200} = (15, 57, 56, 1)$ lies on line ℓ_1
409 : $P_{237201} = (16, 57, 56, 1)$ lies on line ℓ_1
410 : $P_{237202} = (17, 57, 56, 1)$ lies on line ℓ_1
411 : $P_{237203} = (18, 57, 56, 1)$ lies on line ℓ_1
412 : $P_{237204} = (19, 57, 56, 1)$ lies on line ℓ_1
413 : $P_{237205} = (20, 57, 56, 1)$ lies on line ℓ_1
414 : $P_{237206} = (21, 57, 56, 1)$ lies on line ℓ_1
415 : $P_{237207} = (22, 57, 56, 1)$ lies on line ℓ_1
416 : $P_{237208} = (23, 57, 56, 1)$ lies on line ℓ_1
417 : $P_{237209} = (24, 57, 56, 1)$ lies on line ℓ_1
418 : $P_{237210} = (25, 57, 56, 1)$ lies on line ℓ_1
419 : $P_{237211} = (26, 57, 56, 1)$ lies on line ℓ_1
420 : $P_{237212} = (27, 57, 56, 1)$ lies on line ℓ_1
421 : $P_{237213} = (28, 57, 56, 1)$ lies on line ℓ_1
422 : $P_{237214} = (29, 57, 56, 1)$ lies on line ℓ_1
423 : $P_{237215} = (30, 57, 56, 1)$ lies on line ℓ_1
424 : $P_{237216} = (31, 57, 56, 1)$ lies on line ℓ_1
425 : $P_{237217} = (32, 57, 56, 1)$ lies on line ℓ_1
426 : $P_{237218} = (33, 57, 56, 1)$ lies on line ℓ_1
427 : $P_{237219} = (34, 57, 56, 1)$ lies on line ℓ_1
428 : $P_{237220} = (35, 57, 56, 1)$ lies on line ℓ_1
429 : $P_{237221} = (36, 57, 56, 1)$ lies on line ℓ_1
430 : $P_{237222} = (37, 57, 56, 1)$ lies on line ℓ_1
431 : $P_{237223} = (38, 57, 56, 1)$ lies on line ℓ_1
432 : $P_{237224} = (39, 57, 56, 1)$ lies on line ℓ_1
433 : $P_{237225} = (40, 57, 56, 1)$ lies on line ℓ_1
434 : $P_{237226} = (41, 57, 56, 1)$ lies on line ℓ_1
435 : $P_{237227} = (42, 57, 56, 1)$ lies on line ℓ_1
436 : $P_{237228} = (43, 57, 56, 1)$ lies on line ℓ_1
437 : $P_{237229} = (44, 57, 56, 1)$ lies on line ℓ_1

438 : $P_{237230} = (45, 57, 56, 1)$ lies on line ℓ_1
 439 : $P_{237231} = (46, 57, 56, 1)$ lies on line ℓ_1
 440 : $P_{237232} = (47, 57, 56, 1)$ lies on line ℓ_1
 441 : $P_{237233} = (48, 57, 56, 1)$ lies on line ℓ_1
 442 : $P_{237234} = (49, 57, 56, 1)$ lies on line ℓ_1
 443 : $P_{237235} = (50, 57, 56, 1)$ lies on line ℓ_1
 444 : $P_{237236} = (51, 57, 56, 1)$ lies on line ℓ_1
 445 : $P_{237237} = (52, 57, 56, 1)$ lies on line ℓ_1
 446 : $P_{237238} = (53, 57, 56, 1)$ lies on line ℓ_1
 447 : $P_{237239} = (54, 57, 56, 1)$ lies on line ℓ_1
 448 : $P_{237240} = (55, 57, 56, 1)$ lies on line ℓ_1
 449 : $P_{237241} = (56, 57, 56, 1)$ lies on line ℓ_1
 450 : $P_{237242} = (57, 57, 56, 1)$ lies on line ℓ_1
 451 : $P_{237243} = (58, 57, 56, 1)$ lies on line ℓ_1
 452 : $P_{237244} = (59, 57, 56, 1)$ lies on line ℓ_1
 453 : $P_{237245} = (60, 57, 56, 1)$ lies on line ℓ_1
 454 : $P_{237246} = (61, 57, 56, 1)$ lies on line ℓ_1
 455 : $P_{237247} = (62, 57, 56, 1)$ lies on line ℓ_1
 456 : $P_{237248} = (63, 57, 56, 1)$ lies on line ℓ_1
 457 : $P_{237634} = (1, 0, 57, 1)$ lies on line ℓ_8
 458 : $P_{237697} = (0, 1, 57, 1)$ lies on line ℓ_5
 459 : $P_{241219} = (2, 56, 57, 1)$ lies on line ℓ_2
 460 : $P_{241220} = (3, 56, 57, 1)$ lies on line ℓ_2
 461 : $P_{241221} = (4, 56, 57, 1)$ lies on line ℓ_2
 462 : $P_{241222} = (5, 56, 57, 1)$ lies on line ℓ_2
 463 : $P_{241223} = (6, 56, 57, 1)$ lies on line ℓ_2
 464 : $P_{241224} = (7, 56, 57, 1)$ lies on line ℓ_2
 465 : $P_{241225} = (8, 56, 57, 1)$ lies on line ℓ_2
 466 : $P_{241226} = (9, 56, 57, 1)$ lies on line ℓ_2
 467 : $P_{241227} = (10, 56, 57, 1)$ lies on line ℓ_2
 468 : $P_{241228} = (11, 56, 57, 1)$ lies on line ℓ_2
 469 : $P_{241229} = (12, 56, 57, 1)$ lies on line ℓ_2
 470 : $P_{241230} = (13, 56, 57, 1)$ lies on line ℓ_2
 471 : $P_{241231} = (14, 56, 57, 1)$ lies on line ℓ_2
 472 : $P_{241232} = (15, 56, 57, 1)$ lies on line ℓ_2
 473 : $P_{241233} = (16, 56, 57, 1)$ lies on line ℓ_2
 474 : $P_{241234} = (17, 56, 57, 1)$ lies on line ℓ_2
 475 : $P_{241235} = (18, 56, 57, 1)$ lies on line ℓ_2
 476 : $P_{241236} = (19, 56, 57, 1)$ lies on line ℓ_2
 477 : $P_{241237} = (20, 56, 57, 1)$ lies on line ℓ_2
 478 : $P_{241238} = (21, 56, 57, 1)$ lies on line ℓ_2
 479 : $P_{241239} = (22, 56, 57, 1)$ lies on line ℓ_2
 480 : $P_{241240} = (23, 56, 57, 1)$ lies on line ℓ_2
 481 : $P_{241241} = (24, 56, 57, 1)$ lies on line ℓ_2
 482 : $P_{241242} = (25, 56, 57, 1)$ lies on line ℓ_2
 483 : $P_{241243} = (26, 56, 57, 1)$ lies on line ℓ_2
 484 : $P_{241244} = (27, 56, 57, 1)$ lies on line ℓ_2
 485 : $P_{241245} = (28, 56, 57, 1)$ lies on line ℓ_2
 486 : $P_{241246} = (29, 56, 57, 1)$ lies on line ℓ_2
 487 : $P_{241247} = (30, 56, 57, 1)$ lies on line ℓ_2
 488 : $P_{241248} = (31, 56, 57, 1)$ lies on line ℓ_2
 489 : $P_{241249} = (32, 56, 57, 1)$ lies on line ℓ_2
 490 : $P_{241250} = (33, 56, 57, 1)$ lies on line ℓ_2
 491 : $P_{241251} = (34, 56, 57, 1)$ lies on line ℓ_2
 492 : $P_{241252} = (35, 56, 57, 1)$ lies on line ℓ_2
 493 : $P_{241253} = (36, 56, 57, 1)$ lies on line ℓ_2
 494 : $P_{241254} = (37, 56, 57, 1)$ lies on line ℓ_2
 495 : $P_{241255} = (38, 56, 57, 1)$ lies on line ℓ_2
 496 : $P_{241256} = (39, 56, 57, 1)$ lies on line ℓ_2
 497 : $P_{241257} = (40, 56, 57, 1)$ lies on line ℓ_2
 498 : $P_{241258} = (41, 56, 57, 1)$ lies on line ℓ_2
 499 : $P_{241259} = (42, 56, 57, 1)$ lies on line ℓ_2
 500 : $P_{241260} = (43, 56, 57, 1)$ lies on line ℓ_2
 501 : $P_{241261} = (44, 56, 57, 1)$ lies on line ℓ_2
 502 : $P_{241262} = (45, 56, 57, 1)$ lies on line ℓ_2
 503 : $P_{241263} = (46, 56, 57, 1)$ lies on line ℓ_2
 504 : $P_{241264} = (47, 56, 57, 1)$ lies on line ℓ_2
 505 : $P_{241265} = (48, 56, 57, 1)$ lies on line ℓ_2
 506 : $P_{241266} = (49, 56, 57, 1)$ lies on line ℓ_2
 507 : $P_{241267} = (50, 56, 57, 1)$ lies on line ℓ_2
 508 : $P_{241268} = (51, 56, 57, 1)$ lies on line ℓ_2
 509 : $P_{241269} = (52, 56, 57, 1)$ lies on line ℓ_2
 510 : $P_{241270} = (53, 56, 57, 1)$ lies on line ℓ_2
 511 : $P_{241271} = (54, 56, 57, 1)$ lies on line ℓ_2
 512 : $P_{241272} = (55, 56, 57, 1)$ lies on line ℓ_2
 513 : $P_{241273} = (56, 56, 57, 1)$ lies on line ℓ_2
 514 : $P_{241274} = (57, 56, 57, 1)$ lies on line ℓ_2
 515 : $P_{241275} = (58, 56, 57, 1)$ lies on line ℓ_2
 516 : $P_{241276} = (59, 56, 57, 1)$ lies on line ℓ_2
 517 : $P_{241277} = (60, 56, 57, 1)$ lies on line ℓ_2
 518 : $P_{241278} = (61, 56, 57, 1)$ lies on line ℓ_2
 519 : $P_{241279} = (62, 56, 57, 1)$ lies on line ℓ_2
 520 : $P_{241280} = (63, 56, 57, 1)$ lies on line ℓ_2
 521 : $P_{241281} = (0, 57, 57, 1)$ lies on line ℓ_3
 522 : $P_{242818} = (1, 17, 58, 1)$ lies on line ℓ_6
 523 : $P_{242881} = (0, 18, 58, 1)$ lies on line ℓ_7
 524 : $P_{244289} = (0, 40, 58, 1)$ lies on line ℓ_5
 525 : $P_{244418} = (1, 42, 58, 1)$ lies on line ℓ_8
 526 : $P_{245441} = (0, 58, 58, 1)$ lies on line ℓ_3
 527 : $P_{245506} = (1, 59, 58, 1)$ lies on line ℓ_4
 528 : $P_{246849} = (0, 16, 59, 1)$ lies on line ℓ_5
 529 : $P_{247042} = (1, 19, 59, 1)$ lies on line ℓ_8
 530 : $P_{248450} = (1, 41, 59, 1)$ lies on line ℓ_6
 531 : $P_{248577} = (0, 43, 59, 1)$ lies on line ℓ_7
 532 : $P_{249538} = (1, 58, 59, 1)$ lies on line ℓ_4
 533 : $P_{249601} = (0, 59, 59, 1)$ lies on line ℓ_3
 534 : $P_{251649} = (0, 27, 60, 1)$ lies on line ℓ_5
 535 : $P_{251906} = (1, 31, 60, 1)$ lies on line ℓ_8
 536 : $P_{252098} = (1, 34, 60, 1)$ lies on line ℓ_6
 537 : $P_{252417} = (0, 39, 60, 1)$ lies on line ℓ_7
 538 : $P_{253761} = (0, 60, 60, 1)$ lies on line ℓ_3
 539 : $P_{253826} = (1, 61, 60, 1)$ lies on line ℓ_4
 540 : $P_{255682} = (1, 26, 61, 1)$ lies on line ℓ_6
 541 : $P_{255937} = (0, 30, 61, 1)$ lies on line ℓ_7
 542 : $P_{256257} = (0, 35, 61, 1)$ lies on line ℓ_5
 543 : $P_{256450} = (1, 38, 61, 1)$ lies on line ℓ_8
 544 : $P_{257858} = (1, 60, 61, 1)$ lies on line ℓ_4
 545 : $P_{257921} = (0, 61, 61, 1)$ lies on line ℓ_3

546 : $P_{258753} = (0, 10, 62, 1)$ lies on line ℓ_5
 547 : $P_{258882} = (1, 12, 62, 1)$ lies on line ℓ_8
 548 : $P_{261378} = (1, 51, 62, 1)$ lies on line ℓ_6
 549 : $P_{261441} = (0, 52, 62, 1)$ lies on line ℓ_7
 550 : $P_{262081} = (0, 62, 62, 1)$ lies on line ℓ_3
 551 : $P_{262146} = (1, 63, 62, 1)$ lies on line ℓ_4
 552 : $P_{262914} = (1, 11, 63, 1)$ lies on line ℓ_6

553 : $P_{263041} = (0, 13, 63, 1)$ lies on line ℓ_7
 554 : $P_{265409} = (0, 50, 63, 1)$ lies on line ℓ_5
 555 : $P_{265602} = (1, 53, 63, 1)$ lies on line ℓ_8
 556 : $P_{266178} = (1, 62, 63, 1)$ lies on line ℓ_4
 557 : $P_{266241} = (0, 63, 63, 1)$ lies on line ℓ_3

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

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_8
in point	P_0	P_0	P_{8322}	P_4	P_4

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_5	ℓ_8
in point	P_0	P_0	P_{237186}	P_{237185}	P_{237186}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_4	ℓ_6	ℓ_7
in point	P_0	P_0	P_{241218}	P_{241218}	P_{241217}

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_7
in point	P_{8322}	P_{131}	P_3	P_3

Line 4 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_8
in point	P_{237186}	P_{241218}	P_{131}	P_{241218}	P_{237186}

Line 5 intersects

Line	ℓ_1	ℓ_3	ℓ_6	ℓ_7
in point	P_{237185}	P_3	P_{3651}	P_3

Line 6 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_5	ℓ_8
in point	P_4	P_{241218}	P_{241218}	P_{3651}	P_4

Line 7 intersects

Line	ℓ_2	ℓ_3	ℓ_5	ℓ_8
in point	P_{241217}	P_3	P_3	P_{3715}

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_4	ℓ_6	ℓ_7
in point	P_4	P_{237186}	P_{237186}	P_4	P_{3715}

The surface has 4289 points:
Too many to print.