

Rank-74053 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_1^3 + X_0^2 X_3 + X_1^2 X_2 + X_0 X_3^2 + X_0 X_1 X_2 = 0$$

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

The point rank of the equation over GF(64) is 1090785413

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:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \mathbf{Pl}(0, 0, 1, 0, 0, 0)_2$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1 \\
\ell_2 &= \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \mathbf{Pl}(0, 1, 1, 0, 0, 0)_{66} \\
\ell_3 &= \begin{bmatrix} 1 & 1 & 0 & \epsilon^{21} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{15187585} = \begin{bmatrix} 1 & 1 & 0 & 57 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{15187585} = \mathbf{Pl}(0, 57, 1, 0, 0, 1)_{270648} \\
\ell_4 &= \begin{bmatrix} 1 & 1 & 0 & \epsilon^{42} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{14921281} = \begin{bmatrix} 1 & 1 & 0 & 56 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{14921281} = \mathbf{Pl}(0, 56, 1, 0, 0, 1)_{270647} \\
\ell_5 &= \begin{bmatrix} 1 & 0 & \epsilon^{21} & 0 \\ 0 & 1 & 1 & \epsilon^{21} \end{bmatrix}_{240826} = \begin{bmatrix} 1 & 0 & 57 & 0 \\ 0 & 1 & 1 & 57 \end{bmatrix}_{240826} = \mathbf{Pl}(56, 57, 56, 0, 1, 1)_{540160} \\
\ell_6 &= \begin{bmatrix} 1 & 0 & \epsilon^{42} & 0 \\ 0 & 1 & 1 & \epsilon^{42} \end{bmatrix}_{236601} = \begin{bmatrix} 1 & 0 & 56 & 0 \\ 0 & 1 & 1 & 56 \end{bmatrix}_{236601} = \mathbf{Pl}(57, 56, 57, 0, 1, 1)_{540224} \\
\ell_7 &= \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \mathbf{Pl}(0, 1, 0, 1, 0, 0)_{193} \\
\ell_8 &= \begin{bmatrix} 1 & 0 & \epsilon^{21} & 1 \\ 0 & 1 & 1 & \epsilon^{21} \end{bmatrix}_{507130} = \begin{bmatrix} 1 & 0 & 57 & 1 \\ 0 & 1 & 1 & 57 \end{bmatrix}_{507130} = \mathbf{Pl}(1, 1, 57, 56, 1, 1)_{774780} \\
\ell_9 &= \begin{bmatrix} 1 & 0 & \epsilon^{42} & 1 \\ 0 & 1 & 1 & \epsilon^{42} \end{bmatrix}_{502905} = \begin{bmatrix} 1 & 0 & 56 & 1 \\ 0 & 1 & 1 & 56 \end{bmatrix}_{502905} = \mathbf{Pl}(1, 1, 56, 57, 1, 1)_{770811}
\end{aligned}$$

Rank of lines: (4096, 17047616, 270400, 15187585, 14921281, 240826, 236601, 17043585, 507130, 502905)

Rank of points on Klein quadric: (2, 1, 66, 270648, 270647, 540160, 540224, 193, 774780, 770811)

Eckardt Points

The surface has 2 Eckardt points:

$$0 : P_{237121} = \mathbf{P}(0, \epsilon^{42}, \epsilon^{42}, 1) = \mathbf{P}(0, 56, 56, 1),$$

$$1 : P_{241281} = \mathbf{P}(0, \epsilon^{21}, \epsilon^{21}, 1) = \mathbf{P}(0, 57, 57, 1).$$

Double Points

The surface has 9 Double points:

The double points on the surface are:

$$P_{123} = (56, 0, 1, 0) = \ell_0 \cap \ell_5$$

$$P_{124} = (57, 0, 1, 0) = \ell_0 \cap \ell_6$$

$$P_3 = (0, 0, 0, 1) = \ell_1 \cap \ell_7$$

$$P_{237634} = (1, 0, 57, 1) = \ell_2 \cap \ell_8$$

$$P_{233538} = (1, 0, 56, 1) = \ell_2 \cap \ell_9$$

$$P_{241273} = (56, 56, 57, 1) = \ell_3 \cap \ell_5$$

$$P_{11897} = (56, 56, 1, 1) = \ell_3 \cap \ell_9$$

$$P_{237242} = (57, 57, 56, 1) = \ell_4 \cap \ell_6$$

$$P_{11962} = (57, 57, 1, 1) = \ell_4 \cap \ell_8$$

Single Points

The surface has 621 single points:

The single points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$ lies on line ℓ_0
 1 : $P_{68} = (1, 0, 1, 0)$ lies on line ℓ_0
 2 : $P_{69} = (2, 0, 1, 0)$ lies on line ℓ_0
 3 : $P_{70} = (3, 0, 1, 0)$ lies on line ℓ_0
 4 : $P_{71} = (4, 0, 1, 0)$ lies on line ℓ_0
 5 : $P_{72} = (5, 0, 1, 0)$ lies on line ℓ_0
 6 : $P_{73} = (6, 0, 1, 0)$ lies on line ℓ_0
 7 : $P_{74} = (7, 0, 1, 0)$ lies on line ℓ_0
 8 : $P_{75} = (8, 0, 1, 0)$ lies on line ℓ_0
 9 : $P_{76} = (9, 0, 1, 0)$ lies on line ℓ_0
 10 : $P_{77} = (10, 0, 1, 0)$ lies on line ℓ_0
 11 : $P_{78} = (11, 0, 1, 0)$ lies on line ℓ_0
 12 : $P_{79} = (12, 0, 1, 0)$ lies on line ℓ_0
 13 : $P_{80} = (13, 0, 1, 0)$ lies on line ℓ_0
 14 : $P_{81} = (14, 0, 1, 0)$ lies on line ℓ_0
 15 : $P_{82} = (15, 0, 1, 0)$ lies on line ℓ_0
 16 : $P_{83} = (16, 0, 1, 0)$ lies on line ℓ_0
 17 : $P_{84} = (17, 0, 1, 0)$ lies on line ℓ_0
 18 : $P_{85} = (18, 0, 1, 0)$ lies on line ℓ_0
 19 : $P_{86} = (19, 0, 1, 0)$ lies on line ℓ_0
 20 : $P_{87} = (20, 0, 1, 0)$ lies on line ℓ_0
 21 : $P_{88} = (21, 0, 1, 0)$ lies on line ℓ_0
 22 : $P_{89} = (22, 0, 1, 0)$ lies on line ℓ_0
 23 : $P_{90} = (23, 0, 1, 0)$ lies on line ℓ_0
 24 : $P_{91} = (24, 0, 1, 0)$ lies on line ℓ_0
 25 : $P_{92} = (25, 0, 1, 0)$ lies on line ℓ_0
 26 : $P_{93} = (26, 0, 1, 0)$ lies on line ℓ_0
 27 : $P_{94} = (27, 0, 1, 0)$ lies on line ℓ_0
 28 : $P_{95} = (28, 0, 1, 0)$ lies on line ℓ_0
 29 : $P_{96} = (29, 0, 1, 0)$ lies on line ℓ_0
 30 : $P_{97} = (30, 0, 1, 0)$ lies on line ℓ_0
 31 : $P_{98} = (31, 0, 1, 0)$ lies on line ℓ_0
 32 : $P_{99} = (32, 0, 1, 0)$ lies on line ℓ_0
 33 : $P_{100} = (33, 0, 1, 0)$ lies on line ℓ_0
 34 : $P_{101} = (34, 0, 1, 0)$ lies on line ℓ_0
 35 : $P_{102} = (35, 0, 1, 0)$ lies on line ℓ_0
 36 : $P_{103} = (36, 0, 1, 0)$ lies on line ℓ_0
 37 : $P_{104} = (37, 0, 1, 0)$ lies on line ℓ_0
 38 : $P_{105} = (38, 0, 1, 0)$ lies on line ℓ_0
 39 : $P_{106} = (39, 0, 1, 0)$ lies on line ℓ_0
 40 : $P_{107} = (40, 0, 1, 0)$ lies on line ℓ_0
 41 : $P_{108} = (41, 0, 1, 0)$ lies on line ℓ_0
 42 : $P_{109} = (42, 0, 1, 0)$ lies on line ℓ_0
 43 : $P_{110} = (43, 0, 1, 0)$ lies on line ℓ_0
 44 : $P_{111} = (44, 0, 1, 0)$ lies on line ℓ_0
 45 : $P_{112} = (45, 0, 1, 0)$ lies on line ℓ_0
 46 : $P_{113} = (46, 0, 1, 0)$ lies on line ℓ_0
 47 : $P_{114} = (47, 0, 1, 0)$ lies on line ℓ_0
 48 : $P_{115} = (48, 0, 1, 0)$ lies on line ℓ_0
 49 : $P_{116} = (49, 0, 1, 0)$ lies on line ℓ_0
 50 : $P_{117} = (50, 0, 1, 0)$ lies on line ℓ_0
 51 : $P_{118} = (51, 0, 1, 0)$ lies on line ℓ_0
 52 : $P_{119} = (52, 0, 1, 0)$ lies on line ℓ_0
 53 : $P_{120} = (53, 0, 1, 0)$ lies on line ℓ_0

54 : $P_{121} = (54, 0, 1, 0)$ lies on line ℓ_0
 55 : $P_{122} = (55, 0, 1, 0)$ lies on line ℓ_0
 56 : $P_{125} = (58, 0, 1, 0)$ lies on line ℓ_0
 57 : $P_{126} = (59, 0, 1, 0)$ lies on line ℓ_0
 58 : $P_{127} = (60, 0, 1, 0)$ lies on line ℓ_0
 59 : $P_{128} = (61, 0, 1, 0)$ lies on line ℓ_0
 60 : $P_{129} = (62, 0, 1, 0)$ lies on line ℓ_0
 61 : $P_{130} = (63, 0, 1, 0)$ lies on line ℓ_0
 62 : $P_{131} = (0, 1, 1, 0)$ lies on line ℓ_7
 63 : $P_{3652} = (1, 56, 1, 0)$ lies on line ℓ_8
 64 : $P_{3716} = (1, 57, 1, 0)$ lies on line ℓ_9
 65 : $P_{4163} = (1, 0, 0, 1)$ lies on line ℓ_2
 66 : $P_{4282} = (56, 1, 0, 1)$ lies on line ℓ_8
 67 : $P_{4283} = (57, 1, 0, 1)$ lies on line ℓ_9
 68 : $P_{7802} = (56, 56, 0, 1)$ lies on line ℓ_3
 69 : $P_{7803} = (57, 56, 0, 1)$ lies on line ℓ_5
 70 : $P_{7866} = (56, 57, 0, 1)$ lies on line ℓ_6
 71 : $P_{7867} = (57, 57, 0, 1)$ lies on line ℓ_4
 72 : $P_{8258} = (0, 0, 1, 1)$ lies on line ℓ_1
 73 : $P_{8259} = (1, 0, 1, 1)$ lies on line ℓ_2
 74 : $P_{8322} = (0, 1, 1, 1)$ lies on line ℓ_7
 75 : $P_{11842} = (1, 56, 1, 1)$ lies on line ℓ_5
 76 : $P_{11906} = (1, 57, 1, 1)$ lies on line ℓ_6
 77 : $P_{12353} = (0, 0, 2, 1)$ lies on line ℓ_1
 78 : $P_{12354} = (1, 0, 2, 1)$ lies on line ℓ_2
 79 : $P_{12481} = (0, 2, 2, 1)$ lies on line ℓ_7
 80 : $P_{13435} = (58, 16, 2, 1)$ lies on line ℓ_8
 81 : $P_{13564} = (59, 18, 2, 1)$ lies on line ℓ_9
 82 : $P_{15977} = (40, 56, 2, 1)$ lies on line ℓ_5
 83 : $P_{15993} = (56, 56, 2, 1)$ lies on line ℓ_3
 84 : $P_{16044} = (43, 57, 2, 1)$ lies on line ℓ_6
 85 : $P_{16058} = (57, 57, 2, 1)$ lies on line ℓ_4
 86 : $P_{16449} = (0, 0, 3, 1)$ lies on line ℓ_1
 87 : $P_{16450} = (1, 0, 3, 1)$ lies on line ℓ_2
 88 : $P_{16641} = (0, 3, 3, 1)$ lies on line ℓ_7
 89 : $P_{19068} = (59, 40, 3, 1)$ lies on line ℓ_8
 90 : $P_{19259} = (58, 43, 3, 1)$ lies on line ℓ_9
 91 : $P_{20049} = (16, 56, 3, 1)$ lies on line ℓ_5
 92 : $P_{20089} = (56, 56, 3, 1)$ lies on line ℓ_3
 93 : $P_{20115} = (18, 57, 3, 1)$ lies on line ℓ_6
 94 : $P_{20154} = (57, 57, 3, 1)$ lies on line ℓ_4
 95 : $P_{20545} = (0, 0, 4, 1)$ lies on line ℓ_1
 96 : $P_{20546} = (1, 0, 4, 1)$ lies on line ℓ_2
 97 : $P_{20801} = (0, 4, 4, 1)$ lies on line ℓ_7
 98 : $P_{22845} = (60, 35, 4, 1)$ lies on line ℓ_8
 99 : $P_{23102} = (61, 39, 4, 1)$ lies on line ℓ_9
 100 : $P_{24156} = (27, 56, 4, 1)$ lies on line ℓ_5
 101 : $P_{24185} = (56, 56, 4, 1)$ lies on line ℓ_3
 102 : $P_{24223} = (30, 57, 4, 1)$ lies on line ℓ_6
 103 : $P_{24250} = (57, 57, 4, 1)$ lies on line ℓ_4
 104 : $P_{24641} = (0, 0, 5, 1)$ lies on line ℓ_1
 105 : $P_{24642} = (1, 0, 5, 1)$ lies on line ℓ_2
 106 : $P_{24961} = (0, 5, 5, 1)$ lies on line ℓ_7
 107 : $P_{26430} = (61, 27, 5, 1)$ lies on line ℓ_8

108 : $P_{26621} = (60, 30, 5, 1)$ lies on line ℓ_9
109 : $P_{28260} = (35, 56, 5, 1)$ lies on line ℓ_5
110 : $P_{28281} = (56, 56, 5, 1)$ lies on line ℓ_3
111 : $P_{28328} = (39, 57, 5, 1)$ lies on line ℓ_6
112 : $P_{28346} = (57, 57, 5, 1)$ lies on line ℓ_4
113 : $P_{28737} = (0, 0, 6, 1)$ lies on line ℓ_1
114 : $P_{28738} = (1, 0, 6, 1)$ lies on line ℓ_2
115 : $P_{29121} = (0, 6, 6, 1)$ lies on line ℓ_7
116 : $P_{31999} = (62, 50, 6, 1)$ lies on line ℓ_8
117 : $P_{32128} = (63, 52, 6, 1)$ lies on line ℓ_9
118 : $P_{32331} = (10, 56, 6, 1)$ lies on line ℓ_5
119 : $P_{32377} = (56, 56, 6, 1)$ lies on line ℓ_3
120 : $P_{32398} = (13, 57, 6, 1)$ lies on line ℓ_6
121 : $P_{32442} = (57, 57, 6, 1)$ lies on line ℓ_4
122 : $P_{32833} = (0, 0, 7, 1)$ lies on line ℓ_1
123 : $P_{32834} = (1, 0, 7, 1)$ lies on line ℓ_2
124 : $P_{33281} = (0, 7, 7, 1)$ lies on line ℓ_7
125 : $P_{33536} = (63, 10, 7, 1)$ lies on line ℓ_8
126 : $P_{33727} = (62, 13, 7, 1)$ lies on line ℓ_9
127 : $P_{36467} = (50, 56, 7, 1)$ lies on line ℓ_5
128 : $P_{36473} = (56, 56, 7, 1)$ lies on line ℓ_3
129 : $P_{36533} = (52, 57, 7, 1)$ lies on line ℓ_6
130 : $P_{36538} = (57, 57, 7, 1)$ lies on line ℓ_4
131 : $P_{36929} = (0, 0, 8, 1)$ lies on line ℓ_1
132 : $P_{36930} = (1, 0, 8, 1)$ lies on line ℓ_2
133 : $P_{37441} = (0, 8, 8, 1)$ lies on line ℓ_7
134 : $P_{39281} = (48, 36, 8, 1)$ lies on line ℓ_8
135 : $P_{39794} = (49, 44, 8, 1)$ lies on line ℓ_9
136 : $P_{40541} = (28, 56, 8, 1)$ lies on line ℓ_5
137 : $P_{40569} = (56, 56, 8, 1)$ lies on line ℓ_3
138 : $P_{40598} = (21, 57, 8, 1)$ lies on line ℓ_6
139 : $P_{40634} = (57, 57, 8, 1)$ lies on line ℓ_4
140 : $P_{41025} = (0, 0, 9, 1)$ lies on line ℓ_1
141 : $P_{41026} = (1, 0, 9, 1)$ lies on line ℓ_2
142 : $P_{41601} = (0, 9, 9, 1)$ lies on line ℓ_7
143 : $P_{42417} = (48, 21, 9, 1)$ lies on line ℓ_9
144 : $P_{42866} = (49, 28, 9, 1)$ lies on line ℓ_8
145 : $P_{44645} = (36, 56, 9, 1)$ lies on line ℓ_5
146 : $P_{44665} = (56, 56, 9, 1)$ lies on line ℓ_3
147 : $P_{44717} = (44, 57, 9, 1)$ lies on line ℓ_6
148 : $P_{44730} = (57, 57, 9, 1)$ lies on line ℓ_4
149 : $P_{45121} = (0, 0, 10, 1)$ lies on line ℓ_1
150 : $P_{45122} = (1, 0, 10, 1)$ lies on line ℓ_2
151 : $P_{45761} = (0, 10, 10, 1)$ lies on line ℓ_7
152 : $P_{48563} = (50, 53, 10, 1)$ lies on line ℓ_8
153 : $P_{48718} = (13, 56, 10, 1)$ lies on line ℓ_5
154 : $P_{48761} = (56, 56, 10, 1)$ lies on line ℓ_3
155 : $P_{48775} = (6, 57, 10, 1)$ lies on line ℓ_6
156 : $P_{48826} = (57, 57, 10, 1)$ lies on line ℓ_4
157 : $P_{49204} = (51, 63, 10, 1)$ lies on line ℓ_9
158 : $P_{49217} = (0, 0, 11, 1)$ lies on line ℓ_1
159 : $P_{49218} = (1, 0, 11, 1)$ lies on line ℓ_2
160 : $P_{49651} = (50, 6, 11, 1)$ lies on line ℓ_9
161 : $P_{49921} = (0, 11, 11, 1)$ lies on line ℓ_7
162 : $P_{50100} = (51, 13, 11, 1)$ lies on line ℓ_8
163 : $P_{52854} = (53, 56, 11, 1)$ lies on line ℓ_5
164 : $P_{52857} = (56, 56, 11, 1)$ lies on line ℓ_3
165 : $P_{52922} = (57, 57, 11, 1)$ lies on line ℓ_4
166 : $P_{52928} = (63, 57, 11, 1)$ lies on line ℓ_6
167 : $P_{53313} = (0, 0, 12, 1)$ lies on line ℓ_1
168 : $P_{53314} = (1, 0, 12, 1)$ lies on line ℓ_2
169 : $P_{53749} = (52, 6, 12, 1)$ lies on line ℓ_8
170 : $P_{54006} = (53, 10, 12, 1)$ lies on line ℓ_9
171 : $P_{54081} = (0, 12, 12, 1)$ lies on line ℓ_7
172 : $P_{56953} = (56, 56, 12, 1)$ lies on line ℓ_3
173 : $P_{56959} = (62, 56, 12, 1)$ lies on line ℓ_5
174 : $P_{57012} = (51, 57, 12, 1)$ lies on line ℓ_6
175 : $P_{57018} = (57, 57, 12, 1)$ lies on line ℓ_4
176 : $P_{57409} = (0, 0, 13, 1)$ lies on line ℓ_1
177 : $P_{57410} = (1, 0, 13, 1)$ lies on line ℓ_2
178 : $P_{58241} = (0, 13, 13, 1)$ lies on line ℓ_7
179 : $P_{60725} = (52, 51, 13, 1)$ lies on line ℓ_9
180 : $P_{60999} = (6, 56, 13, 1)$ lies on line ℓ_5
181 : $P_{61049} = (56, 56, 13, 1)$ lies on line ℓ_3
182 : $P_{61067} = (10, 57, 13, 1)$ lies on line ℓ_6
183 : $P_{61114} = (57, 57, 13, 1)$ lies on line ℓ_4
184 : $P_{61430} = (53, 62, 13, 1)$ lies on line ℓ_8
185 : $P_{61505} = (0, 0, 14, 1)$ lies on line ℓ_1
186 : $P_{61506} = (1, 0, 14, 1)$ lies on line ℓ_2
187 : $P_{62401} = (0, 14, 14, 1)$ lies on line ℓ_7
188 : $P_{63031} = (54, 23, 14, 1)$ lies on line ℓ_8
189 : $P_{63160} = (55, 25, 14, 1)$ lies on line ℓ_9
190 : $P_{65136} = (47, 56, 14, 1)$ lies on line ℓ_5
191 : $P_{65145} = (56, 56, 14, 1)$ lies on line ℓ_3
192 : $P_{65185} = (32, 57, 14, 1)$ lies on line ℓ_6
193 : $P_{65210} = (57, 57, 14, 1)$ lies on line ℓ_4
194 : $P_{65601} = (0, 0, 15, 1)$ lies on line ℓ_1
195 : $P_{65602} = (1, 0, 15, 1)$ lies on line ℓ_2
196 : $P_{66561} = (0, 15, 15, 1)$ lies on line ℓ_7
197 : $P_{67703} = (54, 32, 15, 1)$ lies on line ℓ_9
198 : $P_{68664} = (55, 47, 15, 1)$ lies on line ℓ_8
199 : $P_{69208} = (23, 56, 15, 1)$ lies on line ℓ_5
200 : $P_{69241} = (56, 56, 15, 1)$ lies on line ℓ_3
201 : $P_{69274} = (25, 57, 15, 1)$ lies on line ℓ_6
202 : $P_{69306} = (57, 57, 15, 1)$ lies on line ℓ_4
203 : $P_{69697} = (0, 0, 16, 1)$ lies on line ℓ_1
204 : $P_{69698} = (1, 0, 16, 1)$ lies on line ℓ_2
205 : $P_{70721} = (0, 16, 16, 1)$ lies on line ℓ_7
206 : $P_{72425} = (40, 42, 16, 1)$ lies on line ℓ_8
207 : $P_{73299} = (18, 56, 16, 1)$ lies on line ℓ_5
208 : $P_{73337} = (56, 56, 16, 1)$ lies on line ℓ_3
209 : $P_{73348} = (3, 57, 16, 1)$ lies on line ℓ_6
210 : $P_{73402} = (57, 57, 16, 1)$ lies on line ℓ_4
211 : $P_{73450} = (41, 58, 16, 1)$ lies on line ℓ_9
212 : $P_{73793} = (0, 0, 17, 1)$ lies on line ℓ_1
213 : $P_{73794} = (1, 0, 17, 1)$ lies on line ℓ_2
214 : $P_{74025} = (40, 3, 17, 1)$ lies on line ℓ_9
215 : $P_{74881} = (0, 17, 17, 1)$ lies on line ℓ_7

216 : $P_{74986} = (41, 18, 17, 1)$ lies on line ℓ_8
 217 : $P_{77419} = (42, 56, 17, 1)$ lies on line ℓ_5
 218 : $P_{77433} = (56, 56, 17, 1)$ lies on line ℓ_3
 219 : $P_{77498} = (57, 57, 17, 1)$ lies on line ℓ_4
 220 : $P_{77499} = (58, 57, 17, 1)$ lies on line ℓ_6
 221 : $P_{77889} = (0, 0, 18, 1)$ lies on line ℓ_1
 222 : $P_{77890} = (1, 0, 18, 1)$ lies on line ℓ_2
 223 : $P_{79041} = (0, 18, 18, 1)$ lies on line ℓ_7
 224 : $P_{80556} = (43, 41, 18, 1)$ lies on line ℓ_9
 225 : $P_{81476} = (3, 56, 18, 1)$ lies on line ℓ_5
 226 : $P_{81529} = (56, 56, 18, 1)$ lies on line ℓ_3
 227 : $P_{81553} = (16, 57, 18, 1)$ lies on line ℓ_6
 228 : $P_{81594} = (57, 57, 18, 1)$ lies on line ℓ_4
 229 : $P_{81707} = (42, 59, 18, 1)$ lies on line ℓ_8
 230 : $P_{81985} = (0, 0, 19, 1)$ lies on line ℓ_1
 231 : $P_{81986} = (1, 0, 19, 1)$ lies on line ℓ_2
 232 : $P_{82220} = (43, 3, 19, 1)$ lies on line ℓ_8
 233 : $P_{83051} = (42, 16, 19, 1)$ lies on line ℓ_9
 234 : $P_{83201} = (0, 19, 19, 1)$ lies on line ℓ_7
 235 : $P_{85625} = (56, 56, 19, 1)$ lies on line ℓ_3
 236 : $P_{85628} = (59, 56, 19, 1)$ lies on line ℓ_5
 237 : $P_{85674} = (41, 57, 19, 1)$ lies on line ℓ_6
 238 : $P_{85690} = (57, 57, 19, 1)$ lies on line ℓ_4
 239 : $P_{86081} = (0, 0, 20, 1)$ lies on line ℓ_1
 240 : $P_{86082} = (1, 0, 20, 1)$ lies on line ℓ_2
 241 : $P_{86637} = (44, 8, 20, 1)$ lies on line ℓ_8
 242 : $P_{87361} = (0, 20, 20, 1)$ lies on line ℓ_7
 243 : $P_{87918} = (45, 28, 20, 1)$ lies on line ℓ_9
 244 : $P_{89713} = (48, 56, 20, 1)$ lies on line ℓ_5
 245 : $P_{89721} = (56, 56, 20, 1)$ lies on line ℓ_3
 246 : $P_{89766} = (37, 57, 20, 1)$ lies on line ℓ_6
 247 : $P_{89786} = (57, 57, 20, 1)$ lies on line ℓ_4
 248 : $P_{90177} = (0, 0, 21, 1)$ lies on line ℓ_1
 249 : $P_{90178} = (1, 0, 21, 1)$ lies on line ℓ_2
 250 : $P_{91521} = (0, 21, 21, 1)$ lies on line ℓ_7
 251 : $P_{92589} = (44, 37, 21, 1)$ lies on line ℓ_9
 252 : $P_{93294} = (45, 48, 21, 1)$ lies on line ℓ_8
 253 : $P_{93769} = (8, 56, 21, 1)$ lies on line ℓ_5
 254 : $P_{93817} = (56, 56, 21, 1)$ lies on line ℓ_3
 255 : $P_{93853} = (28, 57, 21, 1)$ lies on line ℓ_6
 256 : $P_{93882} = (57, 57, 21, 1)$ lies on line ℓ_4
 257 : $P_{94273} = (0, 0, 22, 1)$ lies on line ℓ_1
 258 : $P_{94274} = (1, 0, 22, 1)$ lies on line ℓ_2
 259 : $P_{95280} = (47, 15, 22, 1)$ lies on line ℓ_9
 260 : $P_{95681} = (0, 22, 22, 1)$ lies on line ℓ_7
 261 : $P_{95919} = (46, 25, 22, 1)$ lies on line ℓ_8
 262 : $P_{97890} = (33, 56, 22, 1)$ lies on line ℓ_5
 263 : $P_{97913} = (56, 56, 22, 1)$ lies on line ℓ_3
 264 : $P_{97975} = (54, 57, 22, 1)$ lies on line ℓ_6
 265 : $P_{97978} = (57, 57, 22, 1)$ lies on line ℓ_4
 266 : $P_{98369} = (0, 0, 23, 1)$ lies on line ℓ_1
 267 : $P_{98370} = (1, 0, 23, 1)$ lies on line ℓ_2
 268 : $P_{99841} = (0, 23, 23, 1)$ lies on line ℓ_7
 269 : $P_{100528} = (47, 33, 23, 1)$ lies on line ℓ_8

270 : $P_{101871} = (46, 54, 23, 1)$ lies on line ℓ_9
 271 : $P_{101978} = (25, 56, 23, 1)$ lies on line ℓ_5
 272 : $P_{102009} = (56, 56, 23, 1)$ lies on line ℓ_3
 273 : $P_{102032} = (15, 57, 23, 1)$ lies on line ℓ_6
 274 : $P_{102074} = (57, 57, 23, 1)$ lies on line ℓ_4
 275 : $P_{102465} = (0, 0, 24, 1)$ lies on line ℓ_1
 276 : $P_{102466} = (1, 0, 24, 1)$ lies on line ℓ_2
 277 : $P_{103457} = (32, 15, 24, 1)$ lies on line ℓ_8
 278 : $P_{103970} = (33, 23, 24, 1)$ lies on line ℓ_9
 279 : $P_{104001} = (0, 24, 24, 1)$ lies on line ℓ_7
 280 : $P_{106104} = (55, 56, 24, 1)$ lies on line ℓ_5
 281 : $P_{106105} = (56, 56, 24, 1)$ lies on line ℓ_3
 282 : $P_{106159} = (46, 57, 24, 1)$ lies on line ℓ_6
 283 : $P_{106170} = (57, 57, 24, 1)$ lies on line ℓ_4
 284 : $P_{106561} = (0, 0, 25, 1)$ lies on line ℓ_1
 285 : $P_{106562} = (1, 0, 25, 1)$ lies on line ℓ_2
 286 : $P_{108161} = (0, 25, 25, 1)$ lies on line ℓ_7
 287 : $P_{109537} = (32, 46, 25, 1)$ lies on line ℓ_9
 288 : $P_{110114} = (33, 55, 25, 1)$ lies on line ℓ_8
 289 : $P_{110160} = (15, 56, 25, 1)$ lies on line ℓ_5
 290 : $P_{110201} = (56, 56, 25, 1)$ lies on line ℓ_3
 291 : $P_{110232} = (23, 57, 25, 1)$ lies on line ℓ_6
 292 : $P_{110266} = (57, 57, 25, 1)$ lies on line ℓ_4
 293 : $P_{110657} = (0, 0, 26, 1)$ lies on line ℓ_1
 294 : $P_{110658} = (1, 0, 26, 1)$ lies on line ℓ_2
 295 : $P_{110948} = (35, 4, 26, 1)$ lies on line ℓ_9
 296 : $P_{112321} = (0, 26, 26, 1)$ lies on line ℓ_7
 297 : $P_{112611} = (34, 30, 26, 1)$ lies on line ℓ_8
 298 : $P_{114279} = (38, 56, 26, 1)$ lies on line ℓ_5
 299 : $P_{114297} = (56, 56, 26, 1)$ lies on line ℓ_3
 300 : $P_{114362} = (57, 57, 26, 1)$ lies on line ℓ_4
 301 : $P_{114366} = (61, 57, 26, 1)$ lies on line ℓ_6
 302 : $P_{114753} = (0, 0, 27, 1)$ lies on line ℓ_1
 303 : $P_{114754} = (1, 0, 27, 1)$ lies on line ℓ_2
 304 : $P_{116481} = (0, 27, 27, 1)$ lies on line ℓ_7
 305 : $P_{117220} = (35, 38, 27, 1)$ lies on line ℓ_8
 306 : $P_{118367} = (30, 56, 27, 1)$ lies on line ℓ_5
 307 : $P_{118393} = (56, 56, 27, 1)$ lies on line ℓ_3
 308 : $P_{118405} = (4, 57, 27, 1)$ lies on line ℓ_6
 309 : $P_{118458} = (57, 57, 27, 1)$ lies on line ℓ_4
 310 : $P_{118691} = (34, 61, 27, 1)$ lies on line ℓ_9
 311 : $P_{118849} = (0, 0, 28, 1)$ lies on line ℓ_1
 312 : $P_{118850} = (1, 0, 28, 1)$ lies on line ℓ_2
 313 : $P_{120641} = (0, 28, 28, 1)$ lies on line ℓ_7
 314 : $P_{121765} = (36, 45, 28, 1)$ lies on line ℓ_8
 315 : $P_{122022} = (37, 49, 28, 1)$ lies on line ℓ_9
 316 : $P_{122454} = (21, 56, 28, 1)$ lies on line ℓ_5
 317 : $P_{122489} = (56, 56, 28, 1)$ lies on line ℓ_3
 318 : $P_{122505} = (8, 57, 28, 1)$ lies on line ℓ_6
 319 : $P_{122554} = (57, 57, 28, 1)$ lies on line ℓ_4
 320 : $P_{122945} = (0, 0, 29, 1)$ lies on line ℓ_1
 321 : $P_{122946} = (1, 0, 29, 1)$ lies on line ℓ_2
 322 : $P_{123493} = (36, 8, 29, 1)$ lies on line ℓ_9
 323 : $P_{124326} = (37, 21, 29, 1)$ lies on line ℓ_8

324 : $P_{124801} = (0, 29, 29, 1)$ lies on line ℓ_7
 325 : $P_{126574} = (45, 56, 29, 1)$ lies on line ℓ_5
 326 : $P_{126585} = (56, 56, 29, 1)$ lies on line ℓ_3
 327 : $P_{126642} = (49, 57, 29, 1)$ lies on line ℓ_6
 328 : $P_{126650} = (57, 57, 29, 1)$ lies on line ℓ_4
 329 : $P_{127041} = (0, 0, 30, 1)$ lies on line ℓ_1
 330 : $P_{127042} = (1, 0, 30, 1)$ lies on line ℓ_2
 331 : $P_{128961} = (0, 30, 30, 1)$ lies on line ℓ_7
 332 : $P_{129256} = (39, 34, 30, 1)$ lies on line ℓ_9
 333 : $P_{130629} = (4, 56, 30, 1)$ lies on line ℓ_5
 334 : $P_{130681} = (56, 56, 30, 1)$ lies on line ℓ_3
 335 : $P_{130716} = (27, 57, 30, 1)$ lies on line ℓ_6
 336 : $P_{130746} = (57, 57, 30, 1)$ lies on line ℓ_4
 337 : $P_{130919} = (38, 60, 30, 1)$ lies on line ℓ_8
 338 : $P_{131137} = (0, 0, 31, 1)$ lies on line ℓ_1
 339 : $P_{131138} = (1, 0, 31, 1)$ lies on line ℓ_2
 340 : $P_{131432} = (39, 4, 31, 1)$ lies on line ℓ_8
 341 : $P_{132903} = (38, 27, 31, 1)$ lies on line ℓ_9
 342 : $P_{133121} = (0, 31, 31, 1)$ lies on line ℓ_7
 343 : $P_{134777} = (56, 56, 31, 1)$ lies on line ℓ_3
 344 : $P_{134781} = (60, 56, 31, 1)$ lies on line ℓ_5
 345 : $P_{134819} = (34, 57, 31, 1)$ lies on line ℓ_6
 346 : $P_{134842} = (57, 57, 31, 1)$ lies on line ℓ_4
 347 : $P_{135233} = (0, 0, 32, 1)$ lies on line ℓ_1
 348 : $P_{135234} = (1, 0, 32, 1)$ lies on line ℓ_2
 349 : $P_{136666} = (25, 22, 32, 1)$ lies on line ℓ_9
 350 : $P_{137281} = (0, 32, 32, 1)$ lies on line ℓ_7
 351 : $P_{138713} = (24, 54, 32, 1)$ lies on line ℓ_8
 352 : $P_{138831} = (14, 56, 32, 1)$ lies on line ℓ_5
 353 : $P_{138873} = (56, 56, 32, 1)$ lies on line ℓ_3
 354 : $P_{138928} = (47, 57, 32, 1)$ lies on line ℓ_6
 355 : $P_{138938} = (57, 57, 32, 1)$ lies on line ℓ_4
 356 : $P_{139329} = (0, 0, 33, 1)$ lies on line ℓ_1
 357 : $P_{139330} = (1, 0, 33, 1)$ lies on line ℓ_2
 358 : $P_{140250} = (25, 14, 33, 1)$ lies on line ℓ_8
 359 : $P_{141441} = (0, 33, 33, 1)$ lies on line ℓ_7
 360 : $P_{142361} = (24, 47, 33, 1)$ lies on line ℓ_9
 361 : $P_{142967} = (54, 56, 33, 1)$ lies on line ℓ_5
 362 : $P_{142969} = (56, 56, 33, 1)$ lies on line ℓ_3
 363 : $P_{142999} = (22, 57, 33, 1)$ lies on line ℓ_6
 364 : $P_{143034} = (57, 57, 33, 1)$ lies on line ℓ_4
 365 : $P_{143425} = (0, 0, 34, 1)$ lies on line ℓ_1
 366 : $P_{143426} = (1, 0, 34, 1)$ lies on line ℓ_2
 367 : $P_{143772} = (27, 5, 34, 1)$ lies on line ℓ_9
 368 : $P_{145601} = (0, 34, 34, 1)$ lies on line ℓ_7
 369 : $P_{145947} = (26, 39, 34, 1)$ lies on line ℓ_8
 370 : $P_{147040} = (31, 56, 34, 1)$ lies on line ℓ_5
 371 : $P_{147065} = (56, 56, 34, 1)$ lies on line ℓ_3
 372 : $P_{147130} = (57, 57, 34, 1)$ lies on line ℓ_4
 373 : $P_{147133} = (60, 57, 34, 1)$ lies on line ℓ_6
 374 : $P_{147521} = (0, 0, 35, 1)$ lies on line ℓ_1
 375 : $P_{147522} = (1, 0, 35, 1)$ lies on line ℓ_2
 376 : $P_{149532} = (27, 31, 35, 1)$ lies on line ℓ_8
 377 : $P_{149761} = (0, 35, 35, 1)$ lies on line ℓ_7
 378 : $P_{151144} = (39, 56, 35, 1)$ lies on line ℓ_5
 379 : $P_{151161} = (56, 56, 35, 1)$ lies on line ℓ_3
 380 : $P_{151174} = (5, 57, 35, 1)$ lies on line ℓ_6
 381 : $P_{151226} = (57, 57, 35, 1)$ lies on line ℓ_4
 382 : $P_{151387} = (26, 60, 35, 1)$ lies on line ℓ_9
 383 : $P_{151617} = (0, 0, 36, 1)$ lies on line ℓ_1
 384 : $P_{151618} = (1, 0, 36, 1)$ lies on line ℓ_2
 385 : $P_{152925} = (28, 20, 36, 1)$ lies on line ℓ_8
 386 : $P_{153921} = (0, 36, 36, 1)$ lies on line ℓ_7
 387 : $P_{154718} = (29, 48, 36, 1)$ lies on line ℓ_9
 388 : $P_{155245} = (44, 56, 36, 1)$ lies on line ℓ_5
 389 : $P_{155257} = (56, 56, 36, 1)$ lies on line ℓ_3
 390 : $P_{155274} = (9, 57, 36, 1)$ lies on line ℓ_6
 391 : $P_{155322} = (57, 57, 36, 1)$ lies on line ℓ_4
 392 : $P_{155713} = (0, 0, 37, 1)$ lies on line ℓ_1
 393 : $P_{155714} = (1, 0, 37, 1)$ lies on line ℓ_2
 394 : $P_{156317} = (28, 9, 37, 1)$ lies on line ℓ_9
 395 : $P_{158081} = (0, 37, 37, 1)$ lies on line ℓ_7
 396 : $P_{158558} = (29, 44, 37, 1)$ lies on line ℓ_8
 397 : $P_{159317} = (20, 56, 37, 1)$ lies on line ℓ_5
 398 : $P_{159353} = (56, 56, 37, 1)$ lies on line ℓ_3
 399 : $P_{159409} = (48, 57, 37, 1)$ lies on line ℓ_6
 400 : $P_{159418} = (57, 57, 37, 1)$ lies on line ℓ_4
 401 : $P_{159809} = (0, 0, 38, 1)$ lies on line ℓ_1
 402 : $P_{159810} = (1, 0, 38, 1)$ lies on line ℓ_2
 403 : $P_{160159} = (30, 5, 38, 1)$ lies on line ℓ_8
 404 : $P_{162080} = (31, 35, 38, 1)$ lies on line ℓ_9
 405 : $P_{162241} = (0, 38, 38, 1)$ lies on line ℓ_7
 406 : $P_{163449} = (56, 56, 38, 1)$ lies on line ℓ_3
 407 : $P_{163454} = (61, 56, 38, 1)$ lies on line ℓ_5
 408 : $P_{163483} = (26, 57, 38, 1)$ lies on line ℓ_6
 409 : $P_{163514} = (57, 57, 38, 1)$ lies on line ℓ_4
 410 : $P_{163905} = (0, 0, 39, 1)$ lies on line ℓ_1
 411 : $P_{163906} = (1, 0, 39, 1)$ lies on line ℓ_2
 412 : $P_{165599} = (30, 26, 39, 1)$ lies on line ℓ_9
 413 : $P_{166401} = (0, 39, 39, 1)$ lies on line ℓ_7
 414 : $P_{167494} = (5, 56, 39, 1)$ lies on line ℓ_5
 415 : $P_{167545} = (56, 56, 39, 1)$ lies on line ℓ_3
 416 : $P_{167588} = (35, 57, 39, 1)$ lies on line ℓ_6
 417 : $P_{167610} = (57, 57, 39, 1)$ lies on line ℓ_4
 418 : $P_{167840} = (31, 61, 39, 1)$ lies on line ℓ_8
 419 : $P_{168001} = (0, 0, 40, 1)$ lies on line ℓ_1
 420 : $P_{168002} = (1, 0, 40, 1)$ lies on line ℓ_2
 421 : $P_{169233} = (16, 19, 40, 1)$ lies on line ℓ_8
 422 : $P_{170561} = (0, 40, 40, 1)$ lies on line ℓ_7
 423 : $P_{171628} = (43, 56, 40, 1)$ lies on line ℓ_5
 424 : $P_{171641} = (56, 56, 40, 1)$ lies on line ℓ_3
 425 : $P_{171651} = (2, 57, 40, 1)$ lies on line ℓ_6
 426 : $P_{171706} = (57, 57, 40, 1)$ lies on line ℓ_4
 427 : $P_{171794} = (17, 59, 40, 1)$ lies on line ℓ_9
 428 : $P_{172097} = (0, 0, 41, 1)$ lies on line ℓ_1
 429 : $P_{172098} = (1, 0, 41, 1)$ lies on line ℓ_2
 430 : $P_{172241} = (16, 2, 41, 1)$ lies on line ℓ_9
 431 : $P_{174721} = (0, 41, 41, 1)$ lies on line ℓ_7

432 : $P_{174866} = (17, 43, 41, 1)$ lies on line ℓ_8
 433 : $P_{175700} = (19, 56, 41, 1)$ lies on line ℓ_5
 434 : $P_{175737} = (56, 56, 41, 1)$ lies on line ℓ_3
 435 : $P_{175802} = (57, 57, 41, 1)$ lies on line ℓ_4
 436 : $P_{175804} = (59, 57, 41, 1)$ lies on line ℓ_6
 437 : $P_{176193} = (0, 0, 42, 1)$ lies on line ℓ_1
 438 : $P_{176194} = (1, 0, 42, 1)$ lies on line ℓ_2
 439 : $P_{176339} = (18, 2, 42, 1)$ lies on line ℓ_8
 440 : $P_{178772} = (19, 40, 42, 1)$ lies on line ℓ_9
 441 : $P_{178881} = (0, 42, 42, 1)$ lies on line ℓ_7
 442 : $P_{179833} = (56, 56, 42, 1)$ lies on line ℓ_3
 443 : $P_{179835} = (58, 56, 42, 1)$ lies on line ℓ_5
 444 : $P_{179858} = (17, 57, 42, 1)$ lies on line ℓ_6
 445 : $P_{179898} = (57, 57, 42, 1)$ lies on line ℓ_4
 446 : $P_{180289} = (0, 0, 43, 1)$ lies on line ℓ_1
 447 : $P_{180290} = (1, 0, 43, 1)$ lies on line ℓ_2
 448 : $P_{181395} = (18, 17, 43, 1)$ lies on line ℓ_9
 449 : $P_{183041} = (0, 43, 43, 1)$ lies on line ℓ_7
 450 : $P_{183875} = (2, 56, 43, 1)$ lies on line ℓ_5
 451 : $P_{183929} = (56, 56, 43, 1)$ lies on line ℓ_3
 452 : $P_{183977} = (40, 57, 43, 1)$ lies on line ℓ_6
 453 : $P_{183994} = (57, 57, 43, 1)$ lies on line ℓ_4
 454 : $P_{184020} = (19, 58, 43, 1)$ lies on line ℓ_8
 455 : $P_{184385} = (0, 0, 44, 1)$ lies on line ℓ_1
 456 : $P_{184386} = (1, 0, 44, 1)$ lies on line ℓ_2
 457 : $P_{186262} = (21, 29, 44, 1)$ lies on line ℓ_9
 458 : $P_{187201} = (0, 44, 44, 1)$ lies on line ℓ_7
 459 : $P_{187541} = (20, 49, 44, 1)$ lies on line ℓ_8
 460 : $P_{187978} = (9, 56, 44, 1)$ lies on line ℓ_5
 461 : $P_{188025} = (56, 56, 44, 1)$ lies on line ℓ_3
 462 : $P_{188069} = (36, 57, 44, 1)$ lies on line ℓ_6
 463 : $P_{188090} = (57, 57, 44, 1)$ lies on line ℓ_4
 464 : $P_{188481} = (0, 0, 45, 1)$ lies on line ℓ_1
 465 : $P_{188482} = (1, 0, 45, 1)$ lies on line ℓ_2
 466 : $P_{189078} = (21, 9, 45, 1)$ lies on line ℓ_8
 467 : $P_{190805} = (20, 36, 45, 1)$ lies on line ℓ_9
 468 : $P_{191361} = (0, 45, 45, 1)$ lies on line ℓ_7
 469 : $P_{192114} = (49, 56, 45, 1)$ lies on line ℓ_5
 470 : $P_{192121} = (56, 56, 45, 1)$ lies on line ℓ_3
 471 : $P_{192158} = (29, 57, 45, 1)$ lies on line ℓ_6
 472 : $P_{192186} = (57, 57, 45, 1)$ lies on line ℓ_4
 473 : $P_{192577} = (0, 0, 46, 1)$ lies on line ℓ_1
 474 : $P_{192578} = (1, 0, 46, 1)$ lies on line ℓ_2
 475 : $P_{193496} = (23, 14, 46, 1)$ lies on line ℓ_9
 476 : $P_{194647} = (22, 32, 46, 1)$ lies on line ℓ_8
 477 : $P_{195521} = (0, 46, 46, 1)$ lies on line ℓ_7
 478 : $P_{196185} = (24, 56, 46, 1)$ lies on line ℓ_5
 479 : $P_{196217} = (56, 56, 46, 1)$ lies on line ℓ_3
 480 : $P_{196280} = (55, 57, 46, 1)$ lies on line ℓ_6
 481 : $P_{196282} = (57, 57, 46, 1)$ lies on line ℓ_4
 482 : $P_{196673} = (0, 0, 47, 1)$ lies on line ℓ_1
 483 : $P_{196674} = (1, 0, 47, 1)$ lies on line ℓ_2
 484 : $P_{198232} = (23, 24, 47, 1)$ lies on line ℓ_8
 485 : $P_{199681} = (0, 47, 47, 1)$ lies on line ℓ_7
 486 : $P_{200215} = (22, 55, 47, 1)$ lies on line ℓ_9
 487 : $P_{200289} = (32, 56, 47, 1)$ lies on line ℓ_5
 488 : $P_{200313} = (56, 56, 47, 1)$ lies on line ℓ_3
 489 : $P_{200335} = (14, 57, 47, 1)$ lies on line ℓ_6
 490 : $P_{200378} = (57, 57, 47, 1)$ lies on line ℓ_4
 491 : $P_{200769} = (0, 0, 48, 1)$ lies on line ℓ_1
 492 : $P_{200770} = (1, 0, 48, 1)$ lies on line ℓ_2
 493 : $P_{202633} = (8, 29, 48, 1)$ lies on line ℓ_8
 494 : $P_{203658} = (9, 45, 48, 1)$ lies on line ℓ_9
 495 : $P_{203841} = (0, 48, 48, 1)$ lies on line ℓ_7
 496 : $P_{204390} = (37, 56, 48, 1)$ lies on line ℓ_5
 497 : $P_{204409} = (56, 56, 48, 1)$ lies on line ℓ_3
 498 : $P_{204437} = (20, 57, 48, 1)$ lies on line ℓ_6
 499 : $P_{204474} = (57, 57, 48, 1)$ lies on line ℓ_4
 500 : $P_{204865} = (0, 0, 49, 1)$ lies on line ℓ_1
 501 : $P_{204866} = (1, 0, 49, 1)$ lies on line ℓ_2
 502 : $P_{206153} = (8, 20, 49, 1)$ lies on line ℓ_9
 503 : $P_{207242} = (9, 37, 49, 1)$ lies on line ℓ_8
 504 : $P_{208001} = (0, 49, 49, 1)$ lies on line ℓ_7
 505 : $P_{208478} = (29, 56, 49, 1)$ lies on line ℓ_5
 506 : $P_{208505} = (56, 56, 49, 1)$ lies on line ℓ_3
 507 : $P_{208558} = (45, 57, 49, 1)$ lies on line ℓ_6
 508 : $P_{208570} = (57, 57, 49, 1)$ lies on line ℓ_4
 509 : $P_{208961} = (0, 0, 50, 1)$ lies on line ℓ_1
 510 : $P_{208962} = (1, 0, 50, 1)$ lies on line ℓ_2
 511 : $P_{209739} = (10, 12, 50, 1)$ lies on line ℓ_8
 512 : $P_{212161} = (0, 50, 50, 1)$ lies on line ℓ_7
 513 : $P_{212597} = (52, 56, 50, 1)$ lies on line ℓ_5
 514 : $P_{212601} = (56, 56, 50, 1)$ lies on line ℓ_3
 515 : $P_{212616} = (7, 57, 50, 1)$ lies on line ℓ_6
 516 : $P_{212666} = (57, 57, 50, 1)$ lies on line ℓ_4
 517 : $P_{212940} = (11, 62, 50, 1)$ lies on line ℓ_9
 518 : $P_{213057} = (0, 0, 51, 1)$ lies on line ℓ_1
 519 : $P_{213058} = (1, 0, 51, 1)$ lies on line ℓ_2
 520 : $P_{213515} = (10, 7, 51, 1)$ lies on line ℓ_8
 521 : $P_{216321} = (0, 51, 51, 1)$ lies on line ℓ_7
 522 : $P_{216396} = (11, 52, 51, 1)$ lies on line ℓ_5
 523 : $P_{216653} = (12, 56, 51, 1)$ lies on line ℓ_3
 524 : $P_{216697} = (56, 56, 51, 1)$ lies on line ℓ_6
 525 : $P_{216762} = (57, 57, 51, 1)$ lies on line ℓ_4
 526 : $P_{216767} = (62, 57, 51, 1)$ lies on line ℓ_9
 527 : $P_{217153} = (0, 0, 52, 1)$ lies on line ℓ_1
 528 : $P_{217154} = (1, 0, 52, 1)$ lies on line ℓ_2
 529 : $P_{217870} = (13, 11, 52, 1)$ lies on line ℓ_8
 530 : $P_{220481} = (0, 52, 52, 1)$ lies on line ℓ_7
 531 : $P_{220744} = (7, 56, 52, 1)$ lies on line ℓ_5
 532 : $P_{220793} = (56, 56, 52, 1)$ lies on line ℓ_3
 533 : $P_{220851} = (50, 57, 52, 1)$ lies on line ℓ_6
 534 : $P_{220858} = (57, 57, 52, 1)$ lies on line ℓ_4
 535 : $P_{221197} = (12, 63, 52, 1)$ lies on line ℓ_9
 536 : $P_{221249} = (0, 0, 53, 1)$ lies on line ℓ_1
 537 : $P_{221250} = (1, 0, 53, 1)$ lies on line ℓ_2
 538 : $P_{221710} = (13, 7, 53, 1)$ lies on line ℓ_8
 539 : $P_{224461} = (12, 50, 53, 1)$ lies on line ℓ_5

540 : $P_{224641} = (0, 53, 53, 1)$ lies on line ℓ_7
 541 : $P_{224889} = (56, 56, 53, 1)$ lies on line ℓ_3
 542 : $P_{224896} = (63, 56, 53, 1)$ lies on line ℓ_5
 543 : $P_{224908} = (11, 57, 53, 1)$ lies on line ℓ_6
 544 : $P_{224954} = (57, 57, 53, 1)$ lies on line ℓ_4
 545 : $P_{225345} = (0, 0, 54, 1)$ lies on line ℓ_1
 546 : $P_{225346} = (1, 0, 54, 1)$ lies on line ℓ_2
 547 : $P_{226896} = (15, 24, 54, 1)$ lies on line ℓ_9
 548 : $P_{228303} = (14, 46, 54, 1)$ lies on line ℓ_8
 549 : $P_{228801} = (0, 54, 54, 1)$ lies on line ℓ_7
 550 : $P_{228951} = (22, 56, 54, 1)$ lies on line ℓ_5
 551 : $P_{228985} = (56, 56, 54, 1)$ lies on line ℓ_3
 552 : $P_{229026} = (33, 57, 54, 1)$ lies on line ℓ_6
 553 : $P_{229050} = (57, 57, 54, 1)$ lies on line ℓ_4
 554 : $P_{229441} = (0, 0, 55, 1)$ lies on line ℓ_1
 555 : $P_{229442} = (1, 0, 55, 1)$ lies on line ℓ_2
 556 : $P_{230864} = (15, 22, 55, 1)$ lies on line ℓ_8
 557 : $P_{231567} = (14, 33, 55, 1)$ lies on line ℓ_9
 558 : $P_{232961} = (0, 55, 55, 1)$ lies on line ℓ_7
 559 : $P_{233071} = (46, 56, 55, 1)$ lies on line ℓ_5
 560 : $P_{233081} = (56, 56, 55, 1)$ lies on line ℓ_3
 561 : $P_{233113} = (24, 57, 55, 1)$ lies on line ℓ_6
 562 : $P_{233146} = (57, 57, 55, 1)$ lies on line ℓ_4
 563 : $P_{233537} = (0, 0, 56, 1)$ lies on line ℓ_1
 564 : $P_{237177} = (56, 56, 56, 1)$ lies on line ℓ_3
 565 : $P_{237633} = (0, 0, 57, 1)$ lies on line ℓ_1
 566 : $P_{241338} = (57, 57, 57, 1)$ lies on line ℓ_4
 567 : $P_{241729} = (0, 0, 58, 1)$ lies on line ℓ_1
 568 : $P_{241730} = (1, 0, 58, 1)$ lies on line ℓ_2
 569 : $P_{242948} = (3, 19, 58, 1)$ lies on line ℓ_9
 570 : $P_{244355} = (2, 41, 58, 1)$ lies on line ℓ_8
 571 : $P_{245330} = (17, 56, 58, 1)$ lies on line ℓ_5
 572 : $P_{245369} = (56, 56, 58, 1)$ lies on line ℓ_3
 573 : $P_{245419} = (42, 57, 58, 1)$ lies on line ℓ_6
 574 : $P_{245434} = (57, 57, 58, 1)$ lies on line ℓ_4
 575 : $P_{245441} = (0, 58, 58, 1)$ lies on line ℓ_7
 576 : $P_{245825} = (0, 0, 59, 1)$ lies on line ℓ_1
 577 : $P_{245826} = (1, 0, 59, 1)$ lies on line ℓ_2
 578 : $P_{246916} = (3, 17, 59, 1)$ lies on line ℓ_8
 579 : $P_{248515} = (2, 42, 59, 1)$ lies on line ℓ_9
 580 : $P_{249450} = (41, 56, 59, 1)$ lies on line ℓ_5
 581 : $P_{249465} = (56, 56, 59, 1)$ lies on line ℓ_3
 582 : $P_{249492} = (19, 57, 59, 1)$ lies on line ℓ_6
 583 : $P_{249530} = (57, 57, 59, 1)$ lies on line ℓ_4
 584 : $P_{249601} = (0, 59, 59, 1)$ lies on line ℓ_7
 585 : $P_{249921} = (0, 0, 60, 1)$ lies on line ℓ_1
 586 : $P_{249922} = (1, 0, 60, 1)$ lies on line ℓ_2
 587 : $P_{251589} = (4, 26, 60, 1)$ lies on line ℓ_8
 588 : $P_{252358} = (5, 38, 60, 1)$ lies on line ℓ_9
 589 : $P_{253539} = (34, 56, 60, 1)$ lies on line ℓ_5
 590 : $P_{253561} = (56, 56, 60, 1)$ lies on line ℓ_3
 591 : $P_{253600} = (31, 57, 60, 1)$ lies on line ℓ_6
 592 : $P_{253626} = (57, 57, 60, 1)$ lies on line ℓ_4
 593 : $P_{253761} = (0, 60, 60, 1)$ lies on line ℓ_7
 594 : $P_{254017} = (0, 0, 61, 1)$ lies on line ℓ_1
 595 : $P_{254018} = (1, 0, 61, 1)$ lies on line ℓ_2
 596 : $P_{256005} = (4, 31, 61, 1)$ lies on line ℓ_9
 597 : $P_{256198} = (5, 34, 61, 1)$ lies on line ℓ_8
 598 : $P_{257627} = (26, 56, 61, 1)$ lies on line ℓ_5
 599 : $P_{257657} = (56, 56, 61, 1)$ lies on line ℓ_3
 600 : $P_{257703} = (38, 57, 61, 1)$ lies on line ℓ_6
 601 : $P_{257722} = (57, 57, 61, 1)$ lies on line ℓ_4
 602 : $P_{257921} = (0, 61, 61, 1)$ lies on line ℓ_7
 603 : $P_{258113} = (0, 0, 62, 1)$ lies on line ℓ_1
 604 : $P_{258114} = (1, 0, 62, 1)$ lies on line ℓ_2
 605 : $P_{258823} = (6, 11, 62, 1)$ lies on line ℓ_8
 606 : $P_{261512} = (7, 53, 62, 1)$ lies on line ℓ_9
 607 : $P_{261748} = (51, 56, 62, 1)$ lies on line ℓ_5
 608 : $P_{261753} = (56, 56, 62, 1)$ lies on line ℓ_3
 609 : $P_{261773} = (12, 57, 62, 1)$ lies on line ℓ_6
 610 : $P_{261818} = (57, 57, 62, 1)$ lies on line ℓ_4
 611 : $P_{262081} = (0, 62, 62, 1)$ lies on line ℓ_7
 612 : $P_{262209} = (0, 0, 63, 1)$ lies on line ℓ_1
 613 : $P_{262210} = (1, 0, 63, 1)$ lies on line ℓ_2
 614 : $P_{262983} = (6, 12, 63, 1)$ lies on line ℓ_9
 615 : $P_{265480} = (7, 51, 63, 1)$ lies on line ℓ_8
 616 : $P_{265804} = (11, 56, 63, 1)$ lies on line ℓ_5
 617 : $P_{265849} = (56, 56, 63, 1)$ lies on line ℓ_3
 618 : $P_{265910} = (53, 57, 63, 1)$ lies on line ℓ_6
 619 : $P_{265914} = (57, 57, 63, 1)$ lies on line ℓ_4
 620 : $P_{266241} = (0, 63, 63, 1)$ lies on line ℓ_7

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

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6
in point	P_2	P_2	P_2	P_2	P_{123}	P_{124}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_7
in point	P_2	P_2	P_2	P_2	P_3

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_8	ℓ_9
in point	P_2	P_2	P_2	P_2	P_{237634}	P_{233538}

Line 3 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_9
in point	P_2	P_2	P_2	P_2	P_{241273}	P_{11897}

Line 4 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_8
in point	P_2	P_2	P_2	P_2	P_{237242}	P_{11962}

Line 5 intersects

Line	ℓ_0	ℓ_3	ℓ_7	ℓ_8
in point	P_{123}	P_{241273}	P_{237121}	P_{237121}

Line 6 intersects

Line	ℓ_0	ℓ_4	ℓ_7	ℓ_9
in point	P_{124}	P_{237242}	P_{241281}	P_{241281}

Line 7 intersects

Line	ℓ_1	ℓ_5	ℓ_6	ℓ_8	ℓ_9
in point	P_3	P_{237121}	P_{241281}	P_{237121}	P_{241281}

Line 8 intersects

Line	ℓ_2	ℓ_4	ℓ_5	ℓ_7
in point	P_{237634}	P_{11962}	P_{237121}	P_{237121}

Line 9 intersects

Line	ℓ_2	ℓ_3	ℓ_6	ℓ_7
in point	P_{233538}	P_{11897}	P_{241281}	P_{241281}

The surface has 4353 points:

Too many to print.