Rank-76307 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^2X_1 + X_1^2X_3 + X_1X_2^2 + X_0X_3^2 + X_0X_1X_2 = 0$$

(0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 286396693

General information

Number of lines	16
Number of points	337
Number of singular points	2
Number of Eckardt points	3
Number of double points	29
Number of single points	195
Number of points off lines	108
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^{16}
Type of lines on points	5^2, 3^3, 2^{29}, 1^{195}, 0^{108}

Singular Points

The surface has 2 singular points:

$0:\ P_{29} = \mathbf{P}(\delta^{10}, 0, 1, 0) = \mathbf{P}(10, 0, 1, 0)$
$1:\ P_{30} = \mathbf{P}(\delta^{5}, 0, 1, 0) = \mathbf{P}(11, 0, 1, 0)$

The 16 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{256} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{256} = \mathbf{Pl}(0, 0, 1, 0, 0, 0)_2$$

$$\ell_1 = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 0 \\ 0 & 1 & 0 & 0 \end{array}\right]_{2730} = \left[\begin{array}{cccc} 1 & 0 & 10 & 0 \\ 0 & 1 & 0 & 0 \end{array}\right]_{2730} = \mathbf{Pl}(11,0,0,0,0,1)_{4636}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 0 & \delta^{5} & 0 \\ 0 & 1 & 0 & 0 \end{array}\right]_{3003} = \left[\begin{array}{cccc} 1 & 0 & 11 & 0 \\ 0 & 1 & 0 & 0 \end{array}\right]_{3003} = \mathbf{Pl}(10,0,0,0,0,1)_{4635}$$

$$\ell_3 = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{70160} = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{70160} = \mathbf{Pl}(0,1,0,0,0,0)_{1}$$

$$\ell_4 = \left[\begin{array}{cccc} 1 & 0 & \delta^{5} & 0 \\ 0 & 1 & 1 & 1 \end{array}\right]_{3020} = \left[\begin{array}{cccc} 1 & 0 & 11 & 0 \\ 0 & 1 & 1 & 1 \end{array}\right]_{3020} = \mathbf{Pl}(1,1,1,0,10,1)_{45696}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & 0 & \delta^{5} & 0 \\ 0 & 1 & \delta^{10} & \delta^{5} \end{array}\right]_{3189} = \left[\begin{array}{cccc} 1 & 0 & 11 & 0 \\ 0 & 1 & 10 & 11 \end{array}\right]_{3189} = \mathbf{Pl}(10,11,11,0,1,1)_{9135}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & 0 & \delta^{5} & 0 \\ 0 & 1 & \delta^{5} & \delta^{10} \end{array}\right]_{3174} = \left[\begin{array}{cccc} 1 & 0 & 11 & 0 \\ 0 & 1 & 11 & 10 \end{array}\right]_{3174} = \mathbf{Pl}(11,10,10,0,11,1)_{49921}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 0 \\ 0 & 1 & 1 & 1 \end{array}\right]_{2747} = \left[\begin{array}{cccc} 1 & 0 & 10 & 0 \\ 0 & 1 & 1 & 1 \end{array}\right]_{2747} = \mathbf{Pl}(1,1,1,0,11,1)_{49776}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 0 \\ 0 & 1 & \delta^{10} & \delta^{5} \end{array}\right]_{2916} = \left[\begin{array}{cccc} 1 & 0 & 10 & 0 \\ 0 & 1 & 10 & 11 \end{array}\right]_{2916} = \mathbf{Pl}(10,11,11,0,10,1)_{45855}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 0 \\ 0 & 1 & \delta^{5} & \delta^{10} \end{array}\right]_{2901} = \left[\begin{array}{cccc} 1 & 0 & 10 & 0 \\ 0 & 1 & 11 & 10 \end{array}\right]_{2901} = \mathbf{Pl}(11,10,10,0,1,1)_{9121}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & \delta^{5} & 0 & 1 \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{7637} = \left[\begin{array}{cccc} 1 & 11 & 0 & 1 \\ 0 & 0 & 1 & 10 \end{array}\right]_{7637} = \mathbf{Pl}(0,10,11,10,11,1)_{50561}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & \delta^{10} & 0 & 1 \\ 0 & 0 & 1 & \delta^{5} \end{array}\right]_{7365} = \left[\begin{array}{cccc} 1 & 10 & 0 & 1 \\ 0 & 0 & 1 & 11 \end{array}\right]_{7365} = \mathbf{Pl}(0,11,10,11,10,1)_{46451}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & 1 & 0 & \delta^{5} \\ 0 & 0 & 1 & 1 \end{array}\right]_{48578} = \left[\begin{array}{cccc} 1 & 1 & 0 & 11 \\ 0 & 0 & 1 & 1 \end{array}\right]_{48578} = \mathbf{Pl}(0,11,1,1,1,1)_{9452}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \delta^{5} & 0 & \delta^{5} \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{51317} = \left[\begin{array}{cccc} 1 & 11 & 0 & 11 \\ 0 & 0 & 1 & 10 \end{array}\right]_{51317} = \mathbf{Pl}(0,1,11,10,11,1)_{50552}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & \delta^{10} & 0 & \delta^{10} \\ 0 & 0 & 1 & \delta^{5} \end{array}\right]_{46677} = \left[\begin{array}{cccc} 1 & 10 & 0 & 10 \\ 0 & 0 & 1 & 11 \end{array}\right]_{46677} = \mathbf{Pl}(0,1,10,11,10,1)_{46441}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & 1 & 0 & \delta^{10} \\ 0 & 0 & 1 & 1 \end{array}\right]_{44210} = \left[\begin{array}{cccc} 1 & 1 & 0 & 10 \\ 0 & 0 & 1 & 1 \end{array}\right]_{44210} = \mathbf{Pl}(0,10,1,1,1,1)_{9451}$$

Rank of lines: (256, 2730, 3003, 70160, 3020, 3189, 3174, 2747, 2916, 2901, 7637, 7365, 48578, 51317, 46677, 44210)
Rank of points on Klein quadric: (2, 4636, 4635, 1, 45696, 9135, 49921, 49776, 45855, 9121, 50561, 46451, 9452, 50552, 46441, 9451)

Eckardt Points

The surface has 3 Eckardt points:
$0 : P_{530} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1)$,
$1 : P_{2833} = \mathbf{P}(0,0,\delta^{10},1) = \mathbf{P}(0,0,10,1)$,
$2 : P_{3089} = \mathbf{P}(0,0,\delta^{5},1) = \mathbf{P}(0,0,11,1)$.

Double Points

The surface has 29 Double points:
The double points on the surface are:

$P_2 = (0,0,1,0) = \ell_0 \cap \ell_3$
$P_1 = (0,1,0,0) = \ell_1 \cap \ell_2$
$P_{46} = (11,1,1,0) = \ell_1 \cap \ell_{11}$
$P_{190} = (11,10,1,0) = \ell_1 \cap \ell_{13}$
$P_{206} = (11,11,1,0) = \ell_1 \cap \ell_{15}$
$P_{45} = (10,1,1,0) = \ell_2 \cap \ell_{10}$
$P_{189} = (10,10,1,0) = \ell_2 \cap \ell_{12}$
$P_{205} = (10,11,1,0) = \ell_2 \cap \ell_{14}$
$P_{546} = (0,1,1,1) = \ell_4 \cap \ell_7$
$P_{3116} = (11,1,11,1) = \ell_4 \cap \ell_{11}$
$P_{2850} = (1,1,10,1) = \ell_4 \cap \ell_{12}$
$P_{300} = (10,1,0,1) = \ell_4 \cap \ell_{13}$
$P_{3249} = (0,10,11,1) = \ell_5 \cap \ell_8$
$P_{700} = (11,10,1,1) = \ell_5 \cap \ell_{10}$
$P_{435} = (1,10,0,1) = \ell_5 \cap \ell_{11}$
$P_{3003} = (10,10,10,1) = \ell_5 \cap \ell_{15}$
$P_{3009} = (0,11,10,1) = \ell_6 \cap \ell_9$
$P_{706} = (1,11,1,1) = \ell_6 \cap \ell_{13}$
$P_{3275} = (10,11,11,1) = \ell_6 \cap \ell_{14}$
$P_{461} = (11,11,0,1) = \ell_6 \cap \ell_{15}$
$P_{2859} = (10,1,10,1) = \ell_7 \cap \ell_{10}$
$P_{301} = (11,1,0,1) = \ell_7 \cap \ell_{14}$
$P_{3106} = (1,1,11,1) = \ell_7 \cap \ell_{15}$
$P_{444} = (10,10,0,1) = \ell_8 \cap \ell_{12}$
$P_{3004} = (11,10,10,1) = \ell_8 \cap \ell_{13}$
$P_{690} = (1,10,1,1) = \ell_8 \cap \ell_{14}$
$P_{451} = (1,11,0,1) = \ell_9 \cap \ell_{10}$
$P_{715} = (10,11,1,1) = \ell_9 \cap \ell_{11}$
$P_{3276} = (11,11,11,1) = \ell_9 \cap \ell_{12}$

Single Points

The surface has 195 single points:
The single points on the surface are:

0 : $P_0 = (1,0,0,0)$ lies on line ℓ_0
1 : $P_3 = (0,0,0,1)$ lies on line ℓ_3
2 : $P_{20} = (1,0,1,0)$ lies on line ℓ_0
3 : $P_{21} = (2,0,1,0)$ lies on line ℓ_0
4 : $P_{22} = (3,0,1,0)$ lies on line ℓ_0
5 : $P_{23} = (4,0,1,0)$ lies on line ℓ_0
6 : $P_{24} = (5,0,1,0)$ lies on line ℓ_0
7 : $P_{25} = (6,0,1,0)$ lies on line ℓ_0
8 : $P_{26} = (7,0,1,0)$ lies on line ℓ_0
9 : $P_{27} = (8,0,1,0)$ lies on line ℓ_0
10 : $P_{28} = (9,0,1,0)$ lies on line ℓ_0
11 : $P_{31} = (12,0,1,0)$ lies on line ℓ_0
12 : $P_{32} = (13,0,1,0)$ lies on line ℓ_0
13 : $P_{33} = (14,0,1,0)$ lies on line ℓ_0
14 : $P_{34} = (15,0,1,0)$ lies on line ℓ_0
15 : $P_{61} = (10,2,1,0)$ lies on line ℓ_2
16 : $P_{62} = (11,2,1,0)$ lies on line ℓ_1
17 : $P_{77} = (10,3,1,0)$ lies on line ℓ_2
18 : $P_{78} = (11,3,1,0)$ lies on line ℓ_1
19 : $P_{93} = (10,4,1,0)$ lies on line ℓ_2
20 : $P_{94} = (11,4,1,0)$ lies on line ℓ_1
21 : $P_{109} = (10,5,1,0)$ lies on line ℓ_2
22 : $P_{110} = (11,5,1,0)$ lies on line ℓ_1
23 : $P_{125} = (10,6,1,0)$ lies on line ℓ_2
24 : $P_{126} = (11,6,1,0)$ lies on line ℓ_1
25 : $P_{141} = (10,7,1,0)$ lies on line ℓ_2
26 : $P_{142} = (11,7,1,0)$ lies on line ℓ_1
27 : $P_{157} = (10,8,1,0)$ lies on line ℓ_2
28 : $P_{158} = (11,8,1,0)$ lies on line ℓ_1
29 : $P_{173} = (10,9,1,0)$ lies on line ℓ_2
30 : $P_{174} = (11,9,1,0)$ lies on line ℓ_1
31 : $P_{221} = (10,12,1,0)$ lies on line ℓ_2
32 : $P_{222} = (11,12,1,0)$ lies on line ℓ_1
33 : $P_{237} = (10,13,1,0)$ lies on line ℓ_2
34 : $P_{238} = (11,13,1,0)$ lies on line ℓ_1
35 : $P_{253} = (10,14,1,0)$ lies on line ℓ_2
36 : $P_{254} = (11,14,1,0)$ lies on line ℓ_1
37 : $P_{269} = (10,15,1,0)$ lies on line ℓ_2
38 : $P_{270} = (11,15,1,0)$ lies on line ℓ_1
39 : $P_{785} = (0,0,2,1)$ lies on line ℓ_3
40 : $P_{805} = (4,1,2,1)$ lies on line ℓ_7
41 : $P_{808} = (7,1,2,1)$ lies on line ℓ_4
42 : $P_{853} = (4,4,2,1)$ lies on line ℓ_{15}
43 : $P_{904} = (7,7,2,1)$ lies on line ℓ_{12}
44 : $P_{927} = (14,8,2,1)$ lies on line ℓ_{11}
45 : $P_{941} = (12,9,2,1)$ lies on line ℓ_{10}
46 : $P_{950} = (5,10,2,1)$ lies on line ℓ_8
47 : $P_{957} = (12,10,2,1)$ lies on line ℓ_5
48 : $P_{967} = (6,11,2,1)$ lies on line ℓ_6
49 : $P_{975} = (14,11,2,1)$ lies on line ℓ_9
50 : $P_{982} = (5,12,2,1)$ lies on line ℓ_{13}
51 : $P_{1015} = (6,14,2,1)$ lies on line ℓ_{14}
52 : $P_{1041} = (0,0,3,1)$ lies on line ℓ_3
53 : $P_{1070} = (13,1,3,1)$ lies on line ℓ_4
54 : $P_{1072} = (15,1,3,1)$ lies on line ℓ_7
55 : $P_{1133} = (12,5,3,1)$ lies on line ℓ_{14}
56 : $P_{1151} = (14,6,3,1)$ lies on line ℓ_{13}
57 : $P_{1175} = (6,8,3,1)$ lies on line ℓ_{10}
58 : $P_{1190} = (5,9,3,1)$ lies on line ℓ_{11}
59 : $P_{1207} = (6,10,3,1)$ lies on line ℓ_5
60 : $P_{1215} = (14,10,3,1)$ lies on line ℓ_8
61 : $P_{1222} = (5,11,3,1)$ lies on line ℓ_9
62 : $P_{1229} = (12,11,3,1)$ lies on line ℓ_6
63 : $P_{1262} = (13,13,3,1)$ lies on line ℓ_{12}

64 : $P_{1296} = (15, 15, 3, 1)$ lies on line ℓ_{15}
65 : $P_{1297} = (0, 0, 4, 1)$ lies on line ℓ_3
66 : $P_{1322} = (9, 1, 4, 1)$ lies on line ℓ_4
67 : $P_{1325} = (12, 1, 4, 1)$ lies on line ℓ_7
68 : $P_{1342} = (13, 2, 4, 1)$ lies on line ℓ_{13}
69 : $P_{1401} = (8, 6, 4, 1)$ lies on line ℓ_{14}
70 : $P_{1450} = (9, 9, 4, 1)$ lies on line ℓ_{12}
71 : $P_{1459} = (2, 10, 4, 1)$ lies on line ℓ_5
72 : $P_{1470} = (13, 10, 4, 1)$ lies on line ℓ_8
73 : $P_{1479} = (6, 11, 4, 1)$ lies on line ℓ_9
74 : $P_{1481} = (8, 11, 4, 1)$ lies on line ℓ_6
75 : $P_{1501} = (12, 12, 4, 1)$ lies on line ℓ_{15}
76 : $P_{1527} = (6, 14, 4, 1)$ lies on line ℓ_{11}
77 : $P_{1539} = (2, 15, 4, 1)$ lies on line ℓ_{10}
78 : $P_{1553} = (0, 0, 5, 1)$ lies on line ℓ_3
79 : $P_{1572} = (3, 1, 5, 1)$ lies on line ℓ_4
80 : $P_{1576} = (7, 1, 5, 1)$ lies on line ℓ_7
81 : $P_{1604} = (3, 3, 5, 1)$ lies on line ℓ_{12}
82 : $P_{1672} = (7, 7, 5, 1)$ lies on line ℓ_{15}
83 : $P_{1687} = (6, 8, 5, 1)$ lies on line ℓ_{13}
84 : $P_{1719} = (6, 10, 5, 1)$ lies on line ℓ_8
85 : $P_{1721} = (8, 10, 5, 1)$ lies on line ℓ_5
86 : $P_{1731} = (2, 11, 5, 1)$ lies on line ℓ_6
87 : $P_{1742} = (13, 11, 5, 1)$ lies on line ℓ_9
88 : $P_{1763} = (2, 13, 5, 1)$ lies on line ℓ_{14}
89 : $P_{1785} = (8, 14, 5, 1)$ lies on line ℓ_{10}
90 : $P_{1806} = (13, 15, 5, 1)$ lies on line ℓ_{11}
91 : $P_{1809} = (0, 0, 6, 1)$ lies on line ℓ_3
92 : $P_{1828} = (3, 1, 6, 1)$ lies on line ℓ_7
93 : $P_{1829} = (4, 1, 6, 1)$ lies on line ℓ_4
94 : $P_{1860} = (3, 3, 6, 1)$ lies on line ℓ_{15}
95 : $P_{1877} = (4, 4, 6, 1)$ lies on line ℓ_{12}
96 : $P_{1958} = (5, 9, 6, 1)$ lies on line ℓ_{14}
97 : $P_{1971} = (2, 10, 6, 1)$ lies on line ℓ_8
98 : $P_{1984} = (15, 10, 6, 1)$ lies on line ℓ_5
99 : $P_{1990} = (5, 11, 6, 1)$ lies on line ℓ_6
100 : $P_{1994} = (9, 11, 6, 1)$ lies on line ℓ_9
101 : $P_{2010} = (9, 12, 6, 1)$ lies on line ℓ_{11}
102 : $P_{2032} = (15, 13, 6, 1)$ lies on line ℓ_{10}
103 : $P_{2051} = (2, 15, 6, 1)$ lies on line ℓ_{13}
104 : $P_{2065} = (0, 0, 7, 1)$ lies on line ℓ_3
105 : $P_{2089} = (8, 1, 7, 1)$ lies on line ℓ_7
106 : $P_{2095} = (14, 1, 7, 1)$ lies on line ℓ_4
107 : $P_{2112} = (15, 2, 7, 1)$ lies on line ℓ_{14}
108 : $P_{2154} = (9, 5, 7, 1)$ lies on line ℓ_{13}
109 : $P_{2201} = (8, 8, 7, 1)$ lies on line ℓ_{15}
110 : $P_{2230} = (5, 10, 7, 1)$ lies on line ℓ_5
111 : $P_{2234} = (9, 10, 7, 1)$ lies on line ℓ_8
112 : $P_{2243} = (2, 11, 7, 1)$ lies on line ℓ_9
113 : $P_{2256} = (15, 11, 7, 1)$ lies on line ℓ_6
114 : $P_{2262} = (5, 12, 7, 1)$ lies on line ℓ_{10}
115 : $P_{2275} = (2, 13, 7, 1)$ lies on line ℓ_{11}
116 : $P_{2303} = (14, 14, 7, 1)$ lies on line ℓ_{12}
117 : $P_{2321} = (0, 0, 8, 1)$ lies on line ℓ_3
118 : $P_{2342} = (5, 1, 8, 1)$ lies on line ℓ_7
119 : $P_{2349} = (12, 1, 8, 1)$ lies on line ℓ_4
120 : $P_{2368} = (15, 2, 8, 1)$ lies on line ℓ_{11}
121 : $P_{2376} = (7, 3, 8, 1)$ lies on line ℓ_{10}
122 : $P_{2406} = (5, 5, 8, 1)$ lies on line ℓ_{15}
123 : $P_{2437} = (4, 7, 8, 1)$ lies on line ℓ_{13}
124 : $P_{2485} = (4, 10, 8, 1)$ lies on line ℓ_8
125 : $P_{2488} = (7, 10, 8, 1)$ lies on line ℓ_5
126 : $P_{2510} = (13, 11, 8, 1)$ lies on line ℓ_6
127 : $P_{2512} = (15, 11, 8, 1)$ lies on line ℓ_9
128 : $P_{2525} = (12, 12, 8, 1)$ lies on line ℓ_{12}
129 : $P_{2574} = (13, 15, 8, 1)$ lies on line ℓ_{14}
130 : $P_{2577} = (0, 0, 9, 1)$ lies on line ℓ_3
131 : $P_{2599} = (6, 1, 9, 1)$ lies on line ℓ_4
132 : $P_{2607} = (14, 1, 9, 1)$ lies on line ℓ_7
133 : $P_{2622} = (13, 2, 9, 1)$ lies on line ℓ_{10}
134 : $P_{2629} = (4, 3, 9, 1)$ lies on line ℓ_{11}
135 : $P_{2648} = (7, 4, 9, 1)$ lies on line ℓ_{14}
136 : $P_{2679} = (6, 6, 9, 1)$ lies on line ℓ_{12}
137 : $P_{2750} = (13, 10, 9, 1)$ lies on line ℓ_5
138 : $P_{2752} = (15, 10, 9, 1)$ lies on line ℓ_8
139 : $P_{2757} = (4, 11, 9, 1)$ lies on line ℓ_9
140 : $P_{2760} = (7, 11, 9, 1)$ lies on line ℓ_6
141 : $P_{2800} = (15, 13, 9, 1)$ lies on line ℓ_{13}
142 : $P_{2815} = (14, 14, 9, 1)$ lies on line ℓ_{15}
143 : $P_{3345} = (0, 0, 12, 1)$ lies on line ℓ_3
144 : $P_{3363} = (2, 1, 12, 1)$ lies on line ℓ_7
145 : $P_{3376} = (15, 1, 12, 1)$ lies on line ℓ_4
146 : $P_{3379} = (2, 2, 12, 1)$ lies on line ℓ_{15}
147 : $P_{3412} = (3, 4, 12, 1)$ lies on line ℓ_{13}
148 : $P_{3449} = (8, 6, 12, 1)$ lies on line ℓ_{11}
149 : $P_{3461} = (4, 7, 12, 1)$ lies on line ℓ_{10}
150 : $P_{3487} = (14, 8, 12, 1)$ lies on line ℓ_{14}
151 : $P_{3508} = (3, 10, 12, 1)$ lies on line ℓ_8
152 : $P_{3509} = (4, 10, 12, 1)$ lies on line ℓ_5
153 : $P_{3529} = (8, 11, 12, 1)$ lies on line ℓ_9
154 : $P_{3535} = (14, 11, 12, 1)$ lies on line ℓ_6
155 : $P_{3600} = (15, 15, 12, 1)$ lies on line ℓ_{12}
156 : $P_{3601} = (0, 0, 13, 1)$ lies on line ℓ_3
157 : $P_{3622} = (5, 1, 13, 1)$ lies on line ℓ_4
158 : $P_{3626} = (9, 1, 13, 1)$ lies on line ℓ_7
159 : $P_{3653} = (4, 3, 13, 1)$ lies on line ℓ_{14}
160 : $P_{3686} = (5, 5, 13, 1)$ lies on line ℓ_{12}
161 : $P_{3711} = (14, 6, 13, 1)$ lies on line ℓ_{10}
162 : $P_{3716} = (3, 7, 13, 1)$ lies on line ℓ_{11}
163 : $P_{3754} = (9, 9, 13, 1)$ lies on line ℓ_{15}
164 : $P_{3769} = (8, 10, 13, 1)$ lies on line ℓ_8
165 : $P_{3775} = (14, 10, 13, 1)$ lies on line ℓ_5
166 : $P_{3780} = (3, 11, 13, 1)$ lies on line ℓ_9
167 : $P_{3781} = (4, 11, 13, 1)$ lies on line ℓ_6
168 : $P_{3833} = (8, 14, 13, 1)$ lies on line ℓ_{13}
169 : $P_{3857} = (0, 0, 14, 1)$ lies on line ℓ_3
170 : $P_{3875} = (2, 1, 14, 1)$ lies on line ℓ_4
171 : $P_{3886} = (13, 1, 14, 1)$ lies on line ℓ_7

172 : $P_{3891} = (2, 2, 14, 1)$ lies on line ℓ_{12}
173 : $P_{3928} = (7, 4, 14, 1)$ lies on line ℓ_{11}
174 : $P_{3946} = (9, 5, 14, 1)$ lies on line ℓ_{10}
175 : $P_{3972} = (3, 7, 14, 1)$ lies on line ℓ_{14}
176 : $P_{4013} = (12, 9, 14, 1)$ lies on line ℓ_{13}
177 : $P_{4026} = (9, 10, 14, 1)$ lies on line ℓ_{5}
178 : $P_{4029} = (12, 10, 14, 1)$ lies on line ℓ_{8}
179 : $P_{4036} = (3, 11, 14, 1)$ lies on line ℓ_{6}
180 : $P_{4040} = (7, 11, 14, 1)$ lies on line ℓ_{9}
181 : $P_{4078} = (13, 13, 14, 1)$ lies on line ℓ_{15}
182 : $P_{4113} = (0, 0, 15, 1)$ lies on line ℓ_{3}
183 : $P_{4135} = (6, 1, 15, 1)$ lies on line ℓ_{7}
184 : $P_{4137} = (8, 1, 15, 1)$ lies on line ℓ_{4}
185 : $P_{4168} = (7, 3, 15, 1)$ lies on line ℓ_{13}
186 : $P_{4180} = (3, 4, 15, 1)$ lies on line ℓ_{10}
187 : $P_{4205} = (12, 5, 15, 1)$ lies on line ℓ_{11}
188 : $P_{4215} = (6, 6, 15, 1)$ lies on line ℓ_{15}
189 : $P_{4249} = (8, 8, 15, 1)$ lies on line ℓ_{12}
190 : $P_{4276} = (3, 10, 15, 1)$ lies on line ℓ_{5}
191 : $P_{4280} = (7, 10, 15, 1)$ lies on line ℓ_{8}
192 : $P_{4298} = (9, 11, 15, 1)$ lies on line ℓ_{6}
193 : $P_{4301} = (12, 11, 15, 1)$ lies on line ℓ_{9}
194 : $P_{4314} = (9, 12, 15, 1)$ lies on line ℓ_{14}

The single points on the surface are:

Points on surface but on no line

The surface has 108 points not on any line:
The points on the surface but not on lines are:

0 : $P_{566} = (5, 2, 1, 1)$
1 : $P_{569} = (8, 2, 1, 1)$
2 : $P_{601} = (8, 4, 1, 1)$
3 : $P_{608} = (15, 4, 1, 1)$
4 : $P_{676} = (3, 9, 1, 1)$
5 : $P_{688} = (15, 9, 1, 1)$
6 : $P_{756} = (3, 14, 1, 1)$
7 : $P_{758} = (5, 14, 1, 1)$
8 : $P_{849} = (0, 4, 2, 1)$
9 : $P_{892} = (11, 6, 2, 1)$
10 : $P_{894} = (13, 6, 2, 1)$
11 : $P_{908} = (11, 7, 2, 1)$
12 : $P_{928} = (15, 8, 2, 1)$
13 : $P_{932} = (3, 9, 2, 1)$
14 : $P_{1012} = (3, 14, 2, 1)$
15 : $P_{1077} = (4, 2, 3, 1)$
16 : $P_{1084} = (11, 2, 3, 1)$
17 : $P_{1121} = (0, 5, 3, 1)$
18 : $P_{1146} = (9, 6, 3, 1)$
19 : $P_{1196} = (11, 9, 3, 1)$
20 : $P_{1256} = (7, 13, 3, 1)$
21 : $P_{1290} = (9, 15, 3, 1)$
22 : $P_{1334} = (5, 2, 4, 1)$
23 : $P_{1441} = (0, 9, 4, 1)$
24 : $P_{1499} = (10, 12, 4, 1)$
25 : $P_{1512} = (7, 13, 4, 1)$
26 : $P_{1515} = (10, 13, 4, 1)$
27 : $P_{1526} = (5, 14, 4, 1)$
28 : $P_{1540} = (3, 15, 4, 1)$
29 : $P_{1615} = (14, 3, 5, 1)$
30 : $P_{1626} = (9, 4, 5, 1)$
31 : $P_{1627} = (10, 4, 5, 1)$
32 : $P_{1677} = (12, 7, 5, 1)$
33 : $P_{1681} = (0, 8, 5, 1)$
34 : $P_{1775} = (14, 13, 5, 1)$
35 : $P_{1787} = (10, 14, 5, 1)$
36 : $P_{1870} = (13, 3, 6, 1)$
37 : $P_{1890} = (1, 5, 6, 1)$
38 : $P_{1897} = (8, 5, 6, 1)$
39 : $P_{1967} = (14, 9, 6, 1)$
40 : $P_{2014} = (13, 12, 6, 1)$
41 : $P_{2017} = (0, 13, 6, 1)$
42 : $P_{2050} = (1, 15, 6, 1)$
43 : $P_{2101} = (4, 2, 7, 1)$
44 : $P_{2146} = (1, 5, 7, 1)$
45 : $P_{2205} = (12, 8, 7, 1)$
46 : $P_{2257} = (0, 12, 7, 1)$
47 : $P_{2285} = (12, 13, 7, 1)$
48 : $P_{2306} = (1, 15, 7, 1)$
49 : $P_{2308} = (3, 15, 7, 1)$
50 : $P_{2364} = (11, 2, 8, 1)$
51 : $P_{2403} = (2, 5, 8, 1)$
52 : $P_{2435} = (2, 7, 8, 1)$
53 : $P_{2476} = (11, 9, 8, 1)$
54 : $P_{2479} = (14, 9, 8, 1)$
55 : $P_{2519} = (6, 12, 8, 1)$
56 : $P_{2561} = (0, 15, 8, 1)$
57 : $P_{2617} = (8, 2, 9, 1)$
58 : $P_{2630} = (5, 3, 9, 1)$
59 : $P_{2649} = (8, 4, 9, 1)$
60 : $P_{2684} = (11, 6, 9, 1)$
61 : $P_{2700} = (11, 7, 9, 1)$
62 : $P_{2701} = (12, 7, 9, 1)$
63 : $P_{2801} = (0, 14, 9, 1)$

64 : $P_{2915} = (2, 5, 10, 1)$
65 : $P_{2920} = (7, 5, 10, 1)$
66 : $P_{2936} = (7, 6, 10, 1)$
67 : $P_{2938} = (9, 6, 10, 1)$
68 : $P_{2947} = (2, 7, 10, 1)$
69 : $P_{2951} = (6, 7, 10, 1)$
70 : $P_{3079} = (6, 15, 10, 1)$
71 : $P_{3082} = (9, 15, 10, 1)$
72 : $P_{3150} = (13, 3, 11, 1)$
73 : $P_{3151} = (14, 3, 11, 1)$
74 : $P_{3221} = (4, 8, 11, 1)$
75 : $P_{3229} = (12, 8, 11, 1)$
76 : $P_{3285} = (4, 12, 11, 1)$
77 : $P_{3294} = (13, 12, 11, 1)$
78 : $P_{3309} = (12, 13, 11, 1)$
79 : $P_{3311} = (14, 13, 11, 1)$
80 : $P_{3394} = (1, 3, 12, 1)$
81 : $P_{3398} = (5, 3, 12, 1)$
82 : $P_{3418} = (9, 4, 12, 1)$
83 : $P_{3441} = (0, 6, 12, 1)$
84 : $P_{3463} = (6, 7, 12, 1)$
85 : $P_{3474} = (1, 8, 12, 1)$
86 : $P_{3591} = (6, 15, 12, 1)$
87 : $P_{3650} = (1, 3, 13, 1)$
88 : $P_{3688} = (7, 5, 13, 1)$
89 : $P_{3704} = (7, 6, 13, 1)$
90 : $P_{3713} = (0, 7, 13, 1)$
91 : $P_{3730} = (1, 8, 13, 1)$
92 : $P_{3744} = (15, 8, 13, 1)$
93 : $P_{3827} = (2, 14, 13, 1)$
94 : $P_{3889} = (0, 2, 14, 1)$
95 : $P_{3936} = (15, 4, 14, 1)$
96 : $P_{3945} = (8, 5, 14, 1)$
97 : $P_{4016} = (15, 9, 14, 1)$
98 : $P_{4055} = (6, 12, 14, 1)$
99 : $P_{4059} = (10, 12, 14, 1)$
100 : $P_{4075} = (10, 13, 14, 1)$
101 : $P_{4161} = (0, 3, 15, 1)$
102 : $P_{4187} = (10, 4, 15, 1)$
103 : $P_{4222} = (13, 6, 15, 1)$
104 : $P_{4245} = (4, 8, 15, 1)$
105 : $P_{4309} = (4, 12, 15, 1)$
106 : $P_{4339} = (2, 14, 15, 1)$
107 : $P_{4347} = (10, 14, 15, 1)$

Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
1	1	0	1	0	0	0	0	1	1	1	0	1	0	1	0	1
2	1	1	0	0	1	1	1	0	0	0	1	0	1	0	1	0
3	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
4	1	0	1	0	0	1	1	1	0	0	0	1	1	1	0	0
5	1	0	1	0	1	0	1	0	1	0	1	1	0	0	0	1
6	1	0	1	0	1	1	0	0	0	1	0	0	0	1	1	1
7	1	1	0	0	1	0	0	0	1	1	1	0	0	0	1	1
8	1	1	0	0	0	1	0	1	0	1	0	0	1	1	1	0
9	1	1	0	0	0	0	1	1	1	0	1	1	1	0	0	0
10	0	0	1	1	0	1	0	1	0	1	0	0	0	1	0	0
11	0	1	0	1	1	1	0	0	0	1	0	0	0	0	1	0
12	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	1
13	0	1	0	1	1	0	1	0	1	0	1	0	0	0	0	0
14	0	0	1	1	0	0	1	1	1	0	0	1	0	0	0	0
15	0	1	0	1	0	1	1	1	0	0	0	0	1	0	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	ℓ_7	ℓ_8	ℓ_9
in point	P_{30}	P_{29}	P_2	P_{29}	P_{29}	P_{29}	P_{30}	P_{30}	P_{30}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_7	ℓ_8	ℓ_9	ℓ_{11}	ℓ_{13}	ℓ_{15}
in point	P_{30}	P_1	P_{30}	P_{30}	P_{30}	P_{46}	P_{190}	P_{206}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_4	ℓ_5	ℓ_6	ℓ_{10}	ℓ_{12}	ℓ_{14}
in point	P_{29}	P_1	P_{29}	P_{29}	P_{29}	P_{45}	P_{189}	P_{205}

Line 3 intersects

Line	ℓ_0	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_2	P_{3089}	P_{2833}	P_{530}	P_{3089}	P_{2833}	P_{530}

Line 4 intersects

Line	ℓ_0	ℓ_2	ℓ_5	ℓ_6	ℓ_7	ℓ_{11}	ℓ_{12}	ℓ_{13}
in point	P_{29}	P_{29}	P_{29}	P_{29}	P_{546}	P_{3116}	P_{2850}	P_{300}

Line 5 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_6	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{15}
in point	P_{29}	P_{29}	P_{29}	P_{29}	P_{3249}	P_{700}	P_{435}	P_{3003}

Line 6 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_5	ℓ_9	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_{29}	P_{29}	P_{29}	P_{29}	P_{3009}	P_{706}	P_{3275}	P_{461}

Line 7 intersects

Line	ℓ_0	ℓ_1	ℓ_4	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}	ℓ_{15}
in point	P_{30}	P_{30}	P_{546}	P_{30}	P_{30}	P_{2859}	P_{301}	P_{3106}

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_5	ℓ_7	ℓ_9	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_{30}	P_{30}	P_{3249}	P_{30}	P_{30}	P_{444}	P_{3004}	P_{690}

Line 9 intersects

Line	ℓ_0	ℓ_1	ℓ_6	ℓ_7	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{12}
in point	P_{30}	P_{30}	P_{3009}	P_{30}	P_{30}	P_{451}	P_{715}	P_{3276}

Line 10 intersects

Line	ℓ_2	ℓ_3	ℓ_5	ℓ_7	ℓ_9	ℓ_{13}
in point	P_{45}	P_{3089}	P_{700}	P_{2859}	P_{451}	P_{3089}

Line 11 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_9	ℓ_{14}
in point	P_{46}	P_{2833}	P_{3116}	P_{435}	P_{715}	P_{2833}

Line 12 intersects

Line	ℓ_2	ℓ_3	ℓ_4	ℓ_8	ℓ_9	ℓ_{15}
in point	P_{189}	P_{530}	P_{2850}	P_{444}	P_{3276}	P_{530}

Line 13 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_6	ℓ_8	ℓ_{10}
in point	P_{190}	P_{3089}	P_{300}	P_{706}	P_{3004}	P_{3089}

Line 14 intersects

Line	ℓ_2	ℓ_3	ℓ_6	ℓ_7	ℓ_8	ℓ_{11}
in point	P_{205}	P_{2833}	P_{3275}	P_{301}	P_{690}	P_{2833}

Line 15 intersects

Line	ℓ_1	ℓ_3	ℓ_5	ℓ_6	ℓ_7	ℓ_{12}
in point	P_{206}	P_{530}	P_{3003}	P_{461}	P_{3106}	P_{530}

The surface has 337 points:
The points on the surface are:

$0: P_0 = (1,0,0,0)$
$1: P_1 = (0,1,0,0)$
$2: P_2 = (0,0,1,0)$
$3: P_3 = (0,0,0,1)$
$4: P_{20} = (1,0,1,0)$
$5: P_{21} = (2,0,1,0)$
$6: P_{22} = (3,0,1,0)$
$7: P_{23} = (4,0,1,0)$
$8: P_{24} = (5,0,1,0)$
$9: P_{25} = (6,0,1,0)$
$10: P_{26} = (7,0,1,0)$
$11: P_{27} = (8,0,1,0)$
$12: P_{28} = (9,0,1,0)$
$13: P_{29} = (10,0,1,0)$
$14: P_{30} = (11,0,1,0)$
$15: P_{31} = (12,0,1,0)$
$16: P_{32} = (13,0,1,0)$
$17: P_{33} = (14,0,1,0)$

18 : $P_{34} = (15, 0, 1, 0)$
19 : $P_{45} = (10, 1, 1, 0)$
20 : $P_{46} = (11, 1, 1, 0)$
21 : $P_{61} = (10, 2, 1, 0)$
22 : $P_{62} = (11, 2, 1, 0)$
23 : $P_{77} = (10, 3, 1, 0)$
24 : $P_{78} = (11, 3, 1, 0)$
25 : $P_{93} = (10, 4, 1, 0)$
26 : $P_{94} = (11, 4, 1, 0)$
27 : $P_{109} = (10, 5, 1, 0)$
28 : $P_{110} = (11, 5, 1, 0)$
29 : $P_{125} = (10, 6, 1, 0)$
30 : $P_{126} = (11, 6, 1, 0)$
31 : $P_{141} = (10, 7, 1, 0)$
32 : $P_{142} = (11, 7, 1, 0)$
33 : $P_{157} = (10, 8, 1, 0)$
34 : $P_{158} = (11, 8, 1, 0)$
35 : $P_{173} = (10, 9, 1, 0)$
36 : $P_{174} = (11, 9, 1, 0)$
37 : $P_{189} = (10, 10, 1, 0)$
38 : $P_{190} = (11, 10, 1, 0)$
39 : $P_{205} = (10, 11, 1, 0)$
40 : $P_{206} = (11, 11, 1, 0)$
41 : $P_{221} = (10, 12, 1, 0)$
42 : $P_{222} = (11, 12, 1, 0)$
43 : $P_{237} = (10, 13, 1, 0)$
44 : $P_{238} = (11, 13, 1, 0)$
45 : $P_{253} = (10, 14, 1, 0)$
46 : $P_{254} = (11, 14, 1, 0)$
47 : $P_{269} = (10, 15, 1, 0)$
48 : $P_{270} = (11, 15, 1, 0)$
49 : $P_{300} = (10, 1, 0, 1)$
50 : $P_{301} = (11, 1, 0, 1)$
51 : $P_{435} = (1, 10, 0, 1)$
52 : $P_{444} = (10, 10, 0, 1)$
53 : $P_{451} = (1, 11, 0, 1)$
54 : $P_{461} = (11, 11, 0, 1)$
55 : $P_{530} = (0, 0, 1, 1)$
56 : $P_{546} = (0, 1, 1, 1)$
57 : $P_{566} = (5, 2, 1, 1)$
58 : $P_{569} = (8, 2, 1, 1)$
59 : $P_{601} = (8, 4, 1, 1)$
60 : $P_{608} = (15, 4, 1, 1)$
61 : $P_{676} = (3, 9, 1, 1)$
62 : $P_{688} = (15, 9, 1, 1)$
63 : $P_{690} = (1, 10, 1, 1)$
64 : $P_{700} = (11, 10, 1, 1)$
65 : $P_{706} = (1, 11, 1, 1)$
66 : $P_{715} = (10, 11, 1, 1)$
67 : $P_{756} = (3, 14, 1, 1)$
68 : $P_{758} = (5, 14, 1, 1)$
69 : $P_{785} = (0, 0, 2, 1)$
70 : $P_{805} = (4, 1, 2, 1)$
71 : $P_{808} = (7, 1, 2, 1)$
72 : $P_{849} = (0, 4, 2, 1)$
73 : $P_{853} = (4, 4, 2, 1)$
74 : $P_{892} = (11, 6, 2, 1)$
75 : $P_{894} = (13, 6, 2, 1)$
76 : $P_{904} = (7, 7, 2, 1)$
77 : $P_{908} = (11, 7, 2, 1)$
78 : $P_{927} = (14, 8, 2, 1)$
79 : $P_{928} = (15, 8, 2, 1)$
80 : $P_{932} = (3, 9, 2, 1)$
81 : $P_{941} = (12, 9, 2, 1)$
82 : $P_{950} = (5, 10, 2, 1)$
83 : $P_{957} = (12, 10, 2, 1)$
84 : $P_{967} = (6, 11, 2, 1)$
85 : $P_{975} = (14, 11, 2, 1)$
86 : $P_{982} = (5, 12, 2, 1)$
87 : $P_{1012} = (3, 14, 2, 1)$
88 : $P_{1015} = (6, 14, 2, 1)$
89 : $P_{1041} = (0, 0, 3, 1)$
90 : $P_{1070} = (13, 1, 3, 1)$
91 : $P_{1072} = (15, 1, 3, 1)$
92 : $P_{1077} = (4, 2, 3, 1)$
93 : $P_{1084} = (11, 2, 3, 1)$
94 : $P_{1121} = (0, 5, 3, 1)$
95 : $P_{1133} = (12, 5, 3, 1)$
96 : $P_{1146} = (9, 6, 3, 1)$
97 : $P_{1151} = (14, 6, 3, 1)$
98 : $P_{1175} = (6, 8, 3, 1)$
99 : $P_{1190} = (5, 9, 3, 1)$
100 : $P_{1196} = (11, 9, 3, 1)$
101 : $P_{1207} = (6, 10, 3, 1)$
102 : $P_{1215} = (14, 10, 3, 1)$
103 : $P_{1222} = (5, 11, 3, 1)$
104 : $P_{1229} = (12, 11, 3, 1)$
105 : $P_{1256} = (7, 13, 3, 1)$
106 : $P_{1262} = (13, 13, 3, 1)$
107 : $P_{1290} = (9, 15, 3, 1)$
108 : $P_{1296} = (15, 15, 3, 1)$
109 : $P_{1297} = (0, 0, 4, 1)$
110 : $P_{1322} = (9, 1, 4, 1)$
111 : $P_{1325} = (12, 1, 4, 1)$
112 : $P_{1334} = (5, 2, 4, 1)$
113 : $P_{1342} = (13, 2, 4, 1)$
114 : $P_{1401} = (8, 6, 4, 1)$
115 : $P_{1441} = (0, 9, 4, 1)$
116 : $P_{1450} = (9, 9, 4, 1)$
117 : $P_{1459} = (2, 10, 4, 1)$
118 : $P_{1470} = (13, 10, 4, 1)$
119 : $P_{1479} = (6, 11, 4, 1)$
120 : $P_{1481} = (8, 11, 4, 1)$
121 : $P_{1499} = (10, 12, 4, 1)$
122 : $P_{1501} = (12, 12, 4, 1)$
123 : $P_{1512} = (7, 13, 4, 1)$
124 : $P_{1515} = (10, 13, 4, 1)$
125 : $P_{1526} = (5, 14, 4, 1)$
126 : $P_{1527} = (6, 14, 4, 1)$
127 : $P_{1539} = (2, 15, 4, 1)$
128 : $P_{1540} = (3, 15, 4, 1)$
129 : $P_{1553} = (0, 0, 5, 1)$
130 : $P_{1572} = (3, 1, 5, 1)$
131 : $P_{1576} = (7, 1, 5, 1)$
132 : $P_{1604} = (3, 3, 5, 1)$
133 : $P_{1615} = (14, 3, 5, 1)$
134 : $P_{1626} = (9, 4, 5, 1)$
135 : $P_{1627} = (10, 4, 5, 1)$
136 : $P_{1672} = (7, 7, 5, 1)$
137 : $P_{1677} = (12, 7, 5, 1)$
138 : $P_{1681} = (0, 8, 5, 1)$
139 : $P_{1687} = (6, 8, 5, 1)$
140 : $P_{1719} = (6, 10, 5, 1)$
141 : $P_{1721} = (8, 10, 5, 1)$
142 : $P_{1731} = (2, 11, 5, 1)$
143 : $P_{1742} = (13, 11, 5, 1)$
144 : $P_{1763} = (2, 13, 5, 1)$
145 : $P_{1775} = (14, 13, 5, 1)$
146 : $P_{1785} = (8, 14, 5, 1)$
147 : $P_{1787} = (10, 14, 5, 1)$
148 : $P_{1806} = (13, 15, 5, 1)$
149 : $P_{1809} = (0, 0, 6, 1)$
150 : $P_{1828} = (3, 1, 6, 1)$
151 : $P_{1829} = (4, 1, 6, 1)$
152 : $P_{1860} = (3, 3, 6, 1)$
153 : $P_{1870} = (13, 3, 6, 1)$
154 : $P_{1877} = (4, 4, 6, 1)$
155 : $P_{1890} = (1, 5, 6, 1)$
156 : $P_{1897} = (8, 5, 6, 1)$
157 : $P_{1958} = (5, 9, 6, 1)$
158 : $P_{1967} = (14, 9, 6, 1)$
159 : $P_{1971} = (2, 10, 6, 1)$
160 : $P_{1984} = (15, 10, 6, 1)$
161 : $P_{1990} = (5, 11, 6, 1)$
162 : $P_{1994} = (9, 11, 6, 1)$
163 : $P_{2010} = (9, 12, 6, 1)$
164 : $P_{2014} = (13, 12, 6, 1)$
165 : $P_{2017} = (0, 13, 6, 1)$
166 : $P_{2032} = (15, 13, 6, 1)$
167 : $P_{2050} = (1, 15, 6, 1)$
168 : $P_{2051} = (2, 15, 6, 1)$
169 : $P_{2065} = (0, 0, 7, 1)$
170 : $P_{2089} = (8, 1, 7, 1)$
171 : $P_{2095} = (14, 1, 7, 1)$
172 : $P_{2101} = (4, 2, 7, 1)$
173 : $P_{2112} = (15, 2, 7, 1)$
174 : $P_{2146} = (1, 5, 7, 1)$
175 : $P_{2154} = (9, 5, 7, 1)$
176 : $P_{2201} = (8, 8, 7, 1)$
177 : $P_{2205} = (12, 8, 7, 1)$
178 : $P_{2230} = (5, 10, 7, 1)$
179 : $P_{2234} = (9, 10, 7, 1)$

180 : $P_{2243} = (2, 11, 7, 1)$
181 : $P_{2256} = (15, 11, 7, 1)$
182 : $P_{2257} = (0, 12, 7, 1)$
183 : $P_{2262} = (5, 12, 7, 1)$
184 : $P_{2275} = (2, 13, 7, 1)$
185 : $P_{2285} = (12, 13, 7, 1)$
186 : $P_{2303} = (14, 14, 7, 1)$
187 : $P_{2306} = (1, 15, 7, 1)$
188 : $P_{2308} = (3, 15, 7, 1)$
189 : $P_{2321} = (0, 0, 8, 1)$
190 : $P_{2342} = (5, 1, 8, 1)$
191 : $P_{2349} = (12, 1, 8, 1)$
192 : $P_{2364} = (11, 2, 8, 1)$
193 : $P_{2368} = (15, 2, 8, 1)$
194 : $P_{2376} = (7, 3, 8, 1)$
195 : $P_{2403} = (2, 5, 8, 1)$
196 : $P_{2406} = (5, 5, 8, 1)$
197 : $P_{2435} = (2, 7, 8, 1)$
198 : $P_{2437} = (4, 7, 8, 1)$
199 : $P_{2476} = (11, 9, 8, 1)$
200 : $P_{2479} = (14, 9, 8, 1)$
201 : $P_{2485} = (4, 10, 8, 1)$
202 : $P_{2488} = (7, 10, 8, 1)$
203 : $P_{2510} = (13, 11, 8, 1)$
204 : $P_{2512} = (15, 11, 8, 1)$
205 : $P_{2519} = (6, 12, 8, 1)$
206 : $P_{2525} = (12, 12, 8, 1)$
207 : $P_{2561} = (0, 15, 8, 1)$
208 : $P_{2574} = (13, 15, 8, 1)$
209 : $P_{2577} = (0, 0, 9, 1)$
210 : $P_{2599} = (6, 1, 9, 1)$
211 : $P_{2607} = (14, 1, 9, 1)$
212 : $P_{2617} = (8, 2, 9, 1)$
213 : $P_{2622} = (13, 2, 9, 1)$
214 : $P_{2629} = (4, 3, 9, 1)$
215 : $P_{2630} = (5, 3, 9, 1)$
216 : $P_{2648} = (7, 4, 9, 1)$
217 : $P_{2649} = (8, 4, 9, 1)$
218 : $P_{2679} = (6, 6, 9, 1)$
219 : $P_{2684} = (11, 6, 9, 1)$
220 : $P_{2700} = (11, 7, 9, 1)$
221 : $P_{2701} = (12, 7, 9, 1)$
222 : $P_{2750} = (13, 10, 9, 1)$
223 : $P_{2752} = (15, 10, 9, 1)$
224 : $P_{2757} = (4, 11, 9, 1)$
225 : $P_{2760} = (7, 11, 9, 1)$
226 : $P_{2800} = (15, 13, 9, 1)$
227 : $P_{2801} = (0, 14, 9, 1)$
228 : $P_{2815} = (14, 14, 9, 1)$
229 : $P_{2833} = (0, 0, 10, 1)$
230 : $P_{2850} = (1, 1, 10, 1)$
231 : $P_{2859} = (10, 1, 10, 1)$
232 : $P_{2915} = (2, 5, 10, 1)$
233 : $P_{2920} = (7, 5, 10, 1)$
234 : $P_{2936} = (7, 6, 10, 1)$
235 : $P_{2938} = (9, 6, 10, 1)$
236 : $P_{2947} = (2, 7, 10, 1)$
237 : $P_{2951} = (6, 7, 10, 1)$
238 : $P_{3003} = (10, 10, 10, 1)$
239 : $P_{3004} = (11, 10, 10, 1)$
240 : $P_{3009} = (0, 11, 10, 1)$
241 : $P_{3079} = (6, 15, 10, 1)$
242 : $P_{3082} = (9, 15, 10, 1)$
243 : $P_{3089} = (0, 0, 11, 1)$
244 : $P_{3106} = (1, 1, 11, 1)$
245 : $P_{3116} = (11, 1, 11, 1)$
246 : $P_{3150} = (13, 3, 11, 1)$
247 : $P_{3151} = (14, 3, 11, 1)$
248 : $P_{3221} = (4, 8, 11, 1)$
249 : $P_{3229} = (12, 8, 11, 1)$
250 : $P_{3249} = (0, 10, 11, 1)$
251 : $P_{3275} = (10, 11, 11, 1)$
252 : $P_{3276} = (11, 11, 11, 1)$
253 : $P_{3285} = (4, 12, 11, 1)$
254 : $P_{3294} = (13, 12, 11, 1)$
255 : $P_{3309} = (12, 13, 11, 1)$
256 : $P_{3311} = (14, 13, 11, 1)$
257 : $P_{3345} = (0, 0, 12, 1)$
258 : $P_{3363} = (2, 1, 12, 1)$
259 : $P_{3376} = (15, 1, 12, 1)$
260 : $P_{3379} = (2, 2, 12, 1)$
261 : $P_{3394} = (1, 3, 12, 1)$
262 : $P_{3398} = (5, 3, 12, 1)$
263 : $P_{3412} = (3, 4, 12, 1)$
264 : $P_{3418} = (9, 4, 12, 1)$
265 : $P_{3441} = (0, 6, 12, 1)$
266 : $P_{3449} = (8, 6, 12, 1)$
267 : $P_{3461} = (4, 7, 12, 1)$
268 : $P_{3463} = (6, 7, 12, 1)$
269 : $P_{3474} = (1, 8, 12, 1)$
270 : $P_{3487} = (14, 8, 12, 1)$
271 : $P_{3508} = (3, 10, 12, 1)$
272 : $P_{3509} = (4, 10, 12, 1)$
273 : $P_{3529} = (8, 11, 12, 1)$
274 : $P_{3535} = (14, 11, 12, 1)$
275 : $P_{3591} = (6, 15, 12, 1)$
276 : $P_{3600} = (15, 15, 12, 1)$
277 : $P_{3601} = (0, 0, 13, 1)$
278 : $P_{3622} = (5, 1, 13, 1)$
279 : $P_{3626} = (9, 1, 13, 1)$
280 : $P_{3650} = (1, 3, 13, 1)$
281 : $P_{3653} = (4, 3, 13, 1)$
282 : $P_{3686} = (5, 5, 13, 1)$
283 : $P_{3688} = (7, 5, 13, 1)$
284 : $P_{3704} = (7, 6, 13, 1)$
285 : $P_{3711} = (14, 6, 13, 1)$
286 : $P_{3713} = (0, 7, 13, 1)$
287 : $P_{3716} = (3, 7, 13, 1)$
288 : $P_{3730} = (1, 8, 13, 1)$
289 : $P_{3744} = (15, 8, 13, 1)$
290 : $P_{3754} = (9, 9, 13, 1)$
291 : $P_{3769} = (8, 10, 13, 1)$
292 : $P_{3775} = (14, 10, 13, 1)$
293 : $P_{3780} = (3, 11, 13, 1)$
294 : $P_{3781} = (4, 11, 13, 1)$
295 : $P_{3827} = (2, 14, 13, 1)$
296 : $P_{3833} = (8, 14, 13, 1)$
297 : $P_{3857} = (0, 0, 14, 1)$
298 : $P_{3875} = (2, 1, 14, 1)$
299 : $P_{3886} = (13, 1, 14, 1)$
300 : $P_{3889} = (0, 2, 14, 1)$
301 : $P_{3891} = (2, 2, 14, 1)$
302 : $P_{3928} = (7, 4, 14, 1)$
303 : $P_{3936} = (15, 4, 14, 1)$
304 : $P_{3945} = (8, 5, 14, 1)$
305 : $P_{3946} = (9, 5, 14, 1)$
306 : $P_{3972} = (3, 7, 14, 1)$
307 : $P_{4013} = (12, 9, 14, 1)$
308 : $P_{4016} = (15, 9, 14, 1)$
309 : $P_{4026} = (9, 10, 14, 1)$
310 : $P_{4029} = (12, 10, 14, 1)$
311 : $P_{4036} = (3, 11, 14, 1)$
312 : $P_{4040} = (7, 11, 14, 1)$
313 : $P_{4055} = (6, 12, 14, 1)$
314 : $P_{4059} = (10, 12, 14, 1)$
315 : $P_{4075} = (10, 13, 14, 1)$
316 : $P_{4078} = (13, 13, 14, 1)$
317 : $P_{4113} = (0, 0, 15, 1)$
318 : $P_{4135} = (6, 1, 15, 1)$
319 : $P_{4137} = (8, 1, 15, 1)$
320 : $P_{4161} = (0, 3, 15, 1)$
321 : $P_{4168} = (7, 3, 15, 1)$
322 : $P_{4180} = (3, 4, 15, 1)$
323 : $P_{4187} = (10, 4, 15, 1)$
324 : $P_{4205} = (12, 5, 15, 1)$
325 : $P_{4215} = (6, 6, 15, 1)$
326 : $P_{4222} = (13, 6, 15, 1)$
327 : $P_{4245} = (4, 8, 15, 1)$
328 : $P_{4249} = (8, 8, 15, 1)$
329 : $P_{4276} = (3, 10, 15, 1)$
330 : $P_{4280} = (7, 10, 15, 1)$
331 : $P_{4298} = (9, 11, 15, 1)$
332 : $P_{4301} = (12, 11, 15, 1)$
333 : $P_{4309} = (4, 12, 15, 1)$
334 : $P_{4314} = (9, 12, 15, 1)$
335 : $P_{4339} = (2, 14, 15, 1)$
336 : $P_{4347} = (10, 14, 15, 1)$