Rank-35 over GF(16)

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The equation

The equation of the surface is :

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

(0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)
The point rank of the equation over GF(16) is 4641

General information

Number of lines	17
Number of points	273
Number of singular points	17
Number of Eckardt points	0
Number of double points	0
Number of single points	272
Number of points off lines	0
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^{17}
Type of lines on points	17, 1^{272}

Singular Points

The surface has 17 singular points:

0 : $P_1 = \mathbf{P}(0,1,0,0) = \mathbf{P}(0,1,0,0)$
1 : $P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1)$
2 : $P_{290} = \mathbf{P}(0,1,0,1) = \mathbf{P}(0,1,0,1)$
3 : $P_{306} = \mathbf{P}(0,\delta,0,1) = \mathbf{P}(0,2,0,1)$
4 : $P_{322} = \mathbf{P}(0,\delta^{12},0,1) = \mathbf{P}(0,3,0,1)$
5 : $P_{338} = \mathbf{P}(0,\delta^{2},0,1) = \mathbf{P}(0,4,0,1)$
6 : $P_{354} = \mathbf{P}(0,\delta^{9},0,1) = \mathbf{P}(0,5,0,1)$
7 : $P_{370} = \mathbf{P}(0,\delta^{13},0,1) = \mathbf{P}(0,6,0,1)$
8 : $P_{386} = \mathbf{P}(0,\delta^{7},0,1) = \mathbf{P}(0,7,0,1)$
9 : $P_{402} = \mathbf{P}(0,\delta^{3},0,1) = \mathbf{P}(0,8,0,1)$
10 : $P_{418} = \mathbf{P}(0,\delta^{4},0,1) = \mathbf{P}(0,9,0,1)$
11 : $P_{434} = \mathbf{P}(0,\delta^{10},0,1) = \mathbf{P}(0,10,0,1)$
12 : $P_{450} = \mathbf{P}(0,\delta^{5},0,1) = \mathbf{P}(0,11,0,1)$
13 : $P_{466} = \mathbf{P}(0,\delta^{14},0,1) = \mathbf{P}(0,12,0,1)$
14 : $P_{482} = \mathbf{P}(0,\delta^{11},0,1) = \mathbf{P}(0,13,0,1)$
15 : $P_{498} = \mathbf{P}(0,\delta^{8},0,1) = \mathbf{P}(0,14,0,1)$
16 : $P_{514} = \mathbf{P}(0,\delta^{6},0,1) = \mathbf{P}(0,15,0,1)$

The 17 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{272} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{272} = \mathbf{Pl}(0,0,0,0,1,0)_{289}$$

$$\ell_1 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \mathbf{Pl}(0,0,0,1,0,0)_{33}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{4913} = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{4913} = \mathbf{Pl}(0,1,0,1,1,0)_{801}$$

$$\ell_3 = \left[\begin{array}{cccc} 1 & \delta^9 & \delta^8 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{62789} = \left[\begin{array}{cccc} 1 & 5 & 14 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{62789} = \mathbf{Pl}(0,14,0,5,1,0)_{938}$$

$$\ell_4 = \left[\begin{array}{cccc} 1 & \delta^3 & \delta^6 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{67976} = \left[\begin{array}{cccc} 1 & 8 & 15 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{67976} = \mathbf{Pl}(0,15,0,8,1,0)_{1032}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & \delta^3 & \delta & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{11192} = \left[\begin{array}{cccc} 1 & 8 & 2 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{11192} = \mathbf{Pl}(0,2,0,8,1,0)_{1019}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & \delta^6 & \delta^{12} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17471} = \left[\begin{array}{cccc} 1 & 15 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17471} = \mathbf{Pl}(0,3,0,15,1,0)_{1237}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^{14} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{53507} = \left[\begin{array}{cccc} 1 & 3 & 12 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{53507} = \mathbf{Pl}(0,12,0,3,1,0)_{874}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & \delta^3 & \delta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{59240} = \left[\begin{array}{cccc} 1 & 8 & 13 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{59240} = \mathbf{Pl}(0,13,0,8,1,0)_{1030}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^9 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{22931} = \left[\begin{array}{cccc} 1 & 3 & 5 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{22931} = \mathbf{Pl}(0,5,0,3,1,0)_{867}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & \delta^6 & \delta^2 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{21839} = \left[\begin{array}{cccc} 1 & 15 & 4 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{21839} = \mathbf{Pl}(0,4,0,15,1,0)_{1238}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & 1 & \delta^5 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{48593} = \left[\begin{array}{cccc} 1 & 1 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{48593} = \mathbf{Pl}(0,11,0,1,1,0)_{811}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & 1 & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{44225} = \left[\begin{array}{cccc} 1 & 1 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{44225} = \mathbf{Pl}(0,10,0,1,1,0)_{810}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \delta^6 & \delta^7 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{34943} = \left[\begin{array}{cccc} 1 & 15 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{34943} = \mathbf{Pl}(0,7,0,15,1,0)_{1241}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & \delta^9 & \delta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{27845} = \left[\begin{array}{cccc} 1 & 5 & 6 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{27845} = \mathbf{Pl}(0,6,0,5,1,0)_{930}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^4 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{40403} = \left[\begin{array}{cccc} 1 & 3 & 9 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{40403} = \mathbf{Pl}(0,9,0,3,1,0)_{871}$$

$$\ell_{16} = \left[\begin{array}{cccc} 1 & \delta^9 & \delta^3 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36581} = \left[\begin{array}{cccc} 1 & 5 & 8 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36581} = \mathbf{Pl}(0,8,0,5,1,0)_{932}$$

Rank of lines: (272, 69904, 4913, 62789, 67976, 11192, 17471, 53507, 59240, 22931, 21839, 48593, 44225, 34943, 27845, 40403, 36581)
Rank of points on Klein quadric: (289, 33, 801, 938, 1032, 1019, 1237, 874, 1030, 867, 1238, 811, 810, 1241, 930, 871, 932)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 272 single points:
The single points on the surface are:

$0: P_0 = (1,0,0,0)$ lies on line ℓ_0
$1: P_1 = (0,1,0,0)$ lies on line ℓ_1
$2: P_4 = (1,1,1,1)$ lies on line ℓ_2
$3: P_{36} = (1,1,1,0)$ lies on line ℓ_2
$4: P_{58} = (7,2,1,0)$ lies on line ℓ_3
$5: P_{72} = (5,3,1,0)$ lies on line ℓ_4
$6: P_{95} = (12,4,1,0)$ lies on line ℓ_5
$7: P_{107} = (8,5,1,0)$ lies on line ℓ_6
$8: P_{117} = (2,6,1,0)$ lies on line ℓ_7
$9: P_{140} = (9,7,1,0)$ lies on line ℓ_8
$10: P_{162} = (15,8,1,0)$ lies on line ℓ_9
$11: P_{169} = (6,9,1,0)$ lies on line ℓ_{10}
$12: P_{189} = (10,10,1,0)$ lies on line ℓ_{11}
$13: P_{206} = (11,11,1,0)$ lies on line ℓ_{12}
$14: P_{225} = (14,12,1,0)$ lies on line ℓ_{13}
$15: P_{231} = (4,13,1,0)$ lies on line ℓ_{14}
$16: P_{256} = (13,14,1,0)$ lies on line ℓ_{15}
$17: P_{262} = (3,15,1,0)$ lies on line ℓ_{16}
$18: P_{275} = (1,0,0,1)$ lies on line ℓ_0
$19: P_{276} = (2,0,0,1)$ lies on line ℓ_0
$20: P_{277} = (3,0,0,1)$ lies on line ℓ_0
$21: P_{278} = (4,0,0,1)$ lies on line ℓ_0
$22: P_{279} = (5,0,0,1)$ lies on line ℓ_0
$23: P_{280} = (6,0,0,1)$ lies on line ℓ_0
$24: P_{281} = (7,0,0,1)$ lies on line ℓ_0
$25: P_{282} = (8,0,0,1)$ lies on line ℓ_0
$26: P_{283} = (9,0,0,1)$ lies on line ℓ_0
$27: P_{284} = (10,0,0,1)$ lies on line ℓ_0
$28: P_{285} = (11,0,0,1)$ lies on line ℓ_0
$29: P_{286} = (12,0,0,1)$ lies on line ℓ_0
$30: P_{287} = (13,0,0,1)$ lies on line ℓ_0
$31: P_{288} = (14,0,0,1)$ lies on line ℓ_0
$32: P_{289} = (15,0,0,1)$ lies on line ℓ_0
$33: P_{290} = (0,1,0,1)$ lies on line ℓ_1
$34: P_{306} = (0,2,0,1)$ lies on line ℓ_1
$35: P_{322} = (0,3,0,1)$ lies on line ℓ_1
$36: P_{338} = (0,4,0,1)$ lies on line ℓ_1
$37: P_{354} = (0,5,0,1)$ lies on line ℓ_1
$38: P_{370} = (0,6,0,1)$ lies on line ℓ_1
$39: P_{386} = (0,7,0,1)$ lies on line ℓ_1
$40: P_{402} = (0,8,0,1)$ lies on line ℓ_1
$41: P_{418} = (0,9,0,1)$ lies on line ℓ_1
$42: P_{434} = (0,10,0,1)$ lies on line ℓ_1
$43: P_{450} = (0,11,0,1)$ lies on line ℓ_1
$44: P_{466} = (0,12,0,1)$ lies on line ℓ_1
$45: P_{482} = (0,13,0,1)$ lies on line ℓ_1
$46: P_{498} = (0,14,0,1)$ lies on line ℓ_1
$47: P_{514} = (0,15,0,1)$ lies on line ℓ_1
$48: P_{568} = (7,2,1,1)$ lies on line ℓ_3
$49: P_{582} = (5,3,1,1)$ lies on line ℓ_4
$50: P_{605} = (12,4,1,1)$ lies on line ℓ_5
$51: P_{617} = (8,5,1,1)$ lies on line ℓ_6
$52: P_{627} = (2,6,1,1)$ lies on line ℓ_7
$53: P_{650} = (9,7,1,1)$ lies on line ℓ_8
$54: P_{672} = (15,8,1,1)$ lies on line ℓ_9
$55: P_{679} = (6,9,1,1)$ lies on line ℓ_{10}
$56: P_{699} = (10,10,1,1)$ lies on line ℓ_{11}
$57: P_{716} = (11,11,1,1)$ lies on line ℓ_{12}
$58: P_{735} = (14,12,1,1)$ lies on line ℓ_{13}
$59: P_{741} = (4,13,1,1)$ lies on line ℓ_{14}
$60: P_{766} = (13,14,1,1)$ lies on line ℓ_{15}
$61: P_{772} = (3,15,1,1)$ lies on line ℓ_{16}
$62: P_{806} = (5,1,2,1)$ lies on line ℓ_{13}
$63: P_{819} = (2,2,2,1)$ lies on line ℓ_2
$64: P_{841} = (8,3,2,1)$ lies on line ℓ_{14}
$65: P_{863} = (14,4,2,1)$ lies on line ℓ_3
$66: P_{868} = (3,5,2,1)$ lies on line ℓ_{15}
$67: P_{891} = (10,6,2,1)$ lies on line ℓ_4
$68: P_{903} = (6,7,2,1)$ lies on line ℓ_{16}
$69: P_{914} = (1,8,2,1)$ lies on line ℓ_5
$70: P_{936} = (7,9,2,1)$ lies on line ℓ_9
$71: P_{954} = (9,10,2,1)$ lies on line ℓ_6
$72: P_{973} = (12,11,2,1)$ lies on line ℓ_{10}
$73: P_{981} = (4,12,2,1)$ lies on line ℓ_7

74 : $P_{1006} = (13, 13, 2, 1)$ lies on line ℓ_{11}
75 : $P_{1020} = (11, 14, 2, 1)$ lies on line ℓ_{8}
76 : $P_{1040} = (15, 15, 2, 1)$ lies on line ℓ_{12}
77 : $P_{1065} = (8, 1, 3, 1)$ lies on line ℓ_{9}
78 : $P_{1083} = (10, 2, 3, 1)$ lies on line ℓ_{10}
79 : $P_{1092} = (3, 3, 3, 1)$ lies on line ℓ_{2}
80 : $P_{1109} = (4, 4, 3, 1)$ lies on line ℓ_{12}
81 : $P_{1136} = (15, 5, 3, 1)$ lies on line ℓ_{4}
82 : $P_{1146} = (9, 6, 3, 1)$ lies on line ℓ_{3}
83 : $P_{1160} = (7, 7, 3, 1)$ lies on line ℓ_{11}
84 : $P_{1174} = (5, 8, 3, 1)$ lies on line ℓ_{16}
85 : $P_{1187} = (2, 9, 3, 1)$ lies on line ℓ_{8}
86 : $P_{1207} = (6, 10, 3, 1)$ lies on line ℓ_{7}
87 : $P_{1231} = (14, 11, 3, 1)$ lies on line ℓ_{15}
88 : $P_{1246} = (13, 12, 3, 1)$ lies on line ℓ_{5}
89 : $P_{1260} = (11, 13, 3, 1)$ lies on line ℓ_{13}
90 : $P_{1277} = (12, 14, 3, 1)$ lies on line ℓ_{14}
91 : $P_{1282} = (1, 15, 3, 1)$ lies on line ℓ_{6}
92 : $P_{1321} = (8, 1, 4, 1)$ lies on line ℓ_{7}
93 : $P_{1339} = (10, 2, 4, 1)$ lies on line ℓ_{13}
94 : $P_{1348} = (3, 3, 4, 1)$ lies on line ℓ_{11}
95 : $P_{1365} = (4, 4, 4, 1)$ lies on line ℓ_{2}
96 : $P_{1392} = (15, 5, 4, 1)$ lies on line ℓ_{8}
97 : $P_{1402} = (9, 6, 4, 1)$ lies on line ℓ_{14}
98 : $P_{1416} = (7, 7, 4, 1)$ lies on line ℓ_{12}
99 : $P_{1430} = (5, 8, 4, 1)$ lies on line ℓ_{3}
100 : $P_{1443} = (2, 9, 4, 1)$ lies on line ℓ_{5}
101 : $P_{1463} = (6, 10, 4, 1)$ lies on line ℓ_{15}
102 : $P_{1487} = (14, 11, 4, 1)$ lies on line ℓ_{9}
103 : $P_{1502} = (13, 12, 4, 1)$ lies on line ℓ_{4}
104 : $P_{1516} = (11, 13, 4, 1)$ lies on line ℓ_{6}
105 : $P_{1533} = (12, 14, 4, 1)$ lies on line ℓ_{16}
106 : $P_{1538} = (1, 15, 4, 1)$ lies on line ℓ_{10}
107 : $P_{1584} = (15, 1, 5, 1)$ lies on line ℓ_{16}
108 : $P_{1591} = (6, 2, 5, 1)$ lies on line ℓ_{8}
109 : $P_{1602} = (1, 3, 5, 1)$ lies on line ℓ_{9}
110 : $P_{1628} = (11, 4, 5, 1)$ lies on line ℓ_{15}
111 : $P_{1638} = (5, 5, 5, 1)$ lies on line ℓ_{2}
112 : $P_{1656} = (7, 6, 5, 1)$ lies on line ℓ_{10}
113 : $P_{1675} = (10, 7, 5, 1)$ lies on line ℓ_{7}
114 : $P_{1684} = (3, 8, 5, 1)$ lies on line ℓ_{6}
115 : $P_{1706} = (9, 9, 5, 1)$ lies on line ℓ_{11}
116 : $P_{1715} = (2, 10, 5, 1)$ lies on line ℓ_{3}
117 : $P_{1742} = (13, 11, 5, 1)$ lies on line ℓ_{14}
118 : $P_{1757} = (12, 12, 5, 1)$ lies on line ℓ_{12}
119 : $P_{1775} = (14, 13, 5, 1)$ lies on line ℓ_{5}
120 : $P_{1781} = (4, 14, 5, 1)$ lies on line ℓ_{13}
121 : $P_{1801} = (8, 15, 5, 1)$ lies on line ℓ_{4}
122 : $P_{1828} = (3, 1, 6, 1)$ lies on line ℓ_{5}
123 : $P_{1850} = (9, 2, 6, 1)$ lies on line ℓ_{9}
124 : $P_{1872} = (15, 3, 6, 1)$ lies on line ℓ_{13}
125 : $P_{1886} = (13, 4, 6, 1)$ lies on line ℓ_{10}
126 : $P_{1890} = (1, 5, 6, 1)$ lies on line ℓ_{14}
127 : $P_{1911} = (6, 6, 6, 1)$ lies on line ℓ_{2}
128 : $P_{1923} = (2, 7, 6, 1)$ lies on line ℓ_{6}
129 : $P_{1945} = (8, 8, 6, 1)$ lies on line ℓ_{12}
130 : $P_{1963} = (10, 9, 6, 1)$ lies on line ℓ_{16}
131 : $P_{1976} = (7, 10, 6, 1)$ lies on line ℓ_{4}
132 : $P_{1989} = (4, 11, 6, 1)$ lies on line ℓ_{8}
133 : $P_{2012} = (11, 12, 6, 1)$ lies on line ℓ_{3}
134 : $P_{2029} = (12, 13, 6, 1)$ lies on line ℓ_{7}
135 : $P_{2047} = (14, 14, 6, 1)$ lies on line ℓ_{11}
136 : $P_{2054} = (5, 15, 6, 1)$ lies on line ℓ_{15}
137 : $P_{2089} = (8, 1, 7, 1)$ lies on line ℓ_{15}
138 : $P_{2107} = (10, 2, 7, 1)$ lies on line ℓ_{6}
139 : $P_{2116} = (3, 3, 7, 1)$ lies on line ℓ_{12}
140 : $P_{2133} = (4, 4, 7, 1)$ lies on line ℓ_{11}
141 : $P_{2160} = (15, 5, 7, 1)$ lies on line ℓ_{5}
142 : $P_{2170} = (9, 6, 7, 1)$ lies on line ℓ_{16}
143 : $P_{2184} = (7, 7, 7, 1)$ lies on line ℓ_{2}
144 : $P_{2198} = (5, 8, 7, 1)$ lies on line ℓ_{14}
145 : $P_{2211} = (2, 9, 7, 1)$ lies on line ℓ_{4}
146 : $P_{2231} = (6, 10, 7, 1)$ lies on line ℓ_{9}
147 : $P_{2255} = (14, 11, 7, 1)$ lies on line ℓ_{7}
148 : $P_{2270} = (13, 12, 7, 1)$ lies on line ℓ_{8}
149 : $P_{2284} = (11, 13, 7, 1)$ lies on line ℓ_{10}
150 : $P_{2301} = (12, 14, 7, 1)$ lies on line ℓ_{3}
151 : $P_{2306} = (1, 15, 7, 1)$ lies on line ℓ_{13}
152 : $P_{2340} = (3, 1, 8, 1)$ lies on line ℓ_{4}
153 : $P_{2362} = (9, 2, 8, 1)$ lies on line ℓ_{7}
154 : $P_{2384} = (15, 3, 8, 1)$ lies on line ℓ_{6}
155 : $P_{2398} = (13, 4, 8, 1)$ lies on line ℓ_{13}
156 : $P_{2402} = (1, 5, 8, 1)$ lies on line ℓ_{16}
157 : $P_{2423} = (6, 6, 8, 1)$ lies on line ℓ_{11}
158 : $P_{2435} = (2, 7, 8, 1)$ lies on line ℓ_{10}
159 : $P_{2457} = (8, 8, 8, 1)$ lies on line ℓ_{2}
160 : $P_{2475} = (10, 9, 8, 1)$ lies on line ℓ_{3}
161 : $P_{2488} = (7, 10, 8, 1)$ lies on line ℓ_{8}
162 : $P_{2501} = (4, 11, 8, 1)$ lies on line ℓ_{5}
163 : $P_{2524} = (11, 12, 8, 1)$ lies on line ℓ_{14}
164 : $P_{2541} = (12, 13, 8, 1)$ lies on line ℓ_{15}
165 : $P_{2559} = (14, 14, 8, 1)$ lies on line ℓ_{12}
166 : $P_{2566} = (5, 15, 8, 1)$ lies on line ℓ_{9}
167 : $P_{2608} = (15, 1, 9, 1)$ lies on line ℓ_{14}
168 : $P_{2615} = (6, 2, 9, 1)$ lies on line ℓ_{4}
169 : $P_{2626} = (1, 3, 9, 1)$ lies on line ℓ_{15}
170 : $P_{2652} = (11, 4, 9, 1)$ lies on line ℓ_{7}
171 : $P_{2662} = (5, 5, 9, 1)$ lies on line ℓ_{12}
172 : $P_{2680} = (7, 6, 9, 1)$ lies on line ℓ_{6}
173 : $P_{2699} = (10, 7, 9, 1)$ lies on line ℓ_{9}
174 : $P_{2708} = (3, 8, 9, 1)$ lies on line ℓ_{13}
175 : $P_{2730} = (9, 9, 9, 1)$ lies on line ℓ_{2}
176 : $P_{2739} = (2, 10, 9, 1)$ lies on line ℓ_{16}
177 : $P_{2766} = (13, 11, 9, 1)$ lies on line ℓ_{3}
178 : $P_{2781} = (12, 12, 9, 1)$ lies on line ℓ_{11}
179 : $P_{2799} = (14, 13, 9, 1)$ lies on line ℓ_{8}
180 : $P_{2805} = (4, 14, 9, 1)$ lies on line ℓ_{10}
181 : $P_{2825} = (8, 15, 9, 1)$ lies on line ℓ_{5}

182 : $P_{2850} = (1, 1, 10, 1)$ lies on line ℓ_{12}
183 : $P_{2872} = (7, 2, 10, 1)$ lies on line ℓ_{16}
184 : $P_{2886} = (5, 3, 10, 1)$ lies on line ℓ_{5}
185 : $P_{2909} = (12, 4, 10, 1)$ lies on line ℓ_{8}
186 : $P_{2921} = (8, 5, 10, 1)$ lies on line ℓ_{13}
187 : $P_{2931} = (2, 6, 10, 1)$ lies on line ℓ_{9}
188 : $P_{2954} = (9, 7, 10, 1)$ lies on line ℓ_{4}
189 : $P_{2976} = (15, 8, 10, 1)$ lies on line ℓ_{15}
190 : $P_{2983} = (6, 9, 10, 1)$ lies on line ℓ_{6}
191 : $P_{3003} = (10, 10, 10, 1)$ lies on line ℓ_{2}
192 : $P_{3020} = (11, 11, 10, 1)$ lies on line ℓ_{11}
193 : $P_{3039} = (14, 12, 10, 1)$ lies on line ℓ_{10}
194 : $P_{3045} = (4, 13, 10, 1)$ lies on line ℓ_{3}
195 : $P_{3070} = (13, 14, 10, 1)$ lies on line ℓ_{7}
196 : $P_{3076} = (3, 15, 10, 1)$ lies on line ℓ_{14}
197 : $P_{3106} = (1, 1, 11, 1)$ lies on line ℓ_{11}
198 : $P_{3128} = (7, 2, 11, 1)$ lies on line ℓ_{14}
199 : $P_{3142} = (5, 3, 11, 1)$ lies on line ℓ_{8}
200 : $P_{3165} = (12, 4, 11, 1)$ lies on line ℓ_{4}
201 : $P_{3177} = (8, 5, 11, 1)$ lies on line ℓ_{10}
202 : $P_{3187} = (2, 6, 11, 1)$ lies on line ℓ_{15}
203 : $P_{3210} = (9, 7, 11, 1)$ lies on line ℓ_{5}
204 : $P_{3232} = (15, 8, 11, 1)$ lies on line ℓ_{7}
205 : $P_{3239} = (6, 9, 11, 1)$ lies on line ℓ_{13}
206 : $P_{3259} = (10, 10, 11, 1)$ lies on line ℓ_{12}
207 : $P_{3276} = (11, 11, 11, 1)$ lies on line ℓ_{2}
208 : $P_{3295} = (14, 12, 11, 1)$ lies on line ℓ_{6}
209 : $P_{3301} = (4, 13, 11, 1)$ lies on line ℓ_{16}
210 : $P_{3326} = (13, 14, 11, 1)$ lies on line ℓ_{9}
211 : $P_{3332} = (3, 15, 11, 1)$ lies on line ℓ_{3}
212 : $P_{3376} = (15, 1, 12, 1)$ lies on line ℓ_{3}
213 : $P_{3383} = (6, 2, 12, 1)$ lies on line ℓ_{5}
214 : $P_{3394} = (1, 3, 12, 1)$ lies on line ℓ_{7}
215 : $P_{3420} = (11, 4, 12, 1)$ lies on line ℓ_{9}
216 : $P_{3430} = (5, 5, 12, 1)$ lies on line ℓ_{11}
217 : $P_{3448} = (7, 6, 12, 1)$ lies on line ℓ_{13}
218 : $P_{3467} = (10, 7, 12, 1)$ lies on line ℓ_{15}
219 : $P_{3476} = (3, 8, 12, 1)$ lies on line ℓ_{10}
220 : $P_{3498} = (9, 9, 12, 1)$ lies on line ℓ_{12}
221 : $P_{3507} = (2, 10, 12, 1)$ lies on line ℓ_{14}
222 : $P_{3534} = (13, 11, 12, 1)$ lies on line ℓ_{16}
223 : $P_{3549} = (12, 12, 12, 1)$ lies on line ℓ_{2}
224 : $P_{3567} = (14, 13, 12, 1)$ lies on line ℓ_{4}
225 : $P_{3573} = (4, 14, 12, 1)$ lies on line ℓ_{6}
226 : $P_{3593} = (8, 15, 12, 1)$ lies on line ℓ_{8}
227 : $P_{3622} = (5, 1, 13, 1)$ lies on line ℓ_{10}
228 : $P_{3635} = (2, 2, 13, 1)$ lies on line ℓ_{12}
229 : $P_{3657} = (8, 3, 13, 1)$ lies on line ℓ_{3}
230 : $P_{3679} = (14, 4, 13, 1)$ lies on line ℓ_{16}
231 : $P_{3684} = (3, 5, 13, 1)$ lies on line ℓ_{7}
232 : $P_{3707} = (10, 6, 13, 1)$ lies on line ℓ_{5}
233 : $P_{3719} = (6, 7, 13, 1)$ lies on line ℓ_{14}
234 : $P_{3730} = (1, 8, 13, 1)$ lies on line ℓ_{8}
235 : $P_{3752} = (7, 9, 13, 1)$ lies on line ℓ_{15}
236 : $P_{3770} = (9, 10, 13, 1)$ lies on line ℓ_{13}
237 : $P_{3789} = (12, 11, 13, 1)$ lies on line ℓ_{6}
238 : $P_{3797} = (4, 12, 13, 1)$ lies on line ℓ_{9}
239 : $P_{3822} = (13, 13, 13, 1)$ lies on line ℓ_{2}
240 : $P_{3836} = (11, 14, 13, 1)$ lies on line ℓ_{4}
241 : $P_{3856} = (15, 15, 13, 1)$ lies on line ℓ_{11}
242 : $P_{3876} = (3, 1, 14, 1)$ lies on line ℓ_{8}
243 : $P_{3898} = (9, 2, 14, 1)$ lies on line ℓ_{15}
244 : $P_{3920} = (15, 3, 14, 1)$ lies on line ℓ_{10}
245 : $P_{3934} = (13, 4, 14, 1)$ lies on line ℓ_{6}
246 : $P_{3938} = (1, 5, 14, 1)$ lies on line ℓ_{3}
247 : $P_{3959} = (6, 6, 14, 1)$ lies on line ℓ_{12}
248 : $P_{3971} = (2, 7, 14, 1)$ lies on line ℓ_{13}
249 : $P_{3993} = (8, 8, 14, 1)$ lies on line ℓ_{11}
250 : $P_{4011} = (10, 9, 14, 1)$ lies on line ℓ_{14}
251 : $P_{4024} = (7, 10, 14, 1)$ lies on line ℓ_{5}
252 : $P_{4037} = (4, 11, 14, 1)$ lies on line ℓ_{4}
253 : $P_{4060} = (11, 12, 14, 1)$ lies on line ℓ_{16}
254 : $P_{4077} = (12, 13, 14, 1)$ lies on line ℓ_{9}
255 : $P_{4095} = (14, 14, 14, 1)$ lies on line ℓ_{2}
256 : $P_{4102} = (5, 15, 14, 1)$ lies on line ℓ_{7}
257 : $P_{4134} = (5, 1, 15, 1)$ lies on line ℓ_{6}
258 : $P_{4147} = (2, 2, 15, 1)$ lies on line ℓ_{11}
259 : $P_{4169} = (8, 3, 15, 1)$ lies on line ℓ_{16}
260 : $P_{4191} = (14, 4, 15, 1)$ lies on line ℓ_{14}
261 : $P_{4196} = (3, 5, 15, 1)$ lies on line ℓ_{9}
262 : $P_{4219} = (10, 6, 15, 1)$ lies on line ℓ_{8}
263 : $P_{4231} = (6, 7, 15, 1)$ lies on line ℓ_{3}
264 : $P_{4242} = (1, 8, 15, 1)$ lies on line ℓ_{4}
265 : $P_{4264} = (7, 9, 15, 1)$ lies on line ℓ_{7}
266 : $P_{4282} = (9, 10, 15, 1)$ lies on line ℓ_{10}
267 : $P_{4301} = (12, 11, 15, 1)$ lies on line ℓ_{13}
268 : $P_{4309} = (4, 12, 15, 1)$ lies on line ℓ_{15}
269 : $P_{4334} = (13, 13, 15, 1)$ lies on line ℓ_{12}
270 : $P_{4348} = (11, 14, 15, 1)$ lies on line ℓ_{5}
271 : $P_{4368} = (15, 15, 15, 1)$ lies on line ℓ_{2}

The single points on the surface are:

Points on surface but on no line

The surface has 0 points not on any line:
The points on the surface but not on lines are:

Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	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	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 3 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 4 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 5 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 6 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 7 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 9 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 10 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 11 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 12 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 13 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 14 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{15}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 15 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{16}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 16 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

The surface has 273 points:
The points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$
1 : $P_1 = (0, 1, 0, 0)$
2 : $P_3 = (0, 0, 0, 1)$
3 : $P_4 = (1, 1, 1, 1)$
4 : $P_{36} = (1, 1, 1, 0)$
5 : $P_{58} = (7, 2, 1, 0)$
6 : $P_{72} = (5, 3, 1, 0)$
7 : $P_{95} = (12, 4, 1, 0)$
8 : $P_{107} = (8, 5, 1, 0)$
9 : $P_{117} = (2, 6, 1, 0)$
10 : $P_{140} = (9, 7, 1, 0)$
11 : $P_{162} = (15, 8, 1, 0)$
12 : $P_{169} = (6, 9, 1, 0)$
13 : $P_{189} = (10, 10, 1, 0)$
14 : $P_{206} = (11, 11, 1, 0)$

15 : $P_{225} = (14, 12, 1, 0)$
16 : $P_{231} = (4, 13, 1, 0)$
17 : $P_{256} = (13, 14, 1, 0)$
18 : $P_{262} = (3, 15, 1, 0)$
19 : $P_{275} = (1, 0, 0, 1)$
20 : $P_{276} = (2, 0, 0, 1)$
21 : $P_{277} = (3, 0, 0, 1)$
22 : $P_{278} = (4, 0, 0, 1)$
23 : $P_{279} = (5, 0, 0, 1)$
24 : $P_{280} = (6, 0, 0, 1)$
25 : $P_{281} = (7, 0, 0, 1)$
26 : $P_{282} = (8, 0, 0, 1)$
27 : $P_{283} = (9, 0, 0, 1)$
28 : $P_{284} = (10, 0, 0, 1)$
29 : $P_{285} = (11, 0, 0, 1)$
30 : $P_{286} = (12, 0, 0, 1)$
31 : $P_{287} = (13, 0, 0, 1)$
32 : $P_{288} = (14, 0, 0, 1)$
33 : $P_{289} = (15, 0, 0, 1)$
34 : $P_{290} = (0, 1, 0, 1)$
35 : $P_{306} = (0, 2, 0, 1)$
36 : $P_{322} = (0, 3, 0, 1)$
37 : $P_{338} = (0, 4, 0, 1)$
38 : $P_{354} = (0, 5, 0, 1)$
39 : $P_{370} = (0, 6, 0, 1)$
40 : $P_{386} = (0, 7, 0, 1)$
41 : $P_{402} = (0, 8, 0, 1)$
42 : $P_{418} = (0, 9, 0, 1)$
43 : $P_{434} = (0, 10, 0, 1)$
44 : $P_{450} = (0, 11, 0, 1)$
45 : $P_{466} = (0, 12, 0, 1)$
46 : $P_{482} = (0, 13, 0, 1)$
47 : $P_{498} = (0, 14, 0, 1)$
48 : $P_{514} = (0, 15, 0, 1)$
49 : $P_{568} = (7, 2, 1, 1)$
50 : $P_{582} = (5, 3, 1, 1)$
51 : $P_{605} = (12, 4, 1, 1)$
52 : $P_{617} = (8, 5, 1, 1)$
53 : $P_{627} = (2, 6, 1, 1)$
54 : $P_{650} = (9, 7, 1, 1)$
55 : $P_{672} = (15, 8, 1, 1)$
56 : $P_{679} = (6, 9, 1, 1)$
57 : $P_{699} = (10, 10, 1, 1)$
58 : $P_{716} = (11, 11, 1, 1)$
59 : $P_{735} = (14, 12, 1, 1)$
60 : $P_{741} = (4, 13, 1, 1)$
61 : $P_{766} = (13, 14, 1, 1)$
62 : $P_{772} = (3, 15, 1, 1)$
63 : $P_{806} = (5, 1, 2, 1)$
64 : $P_{819} = (2, 2, 2, 1)$
65 : $P_{841} = (8, 3, 2, 1)$
66 : $P_{863} = (14, 4, 2, 1)$
67 : $P_{868} = (3, 5, 2, 1)$
68 : $P_{891} = (10, 6, 2, 1)$
69 : $P_{903} = (6, 7, 2, 1)$
70 : $P_{914} = (1, 8, 2, 1)$
71 : $P_{936} = (7, 9, 2, 1)$
72 : $P_{954} = (9, 10, 2, 1)$
73 : $P_{973} = (12, 11, 2, 1)$
74 : $P_{981} = (4, 12, 2, 1)$
75 : $P_{1006} = (13, 13, 2, 1)$
76 : $P_{1020} = (11, 14, 2, 1)$
77 : $P_{1040} = (15, 15, 2, 1)$
78 : $P_{1065} = (8, 1, 3, 1)$
79 : $P_{1083} = (10, 2, 3, 1)$
80 : $P_{1092} = (3, 3, 3, 1)$
81 : $P_{1109} = (4, 4, 3, 1)$
82 : $P_{1136} = (15, 5, 3, 1)$
83 : $P_{1146} = (9, 6, 3, 1)$
84 : $P_{1160} = (7, 7, 3, 1)$
85 : $P_{1174} = (5, 8, 3, 1)$
86 : $P_{1187} = (2, 9, 3, 1)$
87 : $P_{1207} = (6, 10, 3, 1)$
88 : $P_{1231} = (14, 11, 3, 1)$
89 : $P_{1246} = (13, 12, 3, 1)$
90 : $P_{1260} = (11, 13, 3, 1)$
91 : $P_{1277} = (12, 14, 3, 1)$
92 : $P_{1282} = (1, 15, 3, 1)$
93 : $P_{1321} = (8, 1, 4, 1)$
94 : $P_{1339} = (10, 2, 4, 1)$
95 : $P_{1348} = (3, 3, 4, 1)$
96 : $P_{1365} = (4, 4, 4, 1)$
97 : $P_{1392} = (15, 5, 4, 1)$
98 : $P_{1402} = (9, 6, 4, 1)$
99 : $P_{1416} = (7, 7, 4, 1)$
100 : $P_{1430} = (5, 8, 4, 1)$
101 : $P_{1443} = (2, 9, 4, 1)$
102 : $P_{1463} = (6, 10, 4, 1)$
103 : $P_{1487} = (14, 11, 4, 1)$
104 : $P_{1502} = (13, 12, 4, 1)$
105 : $P_{1516} = (11, 13, 4, 1)$
106 : $P_{1533} = (12, 14, 4, 1)$
107 : $P_{1538} = (1, 15, 4, 1)$
108 : $P_{1584} = (15, 1, 5, 1)$
109 : $P_{1591} = (6, 2, 5, 1)$
110 : $P_{1602} = (1, 3, 5, 1)$
111 : $P_{1628} = (11, 4, 5, 1)$
112 : $P_{1638} = (5, 5, 5, 1)$
113 : $P_{1656} = (7, 6, 5, 1)$
114 : $P_{1675} = (10, 7, 5, 1)$
115 : $P_{1684} = (3, 8, 5, 1)$
116 : $P_{1706} = (9, 9, 5, 1)$
117 : $P_{1715} = (2, 10, 5, 1)$
118 : $P_{1742} = (13, 11, 5, 1)$
119 : $P_{1757} = (12, 12, 5, 1)$
120 : $P_{1775} = (14, 13, 5, 1)$
121 : $P_{1781} = (4, 14, 5, 1)$
122 : $P_{1801} = (8, 15, 5, 1)$
123 : $P_{1828} = (3, 1, 6, 1)$
124 : $P_{1850} = (9, 2, 6, 1)$
125 : $P_{1872} = (15, 3, 6, 1)$
126 : $P_{1886} = (13, 4, 6, 1)$
127 : $P_{1890} = (1, 5, 6, 1)$
128 : $P_{1911} = (6, 6, 6, 1)$
129 : $P_{1923} = (2, 7, 6, 1)$
130 : $P_{1945} = (8, 8, 6, 1)$
131 : $P_{1963} = (10, 9, 6, 1)$
132 : $P_{1976} = (7, 10, 6, 1)$
133 : $P_{1989} = (4, 11, 6, 1)$
134 : $P_{2012} = (11, 12, 6, 1)$
135 : $P_{2029} = (12, 13, 6, 1)$
136 : $P_{2047} = (14, 14, 6, 1)$
137 : $P_{2054} = (5, 15, 6, 1)$
138 : $P_{2089} = (8, 1, 7, 1)$
139 : $P_{2107} = (10, 2, 7, 1)$
140 : $P_{2116} = (3, 3, 7, 1)$
141 : $P_{2133} = (4, 4, 7, 1)$
142 : $P_{2160} = (15, 5, 7, 1)$
143 : $P_{2170} = (9, 6, 7, 1)$
144 : $P_{2184} = (7, 7, 7, 1)$
145 : $P_{2198} = (5, 8, 7, 1)$
146 : $P_{2211} = (2, 9, 7, 1)$
147 : $P_{2231} = (6, 10, 7, 1)$
148 : $P_{2255} = (14, 11, 7, 1)$
149 : $P_{2270} = (13, 12, 7, 1)$
150 : $P_{2284} = (11, 13, 7, 1)$
151 : $P_{2301} = (12, 14, 7, 1)$
152 : $P_{2306} = (1, 15, 7, 1)$
153 : $P_{2340} = (3, 1, 8, 1)$
154 : $P_{2362} = (9, 2, 8, 1)$
155 : $P_{2384} = (15, 3, 8, 1)$
156 : $P_{2398} = (13, 4, 8, 1)$
157 : $P_{2402} = (1, 5, 8, 1)$
158 : $P_{2423} = (6, 6, 8, 1)$
159 : $P_{2435} = (2, 7, 8, 1)$
160 : $P_{2457} = (8, 8, 8, 1)$
161 : $P_{2475} = (10, 9, 8, 1)$
162 : $P_{2488} = (7, 10, 8, 1)$
163 : $P_{2501} = (4, 11, 8, 1)$
164 : $P_{2524} = (11, 12, 8, 1)$
165 : $P_{2541} = (12, 13, 8, 1)$
166 : $P_{2559} = (14, 14, 8, 1)$
167 : $P_{2566} = (5, 15, 8, 1)$
168 : $P_{2608} = (15, 1, 9, 1)$
169 : $P_{2615} = (6, 2, 9, 1)$
170 : $P_{2626} = (1, 3, 9, 1)$
171 : $P_{2652} = (11, 4, 9, 1)$
172 : $P_{2662} = (5, 5, 9, 1)$
173 : $P_{2680} = (7, 6, 9, 1)$
174 : $P_{2699} = (10, 7, 9, 1)$
175 : $P_{2708} = (3, 8, 9, 1)$
176 : $P_{2730} = (9, 9, 9, 1)$

177 : $P_{2739} = (2, 10, 9, 1)$
178 : $P_{2766} = (13, 11, 9, 1)$
179 : $P_{2781} = (12, 12, 9, 1)$
180 : $P_{2799} = (14, 13, 9, 1)$
181 : $P_{2805} = (4, 14, 9, 1)$
182 : $P_{2825} = (8, 15, 9, 1)$
183 : $P_{2850} = (1, 1, 10, 1)$
184 : $P_{2872} = (7, 2, 10, 1)$
185 : $P_{2886} = (5, 3, 10, 1)$
186 : $P_{2909} = (12, 4, 10, 1)$
187 : $P_{2921} = (8, 5, 10, 1)$
188 : $P_{2931} = (2, 6, 10, 1)$
189 : $P_{2954} = (9, 7, 10, 1)$
190 : $P_{2976} = (15, 8, 10, 1)$
191 : $P_{2983} = (6, 9, 10, 1)$
192 : $P_{3003} = (10, 10, 10, 1)$
193 : $P_{3020} = (11, 11, 10, 1)$
194 : $P_{3039} = (14, 12, 10, 1)$
195 : $P_{3045} = (4, 13, 10, 1)$
196 : $P_{3070} = (13, 14, 10, 1)$
197 : $P_{3076} = (3, 15, 10, 1)$
198 : $P_{3106} = (1, 1, 11, 1)$
199 : $P_{3128} = (7, 2, 11, 1)$
200 : $P_{3142} = (5, 3, 11, 1)$
201 : $P_{3165} = (12, 4, 11, 1)$
202 : $P_{3177} = (8, 5, 11, 1)$
203 : $P_{3187} = (2, 6, 11, 1)$
204 : $P_{3210} = (9, 7, 11, 1)$
205 : $P_{3232} = (15, 8, 11, 1)$
206 : $P_{3239} = (6, 9, 11, 1)$
207 : $P_{3259} = (10, 10, 11, 1)$
208 : $P_{3276} = (11, 11, 11, 1)$
209 : $P_{3295} = (14, 12, 11, 1)$
210 : $P_{3301} = (4, 13, 11, 1)$
211 : $P_{3326} = (13, 14, 11, 1)$
212 : $P_{3332} = (3, 15, 11, 1)$
213 : $P_{3376} = (15, 1, 12, 1)$
214 : $P_{3383} = (6, 2, 12, 1)$
215 : $P_{3394} = (1, 3, 12, 1)$
216 : $P_{3420} = (11, 4, 12, 1)$
217 : $P_{3430} = (5, 5, 12, 1)$
218 : $P_{3448} = (7, 6, 12, 1)$
219 : $P_{3467} = (10, 7, 12, 1)$
220 : $P_{3476} = (3, 8, 12, 1)$
221 : $P_{3498} = (9, 9, 12, 1)$
222 : $P_{3507} = (2, 10, 12, 1)$
223 : $P_{3534} = (13, 11, 12, 1)$
224 : $P_{3549} = (12, 12, 12, 1)$
225 : $P_{3567} = (14, 13, 12, 1)$
226 : $P_{3573} = (4, 14, 12, 1)$
227 : $P_{3593} = (8, 15, 12, 1)$
228 : $P_{3622} = (5, 1, 13, 1)$
229 : $P_{3635} = (2, 2, 13, 1)$
230 : $P_{3657} = (8, 3, 13, 1)$
231 : $P_{3679} = (14, 4, 13, 1)$
232 : $P_{3684} = (3, 5, 13, 1)$
233 : $P_{3707} = (10, 6, 13, 1)$
234 : $P_{3719} = (6, 7, 13, 1)$
235 : $P_{3730} = (1, 8, 13, 1)$
236 : $P_{3752} = (7, 9, 13, 1)$
237 : $P_{3770} = (9, 10, 13, 1)$
238 : $P_{3789} = (12, 11, 13, 1)$
239 : $P_{3797} = (4, 12, 13, 1)$
240 : $P_{3822} = (13, 13, 13, 1)$
241 : $P_{3836} = (11, 14, 13, 1)$
242 : $P_{3856} = (15, 15, 13, 1)$
243 : $P_{3876} = (3, 1, 14, 1)$
244 : $P_{3898} = (9, 2, 14, 1)$
245 : $P_{3920} = (15, 3, 14, 1)$
246 : $P_{3934} = (13, 4, 14, 1)$
247 : $P_{3938} = (1, 5, 14, 1)$
248 : $P_{3959} = (6, 6, 14, 1)$
249 : $P_{3971} = (2, 7, 14, 1)$
250 : $P_{3993} = (8, 8, 14, 1)$
251 : $P_{4011} = (10, 9, 14, 1)$
252 : $P_{4024} = (7, 10, 14, 1)$
253 : $P_{4037} = (4, 11, 14, 1)$
254 : $P_{4060} = (11, 12, 14, 1)$
255 : $P_{4077} = (12, 13, 14, 1)$
256 : $P_{4095} = (14, 14, 14, 1)$
257 : $P_{4102} = (5, 15, 14, 1)$
258 : $P_{4134} = (5, 1, 15, 1)$
259 : $P_{4147} = (2, 2, 15, 1)$
260 : $P_{4169} = (8, 3, 15, 1)$
261 : $P_{4191} = (14, 4, 15, 1)$
262 : $P_{4196} = (3, 5, 15, 1)$
263 : $P_{4219} = (10, 6, 15, 1)$
264 : $P_{4231} = (6, 7, 15, 1)$
265 : $P_{4242} = (1, 8, 15, 1)$
266 : $P_{4264} = (7, 9, 15, 1)$
267 : $P_{4282} = (9, 10, 15, 1)$
268 : $P_{4301} = (12, 11, 15, 1)$
269 : $P_{4309} = (4, 12, 15, 1)$
270 : $P_{4334} = (13, 13, 15, 1)$
271 : $P_{4348} = (11, 14, 15, 1)$
272 : $P_{4368} = (15, 15, 15, 1)$