

Rank-65561 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(16) is 286396965

General information

| | |
|----------------------------|---------------|
| Number of lines | 16 |
| Number of points | 257 |
| Number of singular points | 1 |
| Number of Eckardt points | 0 |
| Number of double points | 0 |
| Number of single points | 256 |
| Number of points off lines | 0 |
| Number of Hesse planes | 0 |
| Number of axes | 0 |
| Type of points on lines | 17^{16} |
| Type of lines on points | $16, 1^{256}$ |

Singular Points

The surface has 1 singular points:

$$0 : P_3 = \mathbf{P}(0, 0, 0, 1) = \mathbf{P}(0, 0, 0, 1)$$

The 16 Lines

The lines and their Pluecker coordinates are:

$$\begin{aligned} \ell_0 &= \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{272} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{272} = \mathbf{Pl}(0, 0, 0, 0, 1, 0)_{289} \\ \ell_1 &= \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{545} = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{545} = \mathbf{Pl}(0, 0, 0, 1, 1, 0)_{785} \end{aligned}$$

$$\begin{aligned}
\ell_2 &= \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \mathbf{Pl}(0, 1, 0, 1, 0, 0)_{49} \\
\ell_3 &= \begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{4913} = \begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{4913} = \mathbf{Pl}(0, 1, 0, 1, 1, 0)_{801} \\
\ell_4 &= \begin{bmatrix} 1 & \delta^{10} & \delta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{29210} = \begin{bmatrix} 1 & 10 & 6 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{29210} = \mathbf{Pl}(0, 6, 0, 10, 1, 0)_{1085} \\
\ell_5 &= \begin{bmatrix} 1 & \delta^3 & \delta^6 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{67976} = \begin{bmatrix} 1 & 8 & 15 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{67976} = \mathbf{Pl}(0, 15, 0, 8, 1, 0)_{1032} \\
\ell_6 &= \begin{bmatrix} 1 & \delta^6 & \delta^{12} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17471} = \begin{bmatrix} 1 & 15 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17471} = \mathbf{Pl}(0, 3, 0, 15, 1, 0)_{1237} \\
\ell_7 &= \begin{bmatrix} 1 & \delta^5 & \delta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{60059} = \begin{bmatrix} 1 & 11 & 13 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{60059} = \mathbf{Pl}(0, 13, 0, 11, 1, 0)_{1123} \\
\ell_8 &= \begin{bmatrix} 1 & \delta^{10} & \delta^7 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{33578} = \begin{bmatrix} 1 & 10 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{33578} = \mathbf{Pl}(0, 7, 0, 10, 1, 0)_{1086} \\
\ell_9 &= \begin{bmatrix} 1 & \delta^{12} & \delta^9 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{22931} = \begin{bmatrix} 1 & 3 & 5 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{22931} = \mathbf{Pl}(0, 5, 0, 3, 1, 0)_{867} \\
\ell_{10} &= \begin{bmatrix} 0 & 1 & \delta^5 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70091} = \begin{bmatrix} 0 & 1 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70091} = \mathbf{Pl}(0, 11, 0, 1, 0, 0)_{59} \\
\ell_{11} &= \begin{bmatrix} 1 & \delta^{10} & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{7370} = \begin{bmatrix} 1 & 10 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{7370} = \mathbf{Pl}(0, 1, 0, 10, 1, 0)_{1080} \\
\ell_{12} &= \begin{bmatrix} 0 & 1 & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70074} = \begin{bmatrix} 0 & 1 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70074} = \mathbf{Pl}(0, 10, 0, 1, 0, 0)_{58} \\
\ell_{13} &= \begin{bmatrix} 1 & \delta^5 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{7643} = \begin{bmatrix} 1 & 11 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{7643} = \mathbf{Pl}(0, 1, 0, 11, 1, 0)_{1111} \\
\ell_{14} &= \begin{bmatrix} 1 & \delta^5 & \delta^{14} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{55691} = \begin{bmatrix} 1 & 11 & 12 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{55691} = \mathbf{Pl}(0, 12, 0, 11, 1, 0)_{1122} \\
\ell_{15} &= \begin{bmatrix} 1 & \delta^9 & \delta^3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{36581} = \begin{bmatrix} 1 & 5 & 8 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{36581} = \mathbf{Pl}(0, 8, 0, 5, 1, 0)_{932}
\end{aligned}$$

Rank of lines: (272, 545, 69921, 4913, 29210, 67976, 17471, 60059, 33578, 22931, 70091, 7370, 70074, 7643, 55691, 36581)

Rank of points on Klein quadric: (289, 785, 49, 801, 1085, 1032, 1237, 1123, 1086, 867, 59, 1080, 58, 1111, 1122, 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 256 single points:
The single points on the surface are:

- | | |
|---|--|
| 0 : $P_0 = (1, 0, 0, 0)$ lies on line ℓ_0 | 48 : $P_{581} = (4, 3, 1, 1)$ lies on line ℓ_4 |
| 1 : $P_4 = (1, 1, 1, 1)$ lies on line ℓ_3 | 49 : $P_{582} = (5, 3, 1, 1)$ lies on line ℓ_5 |
| 2 : $P_5 = (1, 1, 0, 0)$ lies on line ℓ_1 | 50 : $P_{617} = (8, 5, 1, 1)$ lies on line ℓ_6 |
| 3 : $P_{35} = (0, 1, 1, 0)$ lies on line ℓ_2 | 51 : $P_{618} = (9, 5, 1, 1)$ lies on line ℓ_7 |
| 4 : $P_{36} = (1, 1, 1, 0)$ lies on line ℓ_3 | 52 : $P_{671} = (14, 8, 1, 1)$ lies on line ℓ_8 |
| 5 : $P_{71} = (4, 3, 1, 0)$ lies on line ℓ_4 | 53 : $P_{672} = (15, 8, 1, 1)$ lies on line ℓ_9 |
| 6 : $P_{72} = (5, 3, 1, 0)$ lies on line ℓ_5 | 54 : $P_{689} = (0, 10, 1, 1)$ lies on line ℓ_{10} |
| 7 : $P_{107} = (8, 5, 1, 0)$ lies on line ℓ_6 | 55 : $P_{690} = (1, 10, 1, 1)$ lies on line ℓ_{11} |
| 8 : $P_{108} = (9, 5, 1, 0)$ lies on line ℓ_7 | 56 : $P_{705} = (0, 11, 1, 1)$ lies on line ℓ_{12} |
| 9 : $P_{161} = (14, 8, 1, 0)$ lies on line ℓ_8 | 57 : $P_{706} = (1, 11, 1, 1)$ lies on line ℓ_{13} |
| 10 : $P_{162} = (15, 8, 1, 0)$ lies on line ℓ_9 | 58 : $P_{771} = (2, 15, 1, 1)$ lies on line ℓ_{14} |
| 11 : $P_{179} = (0, 10, 1, 0)$ lies on line ℓ_{10} | 59 : $P_{772} = (3, 15, 1, 1)$ lies on line ℓ_{15} |
| 12 : $P_{180} = (1, 10, 1, 0)$ lies on line ℓ_{11} | 60 : $P_{817} = (0, 2, 2, 1)$ lies on line ℓ_2 |
| 13 : $P_{195} = (0, 11, 1, 0)$ lies on line ℓ_{12} | 61 : $P_{819} = (2, 2, 2, 1)$ lies on line ℓ_3 |
| 14 : $P_{196} = (1, 11, 1, 0)$ lies on line ℓ_{13} | 62 : $P_{889} = (8, 6, 2, 1)$ lies on line ℓ_4 |
| 15 : $P_{261} = (2, 15, 1, 0)$ lies on line ℓ_{14} | 63 : $P_{891} = (10, 6, 2, 1)$ lies on line ℓ_5 |
| 16 : $P_{262} = (3, 15, 1, 0)$ lies on line ℓ_{15} | 64 : $P_{901} = (4, 7, 2, 1)$ lies on line ℓ_{14} |
| 17 : $P_{275} = (1, 0, 0, 1)$ lies on line ℓ_0 | 65 : $P_{903} = (6, 7, 2, 1)$ lies on line ℓ_{15} |
| 18 : $P_{276} = (2, 0, 0, 1)$ lies on line ℓ_0 | 66 : $P_{934} = (5, 9, 2, 1)$ lies on line ℓ_8 |
| 19 : $P_{277} = (3, 0, 0, 1)$ lies on line ℓ_0 | 67 : $P_{936} = (7, 9, 2, 1)$ lies on line ℓ_9 |
| 20 : $P_{278} = (4, 0, 0, 1)$ lies on line ℓ_0 | 68 : $P_{954} = (9, 10, 2, 1)$ lies on line ℓ_6 |
| 21 : $P_{279} = (5, 0, 0, 1)$ lies on line ℓ_0 | 69 : $P_{956} = (11, 10, 2, 1)$ lies on line ℓ_7 |
| 22 : $P_{280} = (6, 0, 0, 1)$ lies on line ℓ_0 | 70 : $P_{993} = (0, 13, 2, 1)$ lies on line ℓ_{10} |
| 23 : $P_{281} = (7, 0, 0, 1)$ lies on line ℓ_0 | 71 : $P_{995} = (2, 13, 2, 1)$ lies on line ℓ_{11} |
| 24 : $P_{282} = (8, 0, 0, 1)$ lies on line ℓ_0 | 72 : $P_{1025} = (0, 15, 2, 1)$ lies on line ℓ_{12} |
| 25 : $P_{283} = (9, 0, 0, 1)$ lies on line ℓ_0 | 73 : $P_{1027} = (2, 15, 2, 1)$ lies on line ℓ_{13} |
| 26 : $P_{284} = (10, 0, 0, 1)$ lies on line ℓ_0 | 74 : $P_{1065} = (8, 1, 3, 1)$ lies on line ℓ_9 |
| 27 : $P_{285} = (11, 0, 0, 1)$ lies on line ℓ_0 | 75 : $P_{1068} = (11, 1, 3, 1)$ lies on line ℓ_8 |
| 28 : $P_{286} = (12, 0, 0, 1)$ lies on line ℓ_0 | 76 : $P_{1089} = (0, 3, 3, 1)$ lies on line ℓ_2 |
| 29 : $P_{287} = (13, 0, 0, 1)$ lies on line ℓ_0 | 77 : $P_{1092} = (3, 3, 3, 1)$ lies on line ℓ_3 |
| 30 : $P_{288} = (14, 0, 0, 1)$ lies on line ℓ_0 | 78 : $P_{1105} = (0, 4, 3, 1)$ lies on line ℓ_{12} |
| 31 : $P_{289} = (15, 0, 0, 1)$ lies on line ℓ_0 | 79 : $P_{1108} = (3, 4, 3, 1)$ lies on line ℓ_{13} |
| 32 : $P_{291} = (1, 1, 0, 1)$ lies on line ℓ_1 | 80 : $P_{1133} = (12, 5, 3, 1)$ lies on line ℓ_4 |
| 33 : $P_{308} = (2, 2, 0, 1)$ lies on line ℓ_1 | 81 : $P_{1136} = (15, 5, 3, 1)$ lies on line ℓ_5 |
| 34 : $P_{325} = (3, 3, 0, 1)$ lies on line ℓ_1 | 82 : $P_{1153} = (0, 7, 3, 1)$ lies on line ℓ_{10} |
| 35 : $P_{342} = (4, 4, 0, 1)$ lies on line ℓ_1 | 83 : $P_{1156} = (3, 7, 3, 1)$ lies on line ℓ_{11} |
| 36 : $P_{359} = (5, 5, 0, 1)$ lies on line ℓ_1 | 84 : $P_{1174} = (5, 8, 3, 1)$ lies on line ℓ_{15} |
| 37 : $P_{376} = (6, 6, 0, 1)$ lies on line ℓ_1 | 85 : $P_{1175} = (6, 8, 3, 1)$ lies on line ℓ_{14} |
| 38 : $P_{393} = (7, 7, 0, 1)$ lies on line ℓ_1 | 86 : $P_{1282} = (1, 15, 3, 1)$ lies on line ℓ_6 |
| 39 : $P_{410} = (8, 8, 0, 1)$ lies on line ℓ_1 | 87 : $P_{1283} = (2, 15, 3, 1)$ lies on line ℓ_7 |
| 40 : $P_{427} = (9, 9, 0, 1)$ lies on line ℓ_1 | 88 : $P_{1345} = (0, 3, 4, 1)$ lies on line ℓ_{10} |
| 41 : $P_{444} = (10, 10, 0, 1)$ lies on line ℓ_1 | 89 : $P_{1349} = (4, 3, 4, 1)$ lies on line ℓ_{11} |
| 42 : $P_{461} = (11, 11, 0, 1)$ lies on line ℓ_1 | 90 : $P_{1361} = (0, 4, 4, 1)$ lies on line ℓ_2 |
| 43 : $P_{478} = (12, 12, 0, 1)$ lies on line ℓ_1 | 91 : $P_{1365} = (4, 4, 4, 1)$ lies on line ℓ_3 |
| 44 : $P_{495} = (13, 13, 0, 1)$ lies on line ℓ_1 | 92 : $P_{1409} = (0, 7, 4, 1)$ lies on line ℓ_{12} |
| 45 : $P_{512} = (14, 14, 0, 1)$ lies on line ℓ_1 | 93 : $P_{1413} = (4, 7, 4, 1)$ lies on line ℓ_{13} |
| 46 : $P_{529} = (15, 15, 0, 1)$ lies on line ℓ_1 | 94 : $P_{1483} = (10, 11, 4, 1)$ lies on line ℓ_8 |
| 47 : $P_{546} = (0, 1, 1, 1)$ lies on line ℓ_2 | 95 : $P_{1487} = (14, 11, 4, 1)$ lies on line ℓ_9 |

96 : $P_{1498} = (9, 12, 4, 1)$ lies on line ℓ_4
 97 : $P_{1502} = (13, 12, 4, 1)$ lies on line ℓ_5
 98 : $P_{1516} = (11, 13, 4, 1)$ lies on line ℓ_6
 99 : $P_{1520} = (15, 13, 4, 1)$ lies on line ℓ_7
 100 : $P_{1529} = (8, 14, 4, 1)$ lies on line ℓ_{14}
 101 : $P_{1533} = (12, 14, 4, 1)$ lies on line ℓ_{15}
 102 : $P_{1579} = (10, 1, 5, 1)$ lies on line ℓ_{14}
 103 : $P_{1584} = (15, 1, 5, 1)$ lies on line ℓ_{15}
 104 : $P_{1602} = (1, 3, 5, 1)$ lies on line ℓ_9
 105 : $P_{1605} = (4, 3, 5, 1)$ lies on line ℓ_8
 106 : $P_{1633} = (0, 5, 5, 1)$ lies on line ℓ_2
 107 : $P_{1638} = (5, 5, 5, 1)$ lies on line ℓ_3
 108 : $P_{1684} = (3, 8, 5, 1)$ lies on line ℓ_6
 109 : $P_{1687} = (6, 8, 5, 1)$ lies on line ℓ_7
 110 : $P_{1697} = (0, 9, 5, 1)$ lies on line ℓ_{10}
 111 : $P_{1702} = (5, 9, 5, 1)$ lies on line ℓ_{11}
 112 : $P_{1745} = (0, 12, 5, 1)$ lies on line ℓ_{12}
 113 : $P_{1750} = (5, 12, 5, 1)$ lies on line ℓ_{13}
 114 : $P_{1801} = (8, 15, 5, 1)$ lies on line ℓ_5
 115 : $P_{1806} = (13, 15, 5, 1)$ lies on line ℓ_4
 116 : $P_{1850} = (9, 2, 6, 1)$ lies on line ℓ_9
 117 : $P_{1856} = (15, 2, 6, 1)$ lies on line ℓ_8
 118 : $P_{1905} = (0, 6, 6, 1)$ lies on line ℓ_2
 119 : $P_{1911} = (6, 6, 6, 1)$ lies on line ℓ_3
 120 : $P_{1923} = (2, 7, 6, 1)$ lies on line ℓ_6
 121 : $P_{1925} = (4, 7, 6, 1)$ lies on line ℓ_7
 122 : $P_{1937} = (0, 8, 6, 1)$ lies on line ℓ_{12}
 123 : $P_{1943} = (6, 8, 6, 1)$ lies on line ℓ_{13}
 124 : $P_{1963} = (10, 9, 6, 1)$ lies on line ℓ_{15}
 125 : $P_{1965} = (12, 9, 6, 1)$ lies on line ℓ_{14}
 126 : $P_{1970} = (1, 10, 6, 1)$ lies on line ℓ_4
 127 : $P_{1976} = (7, 10, 6, 1)$ lies on line ℓ_5
 128 : $P_{2033} = (0, 14, 6, 1)$ lies on line ℓ_{10}
 129 : $P_{2039} = (6, 14, 6, 1)$ lies on line ℓ_{11}
 130 : $P_{2107} = (10, 2, 7, 1)$ lies on line ℓ_6
 131 : $P_{2110} = (13, 2, 7, 1)$ lies on line ℓ_7
 132 : $P_{2113} = (0, 3, 7, 1)$ lies on line ℓ_{12}
 133 : $P_{2120} = (7, 3, 7, 1)$ lies on line ℓ_{13}
 134 : $P_{2129} = (0, 4, 7, 1)$ lies on line ℓ_{10}
 135 : $P_{2136} = (7, 4, 7, 1)$ lies on line ℓ_{11}
 136 : $P_{2170} = (9, 6, 7, 1)$ lies on line ℓ_{15}
 137 : $P_{2175} = (14, 6, 7, 1)$ lies on line ℓ_{14}
 138 : $P_{2177} = (0, 7, 7, 1)$ lies on line ℓ_2
 139 : $P_{2184} = (7, 7, 7, 1)$ lies on line ℓ_3
 140 : $P_{2211} = (2, 9, 7, 1)$ lies on line ℓ_5
 141 : $P_{2214} = (5, 9, 7, 1)$ lies on line ℓ_4
 142 : $P_{2226} = (1, 10, 7, 1)$ lies on line ℓ_8
 143 : $P_{2231} = (6, 10, 7, 1)$ lies on line ℓ_9
 144 : $P_{2340} = (3, 1, 8, 1)$ lies on line ℓ_5
 145 : $P_{2348} = (11, 1, 8, 1)$ lies on line ℓ_4
 146 : $P_{2376} = (7, 3, 8, 1)$ lies on line ℓ_7
 147 : $P_{2384} = (15, 3, 8, 1)$ lies on line ℓ_6
 148 : $P_{2402} = (1, 5, 8, 1)$ lies on line ℓ_{15}
 149 : $P_{2410} = (9, 5, 8, 1)$ lies on line ℓ_{14}
 150 : $P_{2417} = (0, 6, 8, 1)$ lies on line ℓ_{10}
 151 : $P_{2425} = (8, 6, 8, 1)$ lies on line ℓ_{11}
 152 : $P_{2449} = (0, 8, 8, 1)$ lies on line ℓ_2
 153 : $P_{2457} = (8, 8, 8, 1)$ lies on line ℓ_3
 154 : $P_{2545} = (0, 14, 8, 1)$ lies on line ℓ_{12}
 155 : $P_{2553} = (8, 14, 8, 1)$ lies on line ℓ_{13}
 156 : $P_{2566} = (5, 15, 8, 1)$ lies on line ℓ_9
 157 : $P_{2574} = (13, 15, 8, 1)$ lies on line ℓ_8
 158 : $P_{2615} = (6, 2, 9, 1)$ lies on line ℓ_5
 159 : $P_{2624} = (15, 2, 9, 1)$ lies on line ℓ_4
 160 : $P_{2657} = (0, 5, 9, 1)$ lies on line ℓ_{12}
 161 : $P_{2666} = (9, 5, 9, 1)$ lies on line ℓ_{13}
 162 : $P_{2680} = (7, 6, 9, 1)$ lies on line ℓ_6
 163 : $P_{2687} = (14, 6, 9, 1)$ lies on line ℓ_7
 164 : $P_{2692} = (3, 7, 9, 1)$ lies on line ℓ_8
 165 : $P_{2699} = (10, 7, 9, 1)$ lies on line ℓ_9
 166 : $P_{2721} = (0, 9, 9, 1)$ lies on line ℓ_2
 167 : $P_{2730} = (9, 9, 9, 1)$ lies on line ℓ_3
 168 : $P_{2739} = (2, 10, 9, 1)$ lies on line ℓ_{15}
 169 : $P_{2748} = (11, 10, 9, 1)$ lies on line ℓ_{14}
 170 : $P_{2769} = (0, 12, 9, 1)$ lies on line ℓ_{10}
 171 : $P_{2778} = (9, 12, 9, 1)$ lies on line ℓ_{11}
 172 : $P_{2849} = (0, 1, 10, 1)$ lies on line ℓ_{12}
 173 : $P_{2859} = (10, 1, 10, 1)$ lies on line ℓ_{13}
 174 : $P_{2872} = (7, 2, 10, 1)$ lies on line ℓ_{15}
 175 : $P_{2878} = (13, 2, 10, 1)$ lies on line ℓ_{14}
 176 : $P_{2931} = (2, 6, 10, 1)$ lies on line ℓ_9
 177 : $P_{2937} = (8, 6, 10, 1)$ lies on line ℓ_8
 178 : $P_{2948} = (3, 7, 10, 1)$ lies on line ℓ_4
 179 : $P_{2954} = (9, 7, 10, 1)$ lies on line ℓ_5
 180 : $P_{2983} = (6, 9, 10, 1)$ lies on line ℓ_6
 181 : $P_{2989} = (12, 9, 10, 1)$ lies on line ℓ_7
 182 : $P_{2993} = (0, 10, 10, 1)$ lies on line ℓ_2
 183 : $P_{3003} = (10, 10, 10, 1)$ lies on line ℓ_3
 184 : $P_{3009} = (0, 11, 10, 1)$ lies on line ℓ_{10}
 185 : $P_{3019} = (10, 11, 10, 1)$ lies on line ℓ_{11}
 186 : $P_{3105} = (0, 1, 11, 1)$ lies on line ℓ_{10}
 187 : $P_{3116} = (11, 1, 11, 1)$ lies on line ℓ_{11}
 188 : $P_{3160} = (7, 4, 11, 1)$ lies on line ℓ_4
 189 : $P_{3165} = (12, 4, 11, 1)$ lies on line ℓ_5
 190 : $P_{3249} = (0, 10, 11, 1)$ lies on line ℓ_{12}
 191 : $P_{3260} = (11, 10, 11, 1)$ lies on line ℓ_{13}
 192 : $P_{3265} = (0, 11, 11, 1)$ lies on line ℓ_2
 193 : $P_{3276} = (11, 11, 11, 1)$ lies on line ℓ_3
 194 : $P_{3286} = (5, 12, 11, 1)$ lies on line ℓ_7
 195 : $P_{3295} = (14, 12, 11, 1)$ lies on line ℓ_6
 196 : $P_{3301} = (4, 13, 11, 1)$ lies on line ℓ_{15}
 197 : $P_{3312} = (15, 13, 11, 1)$ lies on line ℓ_{14}
 198 : $P_{3319} = (6, 14, 11, 1)$ lies on line ℓ_8
 199 : $P_{3326} = (13, 14, 11, 1)$ lies on line ℓ_9
 200 : $P_{3416} = (7, 4, 12, 1)$ lies on line ℓ_8
 201 : $P_{3420} = (11, 4, 12, 1)$ lies on line ℓ_9
 202 : $P_{3425} = (0, 5, 12, 1)$ lies on line ℓ_{10}
 203 : $P_{3437} = (12, 5, 12, 1)$ lies on line ℓ_{11}

| | |
|---|---|
| 204 : $P_{3489} = (0, 9, 12, 1)$ lies on line ℓ_{12} | 231 : $P_{3967} = (14, 6, 14, 1)$ lies on line ℓ_{13} |
| 205 : $P_{3501} = (12, 9, 12, 1)$ lies on line ℓ_{13} | 232 : $P_{3985} = (0, 8, 14, 1)$ lies on line ℓ_{10} |
| 206 : $P_{3522} = (1, 11, 12, 1)$ lies on line ℓ_{14} | 233 : $P_{3999} = (14, 8, 14, 1)$ lies on line ℓ_{11} |
| 207 : $P_{3534} = (13, 11, 12, 1)$ lies on line ℓ_{15} | 234 : $P_{4037} = (4, 11, 14, 1)$ lies on line ℓ_5 |
| 208 : $P_{3537} = (0, 12, 12, 1)$ lies on line ℓ_2 | 235 : $P_{4043} = (10, 11, 14, 1)$ lies on line ℓ_4 |
| 209 : $P_{3549} = (12, 12, 12, 1)$ lies on line ℓ_3 | 236 : $P_{4054} = (5, 12, 14, 1)$ lies on line ℓ_{14} |
| 210 : $P_{3555} = (2, 13, 12, 1)$ lies on line ℓ_4 | 237 : $P_{4060} = (11, 12, 14, 1)$ lies on line ℓ_{15} |
| 211 : $P_{3567} = (14, 13, 12, 1)$ lies on line ℓ_5 | 238 : $P_{4067} = (2, 13, 14, 1)$ lies on line ℓ_8 |
| 212 : $P_{3573} = (4, 14, 12, 1)$ lies on line ℓ_6 | 239 : $P_{4077} = (12, 13, 14, 1)$ lies on line ℓ_9 |
| 213 : $P_{3577} = (8, 14, 12, 1)$ lies on line ℓ_7 | 240 : $P_{4081} = (0, 14, 14, 1)$ lies on line ℓ_2 |
| 214 : $P_{3633} = (0, 2, 13, 1)$ lies on line ℓ_{12} | 241 : $P_{4095} = (14, 14, 14, 1)$ lies on line ℓ_3 |
| 215 : $P_{3646} = (13, 2, 13, 1)$ lies on line ℓ_{13} | 242 : $P_{4134} = (5, 1, 15, 1)$ lies on line ℓ_6 |
| 216 : $P_{3668} = (3, 4, 13, 1)$ lies on line ℓ_{14} | 243 : $P_{4139} = (10, 1, 15, 1)$ lies on line ℓ_7 |
| 217 : $P_{3679} = (14, 4, 13, 1)$ lies on line ℓ_{15} | 244 : $P_{4145} = (0, 2, 15, 1)$ lies on line ℓ_{10} |
| 218 : $P_{3778} = (1, 11, 13, 1)$ lies on line ℓ_7 | 245 : $P_{4160} = (15, 2, 15, 1)$ lies on line ℓ_{11} |
| 219 : $P_{3789} = (12, 11, 13, 1)$ lies on line ℓ_6 | 246 : $P_{4168} = (7, 3, 15, 1)$ lies on line ℓ_{14} |
| 220 : $P_{3797} = (4, 12, 13, 1)$ lies on line ℓ_9 | 247 : $P_{4169} = (8, 3, 15, 1)$ lies on line ℓ_{15} |
| 221 : $P_{3802} = (9, 12, 13, 1)$ lies on line ℓ_8 | 248 : $P_{4196} = (3, 5, 15, 1)$ lies on line ℓ_9 |
| 222 : $P_{3809} = (0, 13, 13, 1)$ lies on line ℓ_2 | 249 : $P_{4205} = (12, 5, 15, 1)$ lies on line ℓ_8 |
| 223 : $P_{3822} = (13, 13, 13, 1)$ lies on line ℓ_3 | 250 : $P_{4242} = (1, 8, 15, 1)$ lies on line ℓ_5 |
| 224 : $P_{3831} = (6, 14, 13, 1)$ lies on line ℓ_4 | 251 : $P_{4255} = (14, 8, 15, 1)$ lies on line ℓ_4 |
| 225 : $P_{3836} = (11, 14, 13, 1)$ lies on line ℓ_5 | 252 : $P_{4321} = (0, 13, 15, 1)$ lies on line ℓ_{12} |
| 226 : $P_{3841} = (0, 15, 13, 1)$ lies on line ℓ_{10} | 253 : $P_{4336} = (15, 13, 15, 1)$ lies on line ℓ_{13} |
| 227 : $P_{3854} = (13, 15, 13, 1)$ lies on line ℓ_{11} | 254 : $P_{4353} = (0, 15, 15, 1)$ lies on line ℓ_2 |
| 228 : $P_{3924} = (3, 4, 14, 1)$ lies on line ℓ_7 | 255 : $P_{4368} = (15, 15, 15, 1)$ lies on line ℓ_3 |
| 229 : $P_{3934} = (13, 4, 14, 1)$ lies on line ℓ_6 | |
| 230 : $P_{3953} = (0, 6, 14, 1)$ lies on line ℓ_{12} | |

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 |
|----|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| 0 | 0 | 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 |
| 2 | 1 | 1 | 0 | 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 |
| 4 | 1 | 1 | 1 | 1 | 0 | 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 |
| 6 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 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 |
| 8 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 13 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 14 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 15 | 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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

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} |
| 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 |

The surface has 257 points:

The points on the surface are:

| | | |
|--------------------------------|--------------------------------|--------------------------------|
| 0 : $P_0 = (1, 0, 0, 0)$ | 14 : $P_{195} = (0, 11, 1, 0)$ | 28 : $P_{285} = (11, 0, 0, 1)$ |
| 1 : $P_3 = (0, 0, 0, 1)$ | 15 : $P_{196} = (1, 11, 1, 0)$ | 29 : $P_{286} = (12, 0, 0, 1)$ |
| 2 : $P_4 = (1, 1, 1, 1)$ | 16 : $P_{261} = (2, 15, 1, 0)$ | 30 : $P_{287} = (13, 0, 0, 1)$ |
| 3 : $P_5 = (1, 1, 0, 0)$ | 17 : $P_{262} = (3, 15, 1, 0)$ | 31 : $P_{288} = (14, 0, 0, 1)$ |
| 4 : $P_{35} = (0, 1, 1, 0)$ | 18 : $P_{275} = (1, 0, 0, 1)$ | 32 : $P_{289} = (15, 0, 0, 1)$ |
| 5 : $P_{36} = (1, 1, 1, 0)$ | 19 : $P_{276} = (2, 0, 0, 1)$ | 33 : $P_{291} = (1, 1, 0, 1)$ |
| 6 : $P_{71} = (4, 3, 1, 0)$ | 20 : $P_{277} = (3, 0, 0, 1)$ | 34 : $P_{308} = (2, 2, 0, 1)$ |
| 7 : $P_{72} = (5, 3, 1, 0)$ | 21 : $P_{278} = (4, 0, 0, 1)$ | 35 : $P_{325} = (3, 3, 0, 1)$ |
| 8 : $P_{107} = (8, 5, 1, 0)$ | 22 : $P_{279} = (5, 0, 0, 1)$ | 36 : $P_{342} = (4, 4, 0, 1)$ |
| 9 : $P_{108} = (9, 5, 1, 0)$ | 23 : $P_{280} = (6, 0, 0, 1)$ | 37 : $P_{359} = (5, 5, 0, 1)$ |
| 10 : $P_{161} = (14, 8, 1, 0)$ | 24 : $P_{281} = (7, 0, 0, 1)$ | 38 : $P_{376} = (6, 6, 0, 1)$ |
| 11 : $P_{162} = (15, 8, 1, 0)$ | 25 : $P_{282} = (8, 0, 0, 1)$ | 39 : $P_{393} = (7, 7, 0, 1)$ |
| 12 : $P_{179} = (0, 10, 1, 0)$ | 26 : $P_{283} = (9, 0, 0, 1)$ | 40 : $P_{410} = (8, 8, 0, 1)$ |
| 13 : $P_{180} = (1, 10, 1, 0)$ | 27 : $P_{284} = (10, 0, 0, 1)$ | 41 : $P_{427} = (9, 9, 0, 1)$ |

| | | |
|----------------------------------|-----------------------------------|------------------------------------|
| 42 : $P_{444} = (10, 10, 0, 1)$ | 96 : $P_{1487} = (14, 11, 4, 1)$ | 150 : $P_{2410} = (9, 5, 8, 1)$ |
| 43 : $P_{461} = (11, 11, 0, 1)$ | 97 : $P_{1498} = (9, 12, 4, 1)$ | 151 : $P_{2417} = (0, 6, 8, 1)$ |
| 44 : $P_{478} = (12, 12, 0, 1)$ | 98 : $P_{1502} = (13, 12, 4, 1)$ | 152 : $P_{2425} = (8, 6, 8, 1)$ |
| 45 : $P_{495} = (13, 13, 0, 1)$ | 99 : $P_{1516} = (11, 13, 4, 1)$ | 153 : $P_{2449} = (0, 8, 8, 1)$ |
| 46 : $P_{512} = (14, 14, 0, 1)$ | 100 : $P_{1520} = (15, 13, 4, 1)$ | 154 : $P_{2457} = (8, 8, 8, 1)$ |
| 47 : $P_{529} = (15, 15, 0, 1)$ | 101 : $P_{1529} = (8, 14, 4, 1)$ | 155 : $P_{2545} = (0, 14, 8, 1)$ |
| 48 : $P_{546} = (0, 1, 1, 1)$ | 102 : $P_{1533} = (12, 14, 4, 1)$ | 156 : $P_{2553} = (8, 14, 8, 1)$ |
| 49 : $P_{581} = (4, 3, 1, 1)$ | 103 : $P_{1579} = (10, 1, 5, 1)$ | 157 : $P_{2566} = (5, 15, 8, 1)$ |
| 50 : $P_{582} = (5, 3, 1, 1)$ | 104 : $P_{1584} = (15, 1, 5, 1)$ | 158 : $P_{2574} = (13, 15, 8, 1)$ |
| 51 : $P_{617} = (8, 5, 1, 1)$ | 105 : $P_{1602} = (1, 3, 5, 1)$ | 159 : $P_{2615} = (6, 2, 9, 1)$ |
| 52 : $P_{618} = (9, 5, 1, 1)$ | 106 : $P_{1605} = (4, 3, 5, 1)$ | 160 : $P_{2624} = (15, 2, 9, 1)$ |
| 53 : $P_{671} = (14, 8, 1, 1)$ | 107 : $P_{1633} = (0, 5, 5, 1)$ | 161 : $P_{2657} = (0, 5, 9, 1)$ |
| 54 : $P_{672} = (15, 8, 1, 1)$ | 108 : $P_{1638} = (5, 5, 5, 1)$ | 162 : $P_{2666} = (9, 5, 9, 1)$ |
| 55 : $P_{689} = (0, 10, 1, 1)$ | 109 : $P_{1684} = (3, 8, 5, 1)$ | 163 : $P_{2680} = (7, 6, 9, 1)$ |
| 56 : $P_{690} = (1, 10, 1, 1)$ | 110 : $P_{1687} = (6, 8, 5, 1)$ | 164 : $P_{2687} = (14, 6, 9, 1)$ |
| 57 : $P_{705} = (0, 11, 1, 1)$ | 111 : $P_{1697} = (0, 9, 5, 1)$ | 165 : $P_{2692} = (3, 7, 9, 1)$ |
| 58 : $P_{706} = (1, 11, 1, 1)$ | 112 : $P_{1702} = (5, 9, 5, 1)$ | 166 : $P_{2699} = (10, 7, 9, 1)$ |
| 59 : $P_{771} = (2, 15, 1, 1)$ | 113 : $P_{1745} = (0, 12, 5, 1)$ | 167 : $P_{2721} = (0, 9, 9, 1)$ |
| 60 : $P_{772} = (3, 15, 1, 1)$ | 114 : $P_{1750} = (5, 12, 5, 1)$ | 168 : $P_{2730} = (9, 9, 9, 1)$ |
| 61 : $P_{817} = (0, 2, 2, 1)$ | 115 : $P_{1801} = (8, 15, 5, 1)$ | 169 : $P_{2739} = (2, 10, 9, 1)$ |
| 62 : $P_{819} = (2, 2, 2, 1)$ | 116 : $P_{1806} = (13, 15, 5, 1)$ | 170 : $P_{2748} = (11, 10, 9, 1)$ |
| 63 : $P_{889} = (8, 6, 2, 1)$ | 117 : $P_{1850} = (9, 2, 6, 1)$ | 171 : $P_{2769} = (0, 12, 9, 1)$ |
| 64 : $P_{891} = (10, 6, 2, 1)$ | 118 : $P_{1856} = (15, 2, 6, 1)$ | 172 : $P_{2778} = (9, 12, 9, 1)$ |
| 65 : $P_{901} = (4, 7, 2, 1)$ | 119 : $P_{1905} = (0, 6, 6, 1)$ | 173 : $P_{2849} = (0, 1, 10, 1)$ |
| 66 : $P_{903} = (6, 7, 2, 1)$ | 120 : $P_{1911} = (6, 6, 6, 1)$ | 174 : $P_{2859} = (10, 1, 10, 1)$ |
| 67 : $P_{934} = (5, 9, 2, 1)$ | 121 : $P_{1923} = (2, 7, 6, 1)$ | 175 : $P_{2872} = (7, 2, 10, 1)$ |
| 68 : $P_{936} = (7, 9, 2, 1)$ | 122 : $P_{1925} = (4, 7, 6, 1)$ | 176 : $P_{2878} = (13, 2, 10, 1)$ |
| 69 : $P_{954} = (9, 10, 2, 1)$ | 123 : $P_{1937} = (0, 8, 6, 1)$ | 177 : $P_{2931} = (2, 6, 10, 1)$ |
| 70 : $P_{956} = (11, 10, 2, 1)$ | 124 : $P_{1943} = (6, 8, 6, 1)$ | 178 : $P_{2937} = (8, 6, 10, 1)$ |
| 71 : $P_{993} = (0, 13, 2, 1)$ | 125 : $P_{1963} = (10, 9, 6, 1)$ | 179 : $P_{2948} = (3, 7, 10, 1)$ |
| 72 : $P_{995} = (2, 13, 2, 1)$ | 126 : $P_{1965} = (12, 9, 6, 1)$ | 180 : $P_{2954} = (9, 7, 10, 1)$ |
| 73 : $P_{1025} = (0, 15, 2, 1)$ | 127 : $P_{1970} = (1, 10, 6, 1)$ | 181 : $P_{2983} = (6, 9, 10, 1)$ |
| 74 : $P_{1027} = (2, 15, 2, 1)$ | 128 : $P_{1976} = (7, 10, 6, 1)$ | 182 : $P_{2989} = (12, 9, 10, 1)$ |
| 75 : $P_{1065} = (8, 1, 3, 1)$ | 129 : $P_{2033} = (0, 14, 6, 1)$ | 183 : $P_{2993} = (0, 10, 10, 1)$ |
| 76 : $P_{1068} = (11, 1, 3, 1)$ | 130 : $P_{2039} = (6, 14, 6, 1)$ | 184 : $P_{3003} = (10, 10, 10, 1)$ |
| 77 : $P_{1089} = (0, 3, 3, 1)$ | 131 : $P_{2107} = (10, 2, 7, 1)$ | 185 : $P_{3009} = (0, 11, 10, 1)$ |
| 78 : $P_{1092} = (3, 3, 3, 1)$ | 132 : $P_{2110} = (13, 2, 7, 1)$ | 186 : $P_{3019} = (10, 11, 10, 1)$ |
| 79 : $P_{1105} = (0, 4, 3, 1)$ | 133 : $P_{2113} = (0, 3, 7, 1)$ | 187 : $P_{3105} = (0, 1, 11, 1)$ |
| 80 : $P_{1108} = (3, 4, 3, 1)$ | 134 : $P_{2120} = (7, 3, 7, 1)$ | 188 : $P_{3116} = (11, 1, 11, 1)$ |
| 81 : $P_{1133} = (12, 5, 3, 1)$ | 135 : $P_{2129} = (0, 4, 7, 1)$ | 189 : $P_{3160} = (7, 4, 11, 1)$ |
| 82 : $P_{1136} = (15, 5, 3, 1)$ | 136 : $P_{2136} = (7, 4, 7, 1)$ | 190 : $P_{3165} = (12, 4, 11, 1)$ |
| 83 : $P_{1153} = (0, 7, 3, 1)$ | 137 : $P_{2170} = (9, 6, 7, 1)$ | 191 : $P_{3249} = (0, 10, 11, 1)$ |
| 84 : $P_{1156} = (3, 7, 3, 1)$ | 138 : $P_{2175} = (14, 6, 7, 1)$ | 192 : $P_{3260} = (11, 10, 11, 1)$ |
| 85 : $P_{1174} = (5, 8, 3, 1)$ | 139 : $P_{2177} = (0, 7, 7, 1)$ | 193 : $P_{3265} = (0, 11, 11, 1)$ |
| 86 : $P_{1175} = (6, 8, 3, 1)$ | 140 : $P_{2184} = (7, 7, 7, 1)$ | 194 : $P_{3276} = (11, 11, 11, 1)$ |
| 87 : $P_{1282} = (1, 15, 3, 1)$ | 141 : $P_{2211} = (2, 9, 7, 1)$ | 195 : $P_{3286} = (5, 12, 11, 1)$ |
| 88 : $P_{1283} = (2, 15, 3, 1)$ | 142 : $P_{2214} = (5, 9, 7, 1)$ | 196 : $P_{3295} = (14, 12, 11, 1)$ |
| 89 : $P_{1345} = (0, 3, 4, 1)$ | 143 : $P_{2226} = (1, 10, 7, 1)$ | 197 : $P_{3301} = (4, 13, 11, 1)$ |
| 90 : $P_{1349} = (4, 3, 4, 1)$ | 144 : $P_{2231} = (6, 10, 7, 1)$ | 198 : $P_{3312} = (15, 13, 11, 1)$ |
| 91 : $P_{1361} = (0, 4, 4, 1)$ | 145 : $P_{2340} = (3, 1, 8, 1)$ | 199 : $P_{3319} = (6, 14, 11, 1)$ |
| 92 : $P_{1365} = (4, 4, 4, 1)$ | 146 : $P_{2348} = (11, 1, 8, 1)$ | 200 : $P_{3326} = (13, 14, 11, 1)$ |
| 93 : $P_{1409} = (0, 7, 4, 1)$ | 147 : $P_{2376} = (7, 3, 8, 1)$ | 201 : $P_{3416} = (7, 4, 12, 1)$ |
| 94 : $P_{1413} = (4, 7, 4, 1)$ | 148 : $P_{2384} = (15, 3, 8, 1)$ | 202 : $P_{3420} = (11, 4, 12, 1)$ |
| 95 : $P_{1483} = (10, 11, 4, 1)$ | 149 : $P_{2402} = (1, 5, 8, 1)$ | 203 : $P_{3425} = (0, 5, 12, 1)$ |

| | | |
|------------------------------------|------------------------------------|------------------------------------|
| 204 : $P_{3437} = (12, 5, 12, 1)$ | 222 : $P_{3802} = (9, 12, 13, 1)$ | 240 : $P_{4077} = (12, 13, 14, 1)$ |
| 205 : $P_{3489} = (0, 9, 12, 1)$ | 223 : $P_{3809} = (0, 13, 13, 1)$ | 241 : $P_{4081} = (0, 14, 14, 1)$ |
| 206 : $P_{3501} = (12, 9, 12, 1)$ | 224 : $P_{3822} = (13, 13, 13, 1)$ | 242 : $P_{4095} = (14, 14, 14, 1)$ |
| 207 : $P_{3522} = (1, 11, 12, 1)$ | 225 : $P_{3831} = (6, 14, 13, 1)$ | 243 : $P_{4134} = (5, 1, 15, 1)$ |
| 208 : $P_{3534} = (13, 11, 12, 1)$ | 226 : $P_{3836} = (11, 14, 13, 1)$ | 244 : $P_{4139} = (10, 1, 15, 1)$ |
| 209 : $P_{3537} = (0, 12, 12, 1)$ | 227 : $P_{3841} = (0, 15, 13, 1)$ | 245 : $P_{4145} = (0, 2, 15, 1)$ |
| 210 : $P_{3549} = (12, 12, 12, 1)$ | 228 : $P_{3854} = (13, 15, 13, 1)$ | 246 : $P_{4160} = (15, 2, 15, 1)$ |
| 211 : $P_{3555} = (2, 13, 12, 1)$ | 229 : $P_{3924} = (3, 4, 14, 1)$ | 247 : $P_{4168} = (7, 3, 15, 1)$ |
| 212 : $P_{3567} = (14, 13, 12, 1)$ | 230 : $P_{3934} = (13, 4, 14, 1)$ | 248 : $P_{4169} = (8, 3, 15, 1)$ |
| 213 : $P_{3573} = (4, 14, 12, 1)$ | 231 : $P_{3953} = (0, 6, 14, 1)$ | 249 : $P_{4196} = (3, 5, 15, 1)$ |
| 214 : $P_{3577} = (8, 14, 12, 1)$ | 232 : $P_{3967} = (14, 6, 14, 1)$ | 250 : $P_{4205} = (12, 5, 15, 1)$ |
| 215 : $P_{3633} = (0, 2, 13, 1)$ | 233 : $P_{3985} = (0, 8, 14, 1)$ | 251 : $P_{4242} = (1, 8, 15, 1)$ |
| 216 : $P_{3646} = (13, 2, 13, 1)$ | 234 : $P_{3999} = (14, 8, 14, 1)$ | 252 : $P_{4255} = (14, 8, 15, 1)$ |
| 217 : $P_{3668} = (3, 4, 13, 1)$ | 235 : $P_{4037} = (4, 11, 14, 1)$ | 253 : $P_{4321} = (0, 13, 15, 1)$ |
| 218 : $P_{3679} = (14, 4, 13, 1)$ | 236 : $P_{4043} = (10, 11, 14, 1)$ | 254 : $P_{4336} = (15, 13, 15, 1)$ |
| 219 : $P_{3778} = (1, 11, 13, 1)$ | 237 : $P_{4054} = (5, 12, 14, 1)$ | 255 : $P_{4353} = (0, 15, 15, 1)$ |
| 220 : $P_{3789} = (12, 11, 13, 1)$ | 238 : $P_{4060} = (11, 12, 14, 1)$ | 256 : $P_{4368} = (15, 15, 15, 1)$ |
| 221 : $P_{3797} = (4, 12, 13, 1)$ | 239 : $P_{4067} = (2, 13, 14, 1)$ | |