

Rank-74275 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(16) is 287379733

General information

Number of lines	6
Number of points	305
Number of singular points	1
Number of Eckardt points	0
Number of double points	4
Number of single points	90
Number of points off lines	210
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^6
Type of lines on points	$4, 2^4, 1^{90}, 0^{210}$

Singular Points

The surface has 1 singular points:

$$0 : P_2 = \mathbf{P}(0, 0, 1, 0) = \mathbf{P}(0, 0, 1, 0)$$

The 6 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \mathbf{Pl}(1, 0, 0, 0, 0, 0)_0$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{529} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{529} = \mathbf{PI}(0, 0, 1, 0, 0, 1)_{4656} \\
\ell_2 &= \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{69888} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{69888} = \mathbf{PI}(0, 0, 0, 0, 0, 1)_{4625} \\
\ell_3 &= \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \mathbf{PI}(0, 1, 0, 0, 0, 0)_1 \\
\ell_4 &= \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4897} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4897} = \mathbf{PI}(0, 1, 1, 0, 0, 1)_{4672} \\
\ell_5 &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{4642} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{4642} = \mathbf{PI}(1, 1, 1, 1, 0, 1)_{5586}
\end{aligned}$$

Rank of lines: (0, 529, 69888, 70160, 4897, 4642)

Rank of points on Klein quadric: (0, 4656, 4625, 1, 4672, 5586)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 4 Double points:

The double points on the surface are:

$$P_5 = (1, 1, 0, 0) = \ell_0 \cap \ell_1$$

$$P_1 = (0, 1, 0, 0) = \ell_0 \cap \ell_2$$

$$P_{35} = (0, 1, 1, 0) = \ell_2 \cap \ell_5$$

$$P_{291} = (1, 1, 0, 1) = \ell_4 \cap \ell_5$$

Single Points

The surface has 90 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 : $P_4 = (1, 1, 1, 1)$ lies on line ℓ_4

3 : $P_6 = (2, 1, 0, 0)$ lies on line ℓ_0

4 : $P_7 = (3, 1, 0, 0)$ lies on line ℓ_0

5 : $P_8 = (4, 1, 0, 0)$ lies on line ℓ_0

6 : $P_9 = (5, 1, 0, 0)$ lies on line ℓ_0

7 : $P_{10} = (6, 1, 0, 0)$ lies on line ℓ_0

8 : $P_{11} = (7, 1, 0, 0)$ lies on line ℓ_0

9 : $P_{12} = (8, 1, 0, 0)$ lies on line ℓ_0

10 : $P_{13} = (9, 1, 0, 0)$ lies on line ℓ_0

11 : $P_{14} = (10, 1, 0, 0)$ lies on line ℓ_0

12 : $P_{15} = (11, 1, 0, 0)$ lies on line ℓ_0

13 : $P_{16} = (12, 1, 0, 0)$ lies on line ℓ_0

14 : $P_{17} = (13, 1, 0, 0)$ lies on line ℓ_0

15 : $P_{18} = (14, 1, 0, 0)$ lies on line ℓ_0

16 : $P_{19} = (15, 1, 0, 0)$ lies on line ℓ_0

17 : $P_{36} = (1, 1, 1, 0)$ lies on line ℓ_1

18 : $P_{51} = (0, 2, 1, 0)$ lies on line ℓ_2

19 : $P_{53} = (2, 2, 1, 0)$ lies on line ℓ_1

20 : $P_{67} = (0, 3, 1, 0)$ lies on line ℓ_2

21 : $P_{70} = (3, 3, 1, 0)$ lies on line ℓ_1

22 : $P_{83} = (0, 4, 1, 0)$ lies on line ℓ_2

23 : $P_{87} = (4, 4, 1, 0)$ lies on line ℓ_1

24 : $P_{99} = (0, 5, 1, 0)$ lies on line ℓ_2

25 : $P_{104} = (5, 5, 1, 0)$ lies on line ℓ_1

26 : $P_{115} = (0, 6, 1, 0)$ lies on line ℓ_2

27 : $P_{121} = (6, 6, 1, 0)$ lies on line ℓ_1

28 : $P_{131} = (0, 7, 1, 0)$ lies on line ℓ_2

29 : $P_{138} = (7, 7, 1, 0)$ lies on line ℓ_1

30 : $P_{147} = (0, 8, 1, 0)$ lies on line ℓ_2

31 : $P_{155} = (8, 8, 1, 0)$ lies on line ℓ_1

32 : $P_{163} = (0, 9, 1, 0)$ lies on line ℓ_2

33 : $P_{172} = (9, 9, 1, 0)$ lies on line ℓ_1

- 34 : $P_{179} = (0, 10, 1, 0)$ lies on line ℓ_2
 35 : $P_{189} = (10, 10, 1, 0)$ lies on line ℓ_1
 36 : $P_{195} = (0, 11, 1, 0)$ lies on line ℓ_2
 37 : $P_{206} = (11, 11, 1, 0)$ lies on line ℓ_1
 38 : $P_{211} = (0, 12, 1, 0)$ lies on line ℓ_2
 39 : $P_{223} = (12, 12, 1, 0)$ lies on line ℓ_1
 40 : $P_{227} = (0, 13, 1, 0)$ lies on line ℓ_2
 41 : $P_{240} = (13, 13, 1, 0)$ lies on line ℓ_1
 42 : $P_{243} = (0, 14, 1, 0)$ lies on line ℓ_2
 43 : $P_{257} = (14, 14, 1, 0)$ lies on line ℓ_1
 44 : $P_{259} = (0, 15, 1, 0)$ lies on line ℓ_2
 45 : $P_{274} = (15, 15, 1, 0)$ lies on line ℓ_1
 46 : $P_{530} = (0, 0, 1, 1)$ lies on line ℓ_3
 47 : $P_{531} = (1, 0, 1, 1)$ lies on line ℓ_5
 48 : $P_{785} = (0, 0, 2, 1)$ lies on line ℓ_3
 49 : $P_{802} = (1, 1, 2, 1)$ lies on line ℓ_4
 50 : $P_{834} = (1, 3, 2, 1)$ lies on line ℓ_5
 51 : $P_{1041} = (0, 0, 3, 1)$ lies on line ℓ_3
 52 : $P_{1058} = (1, 1, 3, 1)$ lies on line ℓ_4
 53 : $P_{1074} = (1, 2, 3, 1)$ lies on line ℓ_5
 54 : $P_{1297} = (0, 0, 4, 1)$ lies on line ℓ_3
 55 : $P_{1314} = (1, 1, 4, 1)$ lies on line ℓ_4
 56 : $P_{1378} = (1, 5, 4, 1)$ lies on line ℓ_5
 57 : $P_{1553} = (0, 0, 5, 1)$ lies on line ℓ_3
 58 : $P_{1570} = (1, 1, 5, 1)$ lies on line ℓ_4
 59 : $P_{1618} = (1, 4, 5, 1)$ lies on line ℓ_5
 60 : $P_{1809} = (0, 0, 6, 1)$ lies on line ℓ_3
 61 : $P_{1826} = (1, 1, 6, 1)$ lies on line ℓ_4
 62 : $P_{1922} = (1, 7, 6, 1)$ lies on line ℓ_5
 63 : $P_{2065} = (0, 0, 7, 1)$ lies on line ℓ_3
 64 : $P_{2082} = (1, 1, 7, 1)$ lies on line ℓ_4
 65 : $P_{2162} = (1, 6, 7, 1)$ lies on line ℓ_5
 66 : $P_{2321} = (0, 0, 8, 1)$ lies on line ℓ_3
 67 : $P_{2338} = (1, 1, 8, 1)$ lies on line ℓ_4
 68 : $P_{2466} = (1, 9, 8, 1)$ lies on line ℓ_5
 69 : $P_{2577} = (0, 0, 9, 1)$ lies on line ℓ_3
 70 : $P_{2594} = (1, 1, 9, 1)$ lies on line ℓ_4
 71 : $P_{2706} = (1, 8, 9, 1)$ lies on line ℓ_5
 72 : $P_{2833} = (0, 0, 10, 1)$ lies on line ℓ_3
 73 : $P_{2850} = (1, 1, 10, 1)$ lies on line ℓ_4
 74 : $P_{3010} = (1, 11, 10, 1)$ lies on line ℓ_5
 75 : $P_{3089} = (0, 0, 11, 1)$ lies on line ℓ_3
 76 : $P_{3106} = (1, 1, 11, 1)$ lies on line ℓ_4
 77 : $P_{3250} = (1, 10, 11, 1)$ lies on line ℓ_5
 78 : $P_{3345} = (0, 0, 12, 1)$ lies on line ℓ_3
 79 : $P_{3362} = (1, 1, 12, 1)$ lies on line ℓ_4
 80 : $P_{3554} = (1, 13, 12, 1)$ lies on line ℓ_5
 81 : $P_{3601} = (0, 0, 13, 1)$ lies on line ℓ_3
 82 : $P_{3618} = (1, 1, 13, 1)$ lies on line ℓ_4
 83 : $P_{3794} = (1, 12, 13, 1)$ lies on line ℓ_5
 84 : $P_{3857} = (0, 0, 14, 1)$ lies on line ℓ_3
 85 : $P_{3874} = (1, 1, 14, 1)$ lies on line ℓ_4
 86 : $P_{4098} = (1, 15, 14, 1)$ lies on line ℓ_5
 87 : $P_{4113} = (0, 0, 15, 1)$ lies on line ℓ_3
 88 : $P_{4130} = (1, 1, 15, 1)$ lies on line ℓ_4
 89 : $P_{4338} = (1, 14, 15, 1)$ lies on line ℓ_5

The single points on the surface are:

Points on surface but on no line

The surface has 210 points not on any line:

The points on the surface but not on lines are:

- 0 : $P_{310} = (4, 2, 0, 1)$
 1 : $P_{327} = (5, 3, 0, 1)$
 2 : $P_{347} = (9, 4, 0, 1)$
 3 : $P_{362} = (8, 5, 0, 1)$
 4 : $P_{383} = (13, 6, 0, 1)$
 5 : $P_{398} = (12, 7, 0, 1)$
 6 : $P_{417} = (15, 8, 0, 1)$
 7 : $P_{432} = (14, 9, 0, 1)$
 8 : $P_{445} = (11, 10, 0, 1)$
 9 : $P_{460} = (10, 11, 0, 1)$
 10 : $P_{472} = (6, 12, 0, 1)$
 11 : $P_{489} = (7, 13, 0, 1)$
 12 : $P_{500} = (2, 14, 0, 1)$
 13 : $P_{517} = (3, 15, 0, 1)$
 14 : $P_{586} = (9, 3, 1, 1)$
 15 : $P_{588} = (11, 3, 1, 1)$
 16 : $P_{619} = (10, 5, 1, 1)$
 17 : $P_{623} = (14, 5, 1, 1)$
 18 : $P_{659} = (2, 8, 1, 1)$
 19 : $P_{668} = (11, 8, 1, 1)$
 20 : $P_{691} = (2, 10, 1, 1)$
 21 : $P_{698} = (9, 10, 1, 1)$
 22 : $P_{709} = (4, 11, 1, 1)$
 23 : $P_{719} = (14, 11, 1, 1)$
 24 : $P_{773} = (4, 15, 1, 1)$
 25 : $P_{779} = (10, 15, 1, 1)$
 26 : $P_{797} = (12, 0, 2, 1)$
 27 : $P_{813} = (12, 1, 2, 1)$
 28 : $P_{823} = (6, 2, 2, 1)$
 29 : $P_{825} = (8, 2, 2, 1)$

30 : $P_{847} = (14, 3, 2, 1)$	84 : $P_{1915} = (10, 6, 6, 1)$
31 : $P_{885} = (4, 6, 2, 1)$	85 : $P_{1923} = (2, 7, 6, 1)$
32 : $P_{895} = (14, 6, 2, 1)$	86 : $P_{1943} = (6, 8, 6, 1)$
33 : $P_{969} = (8, 11, 2, 1)$	87 : $P_{1947} = (10, 8, 6, 1)$
34 : $P_{976} = (15, 11, 2, 1)$	88 : $P_{1987} = (2, 11, 6, 1)$
35 : $P_{992} = (15, 12, 2, 1)$	89 : $P_{1998} = (13, 11, 6, 1)$
36 : $P_{1013} = (4, 14, 2, 1)$	90 : $P_{2040} = (7, 14, 6, 1)$
37 : $P_{1015} = (6, 14, 2, 1)$	91 : $P_{2046} = (13, 14, 6, 1)$
38 : $P_{1049} = (8, 0, 3, 1)$	92 : $P_{2079} = (14, 0, 7, 1)$
39 : $P_{1065} = (8, 1, 3, 1)$	93 : $P_{2095} = (14, 1, 7, 1)$
40 : $P_{1084} = (11, 2, 3, 1)$	94 : $P_{2120} = (7, 3, 7, 1)$
41 : $P_{1125} = (4, 5, 3, 1)$	95 : $P_{2123} = (10, 3, 7, 1)$
42 : $P_{1130} = (9, 5, 3, 1)$	96 : $P_{2135} = (6, 4, 7, 1)$
43 : $P_{1142} = (5, 6, 3, 1)$	97 : $P_{2141} = (12, 4, 7, 1)$
44 : $P_{1148} = (11, 6, 3, 1)$	98 : $P_{2170} = (9, 6, 7, 1)$
45 : $P_{1159} = (6, 7, 3, 1)$	99 : $P_{2180} = (3, 7, 7, 1)$
46 : $P_{1162} = (9, 7, 3, 1)$	100 : $P_{2187} = (10, 7, 7, 1)$
47 : $P_{1172} = (3, 8, 3, 1)$	101 : $P_{2250} = (9, 11, 7, 1)$
48 : $P_{1189} = (4, 9, 3, 1)$	102 : $P_{2253} = (12, 11, 7, 1)$
49 : $P_{1190} = (5, 9, 3, 1)$	103 : $P_{2292} = (3, 14, 7, 1)$
50 : $P_{1252} = (3, 13, 3, 1)$	104 : $P_{2311} = (6, 15, 7, 1)$
51 : $P_{1255} = (6, 13, 3, 1)$	105 : $P_{2312} = (7, 15, 7, 1)$
52 : $P_{1303} = (6, 0, 4, 1)$	106 : $P_{2324} = (3, 0, 8, 1)$
53 : $P_{1319} = (6, 1, 4, 1)$	107 : $P_{2340} = (3, 1, 8, 1)$
54 : $P_{1338} = (9, 2, 4, 1)$	108 : $P_{2367} = (14, 2, 8, 1)$
55 : $P_{1342} = (13, 2, 4, 1)$	109 : $P_{2368} = (15, 2, 8, 1)$
56 : $P_{1374} = (13, 4, 4, 1)$	110 : $P_{2377} = (8, 3, 8, 1)$
57 : $P_{1376} = (15, 4, 4, 1)$	111 : $P_{2419} = (2, 6, 8, 1)$
58 : $P_{1379} = (2, 5, 4, 1)$	112 : $P_{2424} = (7, 6, 8, 1)$
59 : $P_{1396} = (3, 6, 4, 1)$	113 : $P_{2444} = (11, 7, 8, 1)$
60 : $P_{1460} = (3, 10, 4, 1)$	114 : $P_{2448} = (15, 7, 8, 1)$
61 : $P_{1472} = (15, 10, 4, 1)$	115 : $P_{2476} = (11, 9, 8, 1)$
62 : $P_{1507} = (2, 13, 4, 1)$	116 : $P_{2520} = (7, 12, 8, 1)$
63 : $P_{1514} = (9, 13, 4, 1)$	117 : $P_{2521} = (8, 12, 8, 1)$
64 : $P_{1568} = (15, 0, 5, 1)$	118 : $P_{2563} = (2, 15, 8, 1)$
65 : $P_{1584} = (15, 1, 5, 1)$	119 : $P_{2575} = (14, 15, 8, 1)$
66 : $P_{1627} = (10, 4, 5, 1)$	120 : $P_{2590} = (13, 0, 9, 1)$
67 : $P_{1670} = (5, 7, 5, 1)$	121 : $P_{2606} = (13, 1, 9, 1)$
68 : $P_{1678} = (13, 7, 5, 1)$	122 : $P_{2648} = (7, 4, 9, 1)$
69 : $P_{1690} = (9, 8, 5, 1)$	123 : $P_{2655} = (14, 4, 9, 1)$
70 : $P_{1695} = (14, 8, 5, 1)$	124 : $P_{2693} = (4, 7, 9, 1)$
71 : $P_{1758} = (13, 12, 5, 1)$	125 : $P_{2703} = (14, 7, 9, 1)$
72 : $P_{1759} = (14, 12, 5, 1)$	126 : $P_{2709} = (4, 8, 9, 1)$
73 : $P_{1769} = (8, 13, 5, 1)$	127 : $P_{2724} = (3, 9, 9, 1)$
74 : $P_{1771} = (10, 13, 5, 1)$	128 : $P_{2728} = (7, 9, 9, 1)$
75 : $P_{1785} = (8, 14, 5, 1)$	129 : $P_{2756} = (3, 11, 9, 1)$
76 : $P_{1786} = (9, 14, 5, 1)$	130 : $P_{2758} = (5, 11, 9, 1)$
77 : $P_{1798} = (5, 15, 5, 1)$	131 : $P_{2790} = (5, 13, 9, 1)$
78 : $P_{1813} = (4, 0, 6, 1)$	132 : $P_{2844} = (11, 0, 10, 1)$
79 : $P_{1829} = (4, 1, 6, 1)$	133 : $P_{2860} = (11, 1, 10, 1)$
80 : $P_{1881} = (8, 4, 6, 1)$	134 : $P_{2868} = (3, 2, 10, 1)$
81 : $P_{1895} = (6, 5, 6, 1)$	135 : $P_{2875} = (10, 2, 10, 1)$
82 : $P_{1896} = (7, 5, 6, 1)$	136 : $P_{2916} = (3, 5, 10, 1)$
83 : $P_{1913} = (8, 6, 6, 1)$	137 : $P_{2926} = (13, 5, 10, 1)$

138 : $P_{2985} = (8, 9, 10, 1)$
 139 : $P_{2987} = (10, 9, 10, 1)$
 140 : $P_{3005} = (12, 10, 10, 1)$
 141 : $P_{3006} = (13, 10, 10, 1)$
 142 : $P_{3081} = (8, 15, 10, 1)$
 143 : $P_{3085} = (12, 15, 10, 1)$
 144 : $P_{3099} = (10, 0, 11, 1)$
 145 : $P_{3115} = (10, 1, 11, 1)$
 146 : $P_{3143} = (6, 3, 11, 1)$
 147 : $P_{3152} = (15, 3, 11, 1)$
 148 : $P_{3158} = (5, 4, 11, 1)$
 149 : $P_{3164} = (11, 4, 11, 1)$
 150 : $P_{3222} = (5, 8, 11, 1)$
 151 : $P_{3224} = (7, 8, 11, 1)$
 152 : $P_{3271} = (6, 11, 11, 1)$
 153 : $P_{3272} = (7, 11, 11, 1)$
 154 : $P_{3324} = (11, 14, 11, 1)$
 155 : $P_{3328} = (15, 14, 11, 1)$
 156 : $P_{3347} = (2, 0, 12, 1)$
 157 : $P_{3363} = (2, 1, 12, 1)$
 158 : $P_{3382} = (5, 2, 12, 1)$
 159 : $P_{3405} = (12, 3, 12, 1)$
 160 : $P_{3406} = (13, 3, 12, 1)$
 161 : $P_{3436} = (11, 5, 12, 1)$
 162 : $P_{3437} = (12, 5, 12, 1)$
 163 : $P_{3495} = (6, 9, 12, 1)$
 164 : $P_{3502} = (13, 9, 12, 1)$
 165 : $P_{3511} = (6, 10, 12, 1)$
 166 : $P_{3519} = (14, 10, 12, 1)$
 167 : $P_{3542} = (5, 12, 12, 1)$
 168 : $P_{3548} = (11, 12, 12, 1)$
 169 : $P_{3567} = (14, 13, 12, 1)$
 170 : $P_{3610} = (9, 0, 13, 1)$
 171 : $P_{3626} = (9, 1, 13, 1)$
 172 : $P_{3640} = (7, 2, 13, 1)$
 173 : $P_{3645} = (12, 2, 13, 1)$
 174 : $P_{3741} = (12, 8, 13, 1)$
 175 : $P_{3742} = (13, 8, 13, 1)$
 176 : $P_{3760} = (15, 9, 13, 1)$
 177 : $P_{3765} = (4, 10, 13, 1)$
 178 : $P_{3768} = (7, 10, 13, 1)$
 179 : $P_{3797} = (4, 12, 13, 1)$
 180 : $P_{3820} = (11, 13, 13, 1)$
 181 : $P_{3824} = (15, 13, 13, 1)$
 182 : $P_{3852} = (11, 15, 13, 1)$
 183 : $P_{3854} = (13, 15, 13, 1)$
 184 : $P_{3864} = (7, 0, 14, 1)$
 185 : $P_{3880} = (7, 1, 14, 1)$
 186 : $P_{3977} = (8, 7, 14, 1)$
 187 : $P_{4003} = (2, 9, 14, 1)$
 188 : $P_{4013} = (12, 9, 14, 1)$
 189 : $P_{4022} = (5, 10, 14, 1)$
 190 : $P_{4025} = (8, 10, 14, 1)$
 191 : $P_{4051} = (2, 12, 14, 1)$
 192 : $P_{4058} = (9, 12, 14, 1)$
 193 : $P_{4086} = (5, 14, 14, 1)$
 194 : $P_{4093} = (12, 14, 14, 1)$
 195 : $P_{4106} = (9, 15, 14, 1)$
 196 : $P_{4118} = (5, 0, 15, 1)$
 197 : $P_{4134} = (5, 1, 15, 1)$
 198 : $P_{4163} = (2, 3, 15, 1)$
 199 : $P_{4165} = (4, 3, 15, 1)$
 200 : $P_{4179} = (2, 4, 15, 1)$
 201 : $P_{4180} = (3, 4, 15, 1)$
 202 : $P_{4208} = (15, 5, 15, 1)$
 203 : $P_{4221} = (12, 6, 15, 1)$
 204 : $P_{4224} = (15, 6, 15, 1)$
 205 : $P_{4308} = (3, 12, 15, 1)$
 206 : $P_{4315} = (10, 12, 15, 1)$
 207 : $P_{4325} = (4, 13, 15, 1)$
 208 : $P_{4333} = (12, 13, 15, 1)$
 209 : $P_{4347} = (10, 14, 15, 1)$

Line Intersection Graph

	0	1	2	3	4	5
0	0	1	1	0	0	0
1	1	0	1	1	1	0
2	1	1	0	1	1	1
3	0	1	1	0	1	0
4	0	1	1	1	0	1
5	0	0	1	0	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2
in point	P_5	P_1

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4
in point	P_5	P_2	P_2	P_2

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5
in point	P_1	P_2	P_2	P_2	P_{35}

Line 3 intersects

Line	ℓ_1	ℓ_2	ℓ_4
in point	P_2	P_2	P_2

Line 4 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_5
in point	P_2	P_2	P_2	P_{291}

Line 5 intersects

Line	ℓ_2	ℓ_4
in point	P_{35}	P_{291}

The surface has 305 points:

The points on the surface are:

- | | | |
|-------------------------------|---------------------------------|----------------------------------|
| 0 : $P_0 = (1, 0, 0, 0)$ | 37 : $P_{172} = (9, 9, 1, 0)$ | 74 : $P_{698} = (9, 10, 1, 1)$ |
| 1 : $P_1 = (0, 1, 0, 0)$ | 38 : $P_{179} = (0, 10, 1, 0)$ | 75 : $P_{709} = (4, 11, 1, 1)$ |
| 2 : $P_2 = (0, 0, 1, 0)$ | 39 : $P_{189} = (10, 10, 1, 0)$ | 76 : $P_{719} = (14, 11, 1, 1)$ |
| 3 : $P_3 = (0, 0, 0, 1)$ | 40 : $P_{195} = (0, 11, 1, 0)$ | 77 : $P_{773} = (4, 15, 1, 1)$ |
| 4 : $P_4 = (1, 1, 1, 1)$ | 41 : $P_{206} = (11, 11, 1, 0)$ | 78 : $P_{779} = (10, 15, 1, 1)$ |
| 5 : $P_5 = (1, 1, 0, 0)$ | 42 : $P_{211} = (0, 12, 1, 0)$ | 79 : $P_{785} = (0, 0, 2, 1)$ |
| 6 : $P_6 = (2, 1, 0, 0)$ | 43 : $P_{223} = (12, 12, 1, 0)$ | 80 : $P_{797} = (12, 0, 2, 1)$ |
| 7 : $P_7 = (3, 1, 0, 0)$ | 44 : $P_{227} = (0, 13, 1, 0)$ | 81 : $P_{802} = (1, 1, 2, 1)$ |
| 8 : $P_8 = (4, 1, 0, 0)$ | 45 : $P_{240} = (13, 13, 1, 0)$ | 82 : $P_{813} = (12, 1, 2, 1)$ |
| 9 : $P_9 = (5, 1, 0, 0)$ | 46 : $P_{243} = (0, 14, 1, 0)$ | 83 : $P_{823} = (6, 2, 2, 1)$ |
| 10 : $P_{10} = (6, 1, 0, 0)$ | 47 : $P_{257} = (14, 14, 1, 0)$ | 84 : $P_{825} = (8, 2, 2, 1)$ |
| 11 : $P_{11} = (7, 1, 0, 0)$ | 48 : $P_{259} = (0, 15, 1, 0)$ | 85 : $P_{834} = (1, 3, 2, 1)$ |
| 12 : $P_{12} = (8, 1, 0, 0)$ | 49 : $P_{274} = (15, 15, 1, 0)$ | 86 : $P_{847} = (14, 3, 2, 1)$ |
| 13 : $P_{13} = (9, 1, 0, 0)$ | 50 : $P_{291} = (1, 1, 0, 1)$ | 87 : $P_{885} = (4, 6, 2, 1)$ |
| 14 : $P_{14} = (10, 1, 0, 0)$ | 51 : $P_{310} = (4, 2, 0, 1)$ | 88 : $P_{895} = (14, 6, 2, 1)$ |
| 15 : $P_{15} = (11, 1, 0, 0)$ | 52 : $P_{327} = (5, 3, 0, 1)$ | 89 : $P_{969} = (8, 11, 2, 1)$ |
| 16 : $P_{16} = (12, 1, 0, 0)$ | 53 : $P_{347} = (9, 4, 0, 1)$ | 90 : $P_{976} = (15, 11, 2, 1)$ |
| 17 : $P_{17} = (13, 1, 0, 0)$ | 54 : $P_{362} = (8, 5, 0, 1)$ | 91 : $P_{992} = (15, 12, 2, 1)$ |
| 18 : $P_{18} = (14, 1, 0, 0)$ | 55 : $P_{383} = (13, 6, 0, 1)$ | 92 : $P_{1013} = (4, 14, 2, 1)$ |
| 19 : $P_{19} = (15, 1, 0, 0)$ | 56 : $P_{398} = (12, 7, 0, 1)$ | 93 : $P_{1015} = (6, 14, 2, 1)$ |
| 20 : $P_{35} = (0, 1, 1, 0)$ | 57 : $P_{417} = (15, 8, 0, 1)$ | 94 : $P_{1041} = (0, 0, 3, 1)$ |
| 21 : $P_{36} = (1, 1, 1, 0)$ | 58 : $P_{432} = (14, 9, 0, 1)$ | 95 : $P_{1049} = (8, 0, 3, 1)$ |
| 22 : $P_{51} = (0, 2, 1, 0)$ | 59 : $P_{445} = (11, 10, 0, 1)$ | 96 : $P_{1058} = (1, 1, 3, 1)$ |
| 23 : $P_{53} = (2, 2, 1, 0)$ | 60 : $P_{460} = (10, 11, 0, 1)$ | 97 : $P_{1065} = (8, 1, 3, 1)$ |
| 24 : $P_{67} = (0, 3, 1, 0)$ | 61 : $P_{472} = (6, 12, 0, 1)$ | 98 : $P_{1074} = (1, 2, 3, 1)$ |
| 25 : $P_{70} = (3, 3, 1, 0)$ | 62 : $P_{489} = (7, 13, 0, 1)$ | 99 : $P_{1084} = (11, 2, 3, 1)$ |
| 26 : $P_{83} = (0, 4, 1, 0)$ | 63 : $P_{500} = (2, 14, 0, 1)$ | 100 : $P_{1125} = (4, 5, 3, 1)$ |
| 27 : $P_{87} = (4, 4, 1, 0)$ | 64 : $P_{517} = (3, 15, 0, 1)$ | 101 : $P_{1130} = (9, 5, 3, 1)$ |
| 28 : $P_{99} = (0, 5, 1, 0)$ | 65 : $P_{530} = (0, 0, 1, 1)$ | 102 : $P_{1142} = (5, 6, 3, 1)$ |
| 29 : $P_{104} = (5, 5, 1, 0)$ | 66 : $P_{531} = (1, 0, 1, 1)$ | 103 : $P_{1148} = (11, 6, 3, 1)$ |
| 30 : $P_{115} = (0, 6, 1, 0)$ | 67 : $P_{586} = (9, 3, 1, 1)$ | 104 : $P_{1159} = (6, 7, 3, 1)$ |
| 31 : $P_{121} = (6, 6, 1, 0)$ | 68 : $P_{588} = (11, 3, 1, 1)$ | 105 : $P_{1162} = (9, 7, 3, 1)$ |
| 32 : $P_{131} = (0, 7, 1, 0)$ | 69 : $P_{619} = (10, 5, 1, 1)$ | 106 : $P_{1172} = (3, 8, 3, 1)$ |
| 33 : $P_{138} = (7, 7, 1, 0)$ | 70 : $P_{623} = (14, 5, 1, 1)$ | 107 : $P_{1189} = (4, 9, 3, 1)$ |
| 34 : $P_{147} = (0, 8, 1, 0)$ | 71 : $P_{659} = (2, 8, 1, 1)$ | 108 : $P_{1190} = (5, 9, 3, 1)$ |
| 35 : $P_{155} = (8, 8, 1, 0)$ | 72 : $P_{668} = (11, 8, 1, 1)$ | 109 : $P_{1252} = (3, 13, 3, 1)$ |
| 36 : $P_{163} = (0, 9, 1, 0)$ | 73 : $P_{691} = (2, 10, 1, 1)$ | 110 : $P_{1255} = (6, 13, 3, 1)$ |

111 : $P_{1297} = (0, 0, 4, 1)$	165 : $P_{2123} = (10, 3, 7, 1)$	219 : $P_{3005} = (12, 10, 10, 1)$
112 : $P_{1303} = (6, 0, 4, 1)$	166 : $P_{2135} = (6, 4, 7, 1)$	220 : $P_{3006} = (13, 10, 10, 1)$
113 : $P_{1314} = (1, 1, 4, 1)$	167 : $P_{2141} = (12, 4, 7, 1)$	221 : $P_{3010} = (1, 11, 10, 1)$
114 : $P_{1319} = (6, 1, 4, 1)$	168 : $P_{2162} = (1, 6, 7, 1)$	222 : $P_{3081} = (8, 15, 10, 1)$
115 : $P_{1338} = (9, 2, 4, 1)$	169 : $P_{2170} = (9, 6, 7, 1)$	223 : $P_{3085} = (12, 15, 10, 1)$
116 : $P_{1342} = (13, 2, 4, 1)$	170 : $P_{2180} = (3, 7, 7, 1)$	224 : $P_{3089} = (0, 0, 11, 1)$
117 : $P_{1374} = (13, 4, 4, 1)$	171 : $P_{2187} = (10, 7, 7, 1)$	225 : $P_{3099} = (10, 0, 11, 1)$
118 : $P_{1376} = (15, 4, 4, 1)$	172 : $P_{2250} = (9, 11, 7, 1)$	226 : $P_{3106} = (1, 1, 11, 1)$
119 : $P_{1378} = (1, 5, 4, 1)$	173 : $P_{2253} = (12, 11, 7, 1)$	227 : $P_{3115} = (10, 1, 11, 1)$
120 : $P_{1379} = (2, 5, 4, 1)$	174 : $P_{2292} = (3, 14, 7, 1)$	228 : $P_{3143} = (6, 3, 11, 1)$
121 : $P_{1396} = (3, 6, 4, 1)$	175 : $P_{2311} = (6, 15, 7, 1)$	229 : $P_{3152} = (15, 3, 11, 1)$
122 : $P_{1460} = (3, 10, 4, 1)$	176 : $P_{2312} = (7, 15, 7, 1)$	230 : $P_{3158} = (5, 4, 11, 1)$
123 : $P_{1472} = (15, 10, 4, 1)$	177 : $P_{2321} = (0, 0, 8, 1)$	231 : $P_{3164} = (11, 4, 11, 1)$
124 : $P_{1507} = (2, 13, 4, 1)$	178 : $P_{2324} = (3, 0, 8, 1)$	232 : $P_{3222} = (5, 8, 11, 1)$
125 : $P_{1514} = (9, 13, 4, 1)$	179 : $P_{2338} = (1, 1, 8, 1)$	233 : $P_{3224} = (7, 8, 11, 1)$
126 : $P_{1553} = (0, 0, 5, 1)$	180 : $P_{2340} = (3, 1, 8, 1)$	234 : $P_{3250} = (1, 10, 11, 1)$
127 : $P_{1568} = (15, 0, 5, 1)$	181 : $P_{2367} = (14, 2, 8, 1)$	235 : $P_{3271} = (6, 11, 11, 1)$
128 : $P_{1570} = (1, 1, 5, 1)$	182 : $P_{2368} = (15, 2, 8, 1)$	236 : $P_{3272} = (7, 11, 11, 1)$
129 : $P_{1584} = (15, 1, 5, 1)$	183 : $P_{2377} = (8, 3, 8, 1)$	237 : $P_{3324} = (11, 14, 11, 1)$
130 : $P_{1618} = (1, 4, 5, 1)$	184 : $P_{2419} = (2, 6, 8, 1)$	238 : $P_{3328} = (15, 14, 11, 1)$
131 : $P_{1627} = (10, 4, 5, 1)$	185 : $P_{2424} = (7, 6, 8, 1)$	239 : $P_{3345} = (0, 0, 12, 1)$
132 : $P_{1670} = (5, 7, 5, 1)$	186 : $P_{2444} = (11, 7, 8, 1)$	240 : $P_{3347} = (2, 0, 12, 1)$
133 : $P_{1678} = (13, 7, 5, 1)$	187 : $P_{2448} = (15, 7, 8, 1)$	241 : $P_{3362} = (1, 1, 12, 1)$
134 : $P_{1690} = (9, 8, 5, 1)$	188 : $P_{2466} = (1, 9, 8, 1)$	242 : $P_{3363} = (2, 1, 12, 1)$
135 : $P_{1695} = (14, 8, 5, 1)$	189 : $P_{2476} = (11, 9, 8, 1)$	243 : $P_{3382} = (5, 2, 12, 1)$
136 : $P_{1758} = (13, 12, 5, 1)$	190 : $P_{2520} = (7, 12, 8, 1)$	244 : $P_{3405} = (12, 3, 12, 1)$
137 : $P_{1759} = (14, 12, 5, 1)$	191 : $P_{2521} = (8, 12, 8, 1)$	245 : $P_{3406} = (13, 3, 12, 1)$
138 : $P_{1769} = (8, 13, 5, 1)$	192 : $P_{2563} = (2, 15, 8, 1)$	246 : $P_{3436} = (11, 5, 12, 1)$
139 : $P_{1771} = (10, 13, 5, 1)$	193 : $P_{2575} = (14, 15, 8, 1)$	247 : $P_{3437} = (12, 5, 12, 1)$
140 : $P_{1785} = (8, 14, 5, 1)$	194 : $P_{2577} = (0, 0, 9, 1)$	248 : $P_{3495} = (6, 9, 12, 1)$
141 : $P_{1786} = (9, 14, 5, 1)$	195 : $P_{2590} = (13, 0, 9, 1)$	249 : $P_{3502} = (13, 9, 12, 1)$
142 : $P_{1798} = (5, 15, 5, 1)$	196 : $P_{2594} = (1, 1, 9, 1)$	250 : $P_{3511} = (6, 10, 12, 1)$
143 : $P_{1809} = (0, 0, 6, 1)$	197 : $P_{2606} = (13, 1, 9, 1)$	251 : $P_{3519} = (14, 10, 12, 1)$
144 : $P_{1813} = (4, 0, 6, 1)$	198 : $P_{2648} = (7, 4, 9, 1)$	252 : $P_{3542} = (5, 12, 12, 1)$
145 : $P_{1826} = (1, 1, 6, 1)$	199 : $P_{2655} = (14, 4, 9, 1)$	253 : $P_{3548} = (11, 12, 12, 1)$
146 : $P_{1829} = (4, 1, 6, 1)$	200 : $P_{2693} = (4, 7, 9, 1)$	254 : $P_{3554} = (1, 13, 12, 1)$
147 : $P_{1881} = (8, 4, 6, 1)$	201 : $P_{2703} = (14, 7, 9, 1)$	255 : $P_{3567} = (14, 13, 12, 1)$
148 : $P_{1895} = (6, 5, 6, 1)$	202 : $P_{2706} = (1, 8, 9, 1)$	256 : $P_{3601} = (0, 0, 13, 1)$
149 : $P_{1896} = (7, 5, 6, 1)$	203 : $P_{2709} = (4, 8, 9, 1)$	257 : $P_{3610} = (9, 0, 13, 1)$
150 : $P_{1913} = (8, 6, 6, 1)$	204 : $P_{2724} = (3, 9, 9, 1)$	258 : $P_{3618} = (1, 1, 13, 1)$
151 : $P_{1915} = (10, 6, 6, 1)$	205 : $P_{2728} = (7, 9, 9, 1)$	259 : $P_{3626} = (9, 1, 13, 1)$
152 : $P_{1922} = (1, 7, 6, 1)$	206 : $P_{2756} = (3, 11, 9, 1)$	260 : $P_{3640} = (7, 2, 13, 1)$
153 : $P_{1923} = (2, 7, 6, 1)$	207 : $P_{2758} = (5, 11, 9, 1)$	261 : $P_{3645} = (12, 2, 13, 1)$
154 : $P_{1943} = (6, 8, 6, 1)$	208 : $P_{2790} = (5, 13, 9, 1)$	262 : $P_{3741} = (12, 8, 13, 1)$
155 : $P_{1947} = (10, 8, 6, 1)$	209 : $P_{2833} = (0, 0, 10, 1)$	263 : $P_{3742} = (13, 8, 13, 1)$
156 : $P_{1987} = (2, 11, 6, 1)$	210 : $P_{2844} = (11, 0, 10, 1)$	264 : $P_{3760} = (15, 9, 13, 1)$
157 : $P_{1998} = (13, 11, 6, 1)$	211 : $P_{2850} = (1, 1, 10, 1)$	265 : $P_{3765} = (4, 10, 13, 1)$
158 : $P_{2040} = (7, 14, 6, 1)$	212 : $P_{2860} = (11, 1, 10, 1)$	266 : $P_{3768} = (7, 10, 13, 1)$
159 : $P_{2046} = (13, 14, 6, 1)$	213 : $P_{2868} = (3, 2, 10, 1)$	267 : $P_{3794} = (1, 12, 13, 1)$
160 : $P_{2065} = (0, 0, 7, 1)$	214 : $P_{2875} = (10, 2, 10, 1)$	268 : $P_{3797} = (4, 12, 13, 1)$
161 : $P_{2079} = (14, 0, 7, 1)$	215 : $P_{2916} = (3, 5, 10, 1)$	269 : $P_{3820} = (11, 13, 13, 1)$
162 : $P_{2082} = (1, 1, 7, 1)$	216 : $P_{2926} = (13, 5, 10, 1)$	270 : $P_{3824} = (15, 13, 13, 1)$
163 : $P_{2095} = (14, 1, 7, 1)$	217 : $P_{2985} = (8, 9, 10, 1)$	271 : $P_{3852} = (11, 15, 13, 1)$
164 : $P_{2120} = (7, 3, 7, 1)$	218 : $P_{2987} = (10, 9, 10, 1)$	272 : $P_{3854} = (13, 15, 13, 1)$

273 : $P_{3857} = (0, 0, 14, 1)$	284 : $P_{4086} = (5, 14, 14, 1)$	295 : $P_{4180} = (3, 4, 15, 1)$
274 : $P_{3864} = (7, 0, 14, 1)$	285 : $P_{4093} = (12, 14, 14, 1)$	296 : $P_{4208} = (15, 5, 15, 1)$
275 : $P_{3874} = (1, 1, 14, 1)$	286 : $P_{4098} = (1, 15, 14, 1)$	297 : $P_{4221} = (12, 6, 15, 1)$
276 : $P_{3880} = (7, 1, 14, 1)$	287 : $P_{4106} = (9, 15, 14, 1)$	298 : $P_{4224} = (15, 6, 15, 1)$
277 : $P_{3977} = (8, 7, 14, 1)$	288 : $P_{4113} = (0, 0, 15, 1)$	299 : $P_{4308} = (3, 12, 15, 1)$
278 : $P_{4003} = (2, 9, 14, 1)$	289 : $P_{4118} = (5, 0, 15, 1)$	300 : $P_{4315} = (10, 12, 15, 1)$
279 : $P_{4013} = (12, 9, 14, 1)$	290 : $P_{4130} = (1, 1, 15, 1)$	301 : $P_{4325} = (4, 13, 15, 1)$
280 : $P_{4022} = (5, 10, 14, 1)$	291 : $P_{4134} = (5, 1, 15, 1)$	302 : $P_{4333} = (12, 13, 15, 1)$
281 : $P_{4025} = (8, 10, 14, 1)$	292 : $P_{4163} = (2, 3, 15, 1)$	303 : $P_{4338} = (1, 14, 15, 1)$
282 : $P_{4051} = (2, 12, 14, 1)$	293 : $P_{4165} = (4, 3, 15, 1)$	304 : $P_{4347} = (10, 14, 15, 1)$
283 : $P_{4058} = (9, 12, 14, 1)$	294 : $P_{4179} = (2, 4, 15, 1)$	