

Rank-73733 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

$$X_1^3 + X_0X_3^2 + X_0X_1X_2 = 0$$

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

The point rank of the equation over GF(32) is 1108378693

General information

Number of lines	2
Number of points	1057
Number of singular points	2
Number of Eckardt points	0
Number of double points	1
Number of single points	64
Number of points off lines	992
Number of Hesse planes	0
Number of axes	0
Type of points on lines	33^2
Type of lines on points	$2, 1^{64}, 0^{992}$

Singular Points

The surface has 2 singular points:

$$0 : P_0 = \mathbf{P}(1, 0, 0, 0) = \mathbf{P}(1, 0, 0, 0)$$

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

The 2 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1024} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1024} = \mathbf{Pl}(0, 0, 1, 0, 0, 0)_2$$

$$\ell_1 = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{1083424} = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{1083424} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1$$

Rank of lines: (1024, 1083424)

Rank of points on Klein quadric: (2, 1)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 1 Double points:

The double points on the surface are:

$$P_2 = (0, 0, 1, 0) = \ell_0 \cap \ell_1$$

Single Points

The surface has 64 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_1
2 : $P_{36} = (1, 0, 1, 0)$ lies on line ℓ_0
3 : $P_{37} = (2, 0, 1, 0)$ lies on line ℓ_0
4 : $P_{38} = (3, 0, 1, 0)$ lies on line ℓ_0
5 : $P_{39} = (4, 0, 1, 0)$ lies on line ℓ_0
6 : $P_{40} = (5, 0, 1, 0)$ lies on line ℓ_0
7 : $P_{41} = (6, 0, 1, 0)$ lies on line ℓ_0
8 : $P_{42} = (7, 0, 1, 0)$ lies on line ℓ_0
9 : $P_{43} = (8, 0, 1, 0)$ lies on line ℓ_0
10 : $P_{44} = (9, 0, 1, 0)$ lies on line ℓ_0
11 : $P_{45} = (10, 0, 1, 0)$ lies on line ℓ_0
12 : $P_{46} = (11, 0, 1, 0)$ lies on line ℓ_0
13 : $P_{47} = (12, 0, 1, 0)$ lies on line ℓ_0
14 : $P_{48} = (13, 0, 1, 0)$ lies on line ℓ_0
15 : $P_{49} = (14, 0, 1, 0)$ lies on line ℓ_0
16 : $P_{50} = (15, 0, 1, 0)$ lies on line ℓ_0
17 : $P_{51} = (16, 0, 1, 0)$ lies on line ℓ_0
18 : $P_{52} = (17, 0, 1, 0)$ lies on line ℓ_0
19 : $P_{53} = (18, 0, 1, 0)$ lies on line ℓ_0
20 : $P_{54} = (19, 0, 1, 0)$ lies on line ℓ_0
21 : $P_{55} = (20, 0, 1, 0)$ lies on line ℓ_0
22 : $P_{56} = (21, 0, 1, 0)$ lies on line ℓ_0
23 : $P_{57} = (22, 0, 1, 0)$ lies on line ℓ_0
24 : $P_{58} = (23, 0, 1, 0)$ lies on line ℓ_0
25 : $P_{59} = (24, 0, 1, 0)$ lies on line ℓ_0
26 : $P_{60} = (25, 0, 1, 0)$ lies on line ℓ_0
27 : $P_{61} = (26, 0, 1, 0)$ lies on line ℓ_0
28 : $P_{62} = (27, 0, 1, 0)$ lies on line ℓ_0

29 : $P_{63} = (28, 0, 1, 0)$ lies on line ℓ_0
30 : $P_{64} = (29, 0, 1, 0)$ lies on line ℓ_0
31 : $P_{65} = (30, 0, 1, 0)$ lies on line ℓ_0
32 : $P_{66} = (31, 0, 1, 0)$ lies on line ℓ_0
33 : $P_{2082} = (0, 0, 1, 1)$ lies on line ℓ_1
34 : $P_{3105} = (0, 0, 2, 1)$ lies on line ℓ_1
35 : $P_{4129} = (0, 0, 3, 1)$ lies on line ℓ_1
36 : $P_{5153} = (0, 0, 4, 1)$ lies on line ℓ_1
37 : $P_{6177} = (0, 0, 5, 1)$ lies on line ℓ_1
38 : $P_{7201} = (0, 0, 6, 1)$ lies on line ℓ_1
39 : $P_{8225} = (0, 0, 7, 1)$ lies on line ℓ_1
40 : $P_{9249} = (0, 0, 8, 1)$ lies on line ℓ_1
41 : $P_{10273} = (0, 0, 9, 1)$ lies on line ℓ_1
42 : $P_{11297} = (0, 0, 10, 1)$ lies on line ℓ_1
43 : $P_{12321} = (0, 0, 11, 1)$ lies on line ℓ_1
44 : $P_{13345} = (0, 0, 12, 1)$ lies on line ℓ_1
45 : $P_{14369} = (0, 0, 13, 1)$ lies on line ℓ_1
46 : $P_{15393} = (0, 0, 14, 1)$ lies on line ℓ_1
47 : $P_{16417} = (0, 0, 15, 1)$ lies on line ℓ_1
48 : $P_{17441} = (0, 0, 16, 1)$ lies on line ℓ_1
49 : $P_{18465} = (0, 0, 17, 1)$ lies on line ℓ_1
50 : $P_{19489} = (0, 0, 18, 1)$ lies on line ℓ_1
51 : $P_{20513} = (0, 0, 19, 1)$ lies on line ℓ_1
52 : $P_{21537} = (0, 0, 20, 1)$ lies on line ℓ_1
53 : $P_{22561} = (0, 0, 21, 1)$ lies on line ℓ_1
54 : $P_{23585} = (0, 0, 22, 1)$ lies on line ℓ_1
55 : $P_{24609} = (0, 0, 23, 1)$ lies on line ℓ_1
56 : $P_{25633} = (0, 0, 24, 1)$ lies on line ℓ_1
57 : $P_{26657} = (0, 0, 25, 1)$ lies on line ℓ_1

58 : $P_{27681} = (0, 0, 26, 1)$ lies on line ℓ_1
59 : $P_{28705} = (0, 0, 27, 1)$ lies on line ℓ_1
60 : $P_{29729} = (0, 0, 28, 1)$ lies on line ℓ_1
61 : $P_{30753} = (0, 0, 29, 1)$ lies on line ℓ_1

62 : $P_{31777} = (0, 0, 30, 1)$ lies on line ℓ_1
63 : $P_{32801} = (0, 0, 31, 1)$ lies on line ℓ_1

The single points on the surface are:

Points on surface but on no line

The surface has 992 points not on any line:

The points on the surface but not on lines are:

0 : $P_{68} = (1, 1, 1, 0)$	40 : $P_{1381} = (3, 10, 0, 1)$
1 : $P_{103} = (4, 2, 1, 0)$	41 : $P_{1416} = (6, 11, 0, 1)$
2 : $P_{136} = (5, 3, 1, 0)$	42 : $P_{1451} = (9, 12, 0, 1)$
3 : $P_{179} = (16, 4, 1, 0)$	43 : $P_{1504} = (30, 13, 0, 1)$
4 : $P_{212} = (17, 5, 1, 0)$	44 : $P_{1511} = (5, 14, 0, 1)$
5 : $P_{247} = (20, 6, 1, 0)$	45 : $P_{1558} = (20, 15, 0, 1)$
6 : $P_{280} = (21, 7, 1, 0)$	46 : $P_{1584} = (14, 16, 0, 1)$
7 : $P_{301} = (10, 8, 1, 0)$	47 : $P_{1620} = (18, 17, 0, 1)$
8 : $P_{334} = (11, 9, 1, 0)$	48 : $P_{1656} = (22, 18, 0, 1)$
9 : $P_{369} = (14, 10, 1, 0)$	49 : $P_{1678} = (12, 19, 0, 1)$
10 : $P_{402} = (15, 11, 1, 0)$	50 : $P_{1722} = (24, 20, 0, 1)$
11 : $P_{445} = (26, 12, 1, 0)$	51 : $P_{1746} = (16, 21, 0, 1)$
12 : $P_{478} = (27, 13, 1, 0)$	52 : $P_{1783} = (21, 22, 0, 1)$
13 : $P_{513} = (30, 14, 1, 0)$	53 : $P_{1821} = (27, 23, 0, 1)$
14 : $P_{546} = (31, 15, 1, 0)$	54 : $P_{1828} = (2, 24, 0, 1)$
15 : $P_{560} = (13, 16, 1, 0)$	55 : $P_{1886} = (28, 25, 0, 1)$
16 : $P_{591} = (12, 17, 1, 0)$	56 : $P_{1901} = (11, 26, 0, 1)$
17 : $P_{620} = (9, 18, 1, 0)$	57 : $P_{1941} = (19, 27, 0, 1)$
18 : $P_{651} = (8, 19, 1, 0)$	58 : $P_{1967} = (13, 28, 0, 1)$
19 : $P_{704} = (29, 20, 1, 0)$	59 : $P_{1993} = (7, 29, 0, 1)$
20 : $P_{735} = (28, 21, 1, 0)$	60 : $P_{2035} = (17, 30, 0, 1)$
21 : $P_{764} = (25, 22, 1, 0)$	61 : $P_{2079} = (29, 31, 0, 1)$
22 : $P_{795} = (24, 23, 1, 0)$	62 : $P_{2172} = (27, 2, 1, 1)$
23 : $P_{810} = (7, 24, 1, 0)$	63 : $P_{2198} = (21, 3, 1, 1)$
24 : $P_{841} = (6, 25, 1, 0)$	64 : $P_{2211} = (2, 4, 1, 1)$
25 : $P_{870} = (3, 26, 1, 0)$	65 : $P_{2269} = (28, 5, 1, 1)$
26 : $P_{901} = (2, 27, 1, 0)$	66 : $P_{2304} = (31, 6, 1, 1)$
27 : $P_{954} = (23, 28, 1, 0)$	67 : $P_{2334} = (29, 7, 1, 1)$
28 : $P_{985} = (22, 29, 1, 0)$	68 : $P_{2344} = (7, 8, 1, 1)$
29 : $P_{1014} = (19, 30, 1, 0)$	69 : $P_{2390} = (21, 9, 1, 1)$
30 : $P_{1045} = (18, 31, 1, 0)$	70 : $P_{2422} = (21, 10, 1, 1)$
31 : $P_{1091} = (1, 1, 0, 1)$	71 : $P_{2461} = (28, 11, 1, 1)$
32 : $P_{1130} = (8, 2, 0, 1)$	72 : $P_{2489} = (24, 12, 1, 1)$
33 : $P_{1169} = (15, 3, 0, 1)$	73 : $P_{2513} = (16, 13, 1, 1)$
34 : $P_{1196} = (10, 4, 0, 1)$	74 : $P_{2557} = (28, 14, 1, 1)$
35 : $P_{1249} = (31, 5, 0, 1)$	75 : $P_{2584} = (23, 15, 1, 1)$
36 : $P_{1273} = (23, 6, 0, 1)$	76 : $P_{2597} = (4, 16, 1, 1)$
37 : $P_{1286} = (4, 7, 0, 1)$	77 : $P_{2648} = (23, 17, 1, 1)$
38 : $P_{1340} = (26, 8, 0, 1)$	78 : $P_{2664} = (7, 18, 1, 1)$
39 : $P_{1371} = (25, 9, 0, 1)$	79 : $P_{2713} = (24, 19, 1, 1)$

80 : $P_{2739} = (18, 20, 1, 1)$	134 : $P_{4556} = (11, 13, 3, 1)$
81 : $P_{2775} = (22, 21, 1, 1)$	135 : $P_{4583} = (6, 14, 3, 1)$
82 : $P_{2796} = (11, 22, 1, 1)$	136 : $P_{4617} = (8, 15, 3, 1)$
83 : $P_{2823} = (6, 23, 1, 1)$	137 : $P_{4646} = (5, 16, 3, 1)$
84 : $P_{2869} = (20, 24, 1, 1)$	138 : $P_{4689} = (16, 17, 3, 1)$
85 : $P_{2896} = (15, 25, 1, 1)$	139 : $P_{4714} = (9, 18, 3, 1)$
86 : $P_{2920} = (7, 26, 1, 1)$	140 : $P_{4754} = (17, 19, 3, 1)$
87 : $P_{2958} = (13, 27, 1, 1)$	141 : $P_{4770} = (1, 20, 3, 1)$
88 : $P_{3002} = (25, 28, 1, 1)$	142 : $P_{4807} = (6, 21, 3, 1)$
89 : $P_{3018} = (9, 29, 1, 1)$	143 : $P_{4842} = (9, 22, 3, 1)$
90 : $P_{3064} = (23, 30, 1, 1)$	144 : $P_{4869} = (4, 23, 3, 1)$
91 : $P_{3097} = (24, 31, 1, 1)$	145 : $P_{4911} = (14, 24, 3, 1)$
92 : $P_{3165} = (28, 1, 2, 1)$	146 : $P_{4953} = (24, 25, 3, 1)$
93 : $P_{3178} = (9, 2, 2, 1)$	147 : $P_{4985} = (24, 26, 3, 1)$
94 : $P_{3215} = (14, 3, 2, 1)$	148 : $P_{4999} = (6, 27, 3, 1)$
95 : $P_{3246} = (13, 4, 2, 1)$	149 : $P_{5087} = (30, 29, 3, 1)$
96 : $P_{3271} = (6, 5, 2, 1)$	150 : $P_{5110} = (21, 30, 3, 1)$
97 : $P_{3300} = (3, 6, 2, 1)$	151 : $P_{5147} = (26, 31, 3, 1)$
98 : $P_{3346} = (17, 7, 2, 1)$	152 : $P_{5208} = (23, 1, 4, 1)$
99 : $P_{3379} = (18, 8, 2, 1)$	153 : $P_{5222} = (5, 2, 4, 1)$
100 : $P_{3406} = (13, 9, 2, 1)$	154 : $P_{5280} = (31, 3, 4, 1)$
101 : $P_{3436} = (11, 10, 2, 1)$	155 : $P_{5292} = (11, 4, 4, 1)$
102 : $P_{3487} = (30, 11, 2, 1)$	156 : $P_{5343} = (30, 5, 4, 1)$
103 : $P_{3505} = (16, 12, 2, 1)$	157 : $P_{5347} = (2, 6, 4, 1)$
104 : $P_{3534} = (13, 13, 2, 1)$	158 : $P_{5383} = (6, 7, 4, 1)$
105 : $P_{3574} = (21, 14, 2, 1)$	159 : $P_{5429} = (20, 8, 4, 1)$
106 : $P_{3600} = (15, 15, 2, 1)$	160 : $P_{5482} = (9, 10, 4, 1)$
107 : $P_{3634} = (17, 16, 2, 1)$	161 : $P_{5532} = (27, 11, 4, 1)$
108 : $P_{3656} = (7, 17, 2, 1)$	162 : $P_{5558} = (21, 12, 4, 1)$
109 : $P_{3719} = (6, 19, 2, 1)$	163 : $P_{5581} = (12, 13, 4, 1)$
110 : $P_{3747} = (2, 20, 2, 1)$	164 : $P_{5616} = (15, 14, 4, 1)$
111 : $P_{3792} = (15, 21, 2, 1)$	165 : $P_{5652} = (19, 15, 4, 1)$
112 : $P_{3815} = (6, 22, 2, 1)$	166 : $P_{5692} = (27, 16, 4, 1)$
113 : $P_{3858} = (17, 23, 2, 1)$	167 : $P_{5717} = (20, 17, 4, 1)$
114 : $P_{3898} = (25, 24, 2, 1)$	168 : $P_{5746} = (17, 18, 4, 1)$
115 : $P_{3932} = (27, 25, 2, 1)$	169 : $P_{5787} = (26, 19, 4, 1)$
116 : $P_{3952} = (15, 26, 2, 1)$	170 : $P_{5798} = (5, 20, 4, 1)$
117 : $P_{3972} = (3, 27, 2, 1)$	171 : $P_{5837} = (12, 21, 4, 1)$
118 : $P_{4024} = (23, 28, 2, 1)$	172 : $P_{5862} = (5, 22, 4, 1)$
119 : $P_{4036} = (3, 29, 2, 1)$	173 : $P_{5913} = (24, 23, 4, 1)$
120 : $P_{4077} = (12, 30, 2, 1)$	174 : $P_{5933} = (12, 24, 4, 1)$
121 : $P_{4102} = (5, 31, 2, 1)$	175 : $P_{5973} = (20, 25, 4, 1)$
122 : $P_{4179} = (18, 1, 3, 1)$	176 : $P_{5998} = (13, 26, 4, 1)$
123 : $P_{4208} = (15, 2, 3, 1)$	177 : $P_{6044} = (27, 27, 4, 1)$
124 : $P_{4249} = (24, 3, 3, 1)$	178 : $P_{6080} = (31, 28, 4, 1)$
125 : $P_{4266} = (9, 4, 3, 1)$	179 : $P_{6085} = (4, 29, 4, 1)$
126 : $P_{4297} = (8, 5, 3, 1)$	180 : $P_{6141} = (28, 30, 4, 1)$
127 : $P_{4339} = (18, 6, 3, 1)$	181 : $P_{6176} = (31, 31, 4, 1)$
128 : $P_{4371} = (18, 7, 3, 1)$	182 : $P_{6218} = (9, 1, 5, 1)$
129 : $P_{4416} = (31, 8, 3, 1)$	183 : $P_{6261} = (20, 2, 5, 1)$
130 : $P_{4444} = (27, 9, 3, 1)$	184 : $P_{6280} = (7, 3, 5, 1)$
131 : $P_{4457} = (8, 10, 3, 1)$	185 : $P_{6336} = (31, 4, 5, 1)$
132 : $P_{4491} = (10, 11, 3, 1)$	186 : $P_{6344} = (7, 5, 5, 1)$
133 : $P_{4533} = (20, 12, 3, 1)$	187 : $P_{6376} = (7, 6, 5, 1)$

188 : $P_{6431} = (30, 7, 5, 1)$	242 : $P_{8271} = (14, 1, 7, 1)$
189 : $P_{6445} = (12, 8, 5, 1)$	243 : $P_{8296} = (7, 2, 7, 1)$
190 : $P_{6476} = (11, 9, 5, 1)$	244 : $P_{8333} = (12, 3, 7, 1)$
191 : $P_{6515} = (18, 10, 5, 1)$	245 : $P_{8368} = (15, 4, 7, 1)$
192 : $P_{6531} = (2, 11, 5, 1)$	246 : $P_{8395} = (10, 5, 7, 1)$
193 : $P_{6574} = (13, 12, 5, 1)$	247 : $P_{8443} = (26, 6, 7, 1)$
194 : $P_{6610} = (17, 13, 5, 1)$	248 : $P_{8472} = (23, 7, 7, 1)$
195 : $P_{6635} = (10, 14, 5, 1)$	249 : $P_{8492} = (11, 8, 7, 1)$
196 : $P_{6671} = (14, 15, 5, 1)$	250 : $P_{8539} = (26, 9, 7, 1)$
197 : $P_{6700} = (11, 16, 5, 1)$	251 : $P_{8551} = (6, 10, 7, 1)$
198 : $P_{6731} = (10, 17, 5, 1)$	252 : $P_{8599} = (22, 11, 7, 1)$
199 : $P_{6756} = (3, 18, 5, 1)$	253 : $P_{8669} = (28, 13, 7, 1)$
200 : $P_{6813} = (28, 19, 5, 1)$	254 : $P_{8703} = (30, 14, 7, 1)$
201 : $P_{6826} = (9, 20, 5, 1)$	255 : $P_{8731} = (26, 15, 7, 1)$
202 : $P_{6858} = (9, 21, 5, 1)$	256 : $P_{8743} = (6, 16, 7, 1)$
203 : $P_{6900} = (19, 22, 5, 1)$	257 : $P_{8774} = (5, 17, 7, 1)$
204 : $P_{6961} = (16, 24, 5, 1)$	258 : $P_{8831} = (30, 18, 7, 1)$
205 : $P_{6988} = (11, 25, 5, 1)$	259 : $P_{8858} = (25, 19, 7, 1)$
206 : $P_{7038} = (29, 26, 5, 1)$	260 : $P_{8877} = (12, 20, 7, 1)$
207 : $P_{7056} = (15, 27, 5, 1)$	261 : $P_{8915} = (18, 21, 7, 1)$
208 : $P_{7093} = (20, 28, 5, 1)$	262 : $P_{8933} = (4, 22, 7, 1)$
209 : $P_{7106} = (1, 29, 5, 1)$	263 : $P_{8973} = (12, 23, 7, 1)$
210 : $P_{7157} = (20, 30, 5, 1)$	264 : $P_{9022} = (29, 24, 7, 1)$
211 : $P_{7179} = (10, 31, 5, 1)$	265 : $P_{9032} = (7, 25, 7, 1)$
212 : $P_{7245} = (12, 1, 6, 1)$	266 : $P_{9063} = (6, 26, 7, 1)$
213 : $P_{7288} = (23, 2, 6, 1)$	267 : $P_{9096} = (7, 27, 7, 1)$
214 : $P_{7308} = (11, 3, 6, 1)$	268 : $P_{9151} = (30, 28, 7, 1)$
215 : $P_{7343} = (14, 4, 6, 1)$	269 : $P_{9177} = (24, 29, 7, 1)$
216 : $P_{7362} = (1, 5, 6, 1)$	270 : $P_{9186} = (1, 30, 7, 1)$
217 : $P_{7409} = (16, 6, 6, 1)$	271 : $P_{9236} = (19, 31, 7, 1)$
218 : $P_{7452} = (27, 7, 6, 1)$	272 : $P_{9285} = (4, 1, 8, 1)$
219 : $P_{7461} = (4, 8, 6, 1)$	273 : $P_{9343} = (30, 2, 8, 1)$
220 : $P_{7512} = (23, 9, 6, 1)$	274 : $P_{9354} = (9, 3, 8, 1)$
221 : $P_{7543} = (22, 10, 6, 1)$	275 : $P_{9393} = (16, 4, 8, 1)$
222 : $P_{7576} = (23, 11, 6, 1)$	276 : $P_{9432} = (23, 5, 8, 1)$
223 : $P_{7611} = (26, 12, 6, 1)$	277 : $P_{9447} = (6, 6, 8, 1)$
224 : $P_{7620} = (3, 13, 6, 1)$	278 : $P_{9485} = (12, 7, 8, 1)$
225 : $P_{7687} = (6, 15, 6, 1)$	279 : $P_{9533} = (28, 8, 8, 1)$
226 : $P_{7714} = (1, 16, 6, 1)$	280 : $P_{9557} = (20, 9, 8, 1)$
227 : $P_{7756} = (11, 17, 6, 1)$	281 : $P_{9573} = (4, 10, 8, 1)$
228 : $P_{7788} = (11, 18, 6, 1)$	282 : $P_{9605} = (4, 11, 8, 1)$
229 : $P_{7812} = (3, 19, 6, 1)$	283 : $P_{9652} = (19, 12, 8, 1)$
230 : $P_{7871} = (30, 20, 6, 1)$	284 : $P_{9670} = (5, 13, 8, 1)$
231 : $P_{7874} = (1, 21, 6, 1)$	285 : $P_{9711} = (14, 14, 8, 1)$
232 : $P_{7933} = (28, 22, 6, 1)$	286 : $P_{9746} = (17, 15, 8, 1)$
233 : $P_{7945} = (8, 23, 6, 1)$	287 : $P_{9785} = (24, 16, 8, 1)$
234 : $P_{7996} = (27, 24, 6, 1)$	288 : $P_{9820} = (27, 17, 8, 1)$
235 : $P_{8019} = (18, 25, 6, 1)$	289 : $P_{9840} = (15, 18, 8, 1)$
236 : $P_{8035} = (2, 26, 6, 1)$	290 : $P_{9871} = (14, 19, 8, 1)$
237 : $P_{8085} = (20, 27, 6, 1)$	291 : $P_{9908} = (19, 20, 8, 1)$
238 : $P_{8121} = (24, 28, 6, 1)$	292 : $P_{9950} = (29, 21, 8, 1)$
239 : $P_{8139} = (10, 29, 6, 1)$	293 : $P_{10013} = (28, 23, 8, 1)$
240 : $P_{8164} = (3, 30, 6, 1)$	294 : $P_{10036} = (19, 24, 8, 1)$
241 : $P_{8220} = (27, 31, 6, 1)$	295 : $P_{10052} = (3, 25, 8, 1)$

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 697 : $P_{23796} = (19, 6, 22, 1)$
 698 : $P_{23837} = (28, 7, 22, 1)$
 699 : $P_{23895} = (22, 9, 22, 1)$
 700 : $P_{23917} = (12, 10, 22, 1)$
 701 : $P_{23953} = (16, 11, 22, 1)$
 702 : $P_{23987} = (18, 12, 22, 1)$
 703 : $P_{24022} = (21, 13, 22, 1)$
 704 : $P_{24045} = (12, 14, 22, 1)$
 705 : $P_{24083} = (18, 15, 22, 1)$
 706 : $P_{24122} = (25, 16, 22, 1)$
 707 : $P_{24142} = (13, 17, 22, 1)$
 708 : $P_{24182} = (21, 18, 22, 1)$
 709 : $P_{24213} = (20, 19, 22, 1)$
 710 : $P_{24232} = (7, 20, 22, 1)$
 711 : $P_{24287} = (30, 21, 22, 1)$
 712 : $P_{24291} = (2, 22, 22, 1)$
 713 : $P_{24337} = (16, 23, 22, 1)$
 714 : $P_{24354} = (1, 24, 22, 1)$
 715 : $P_{24395} = (10, 25, 22, 1)$
 716 : $P_{24418} = (1, 26, 22, 1)$
 717 : $P_{24457} = (8, 27, 22, 1)$
 718 : $P_{24497} = (16, 28, 22, 1)$
 719 : $P_{24528} = (15, 29, 22, 1)$
 720 : $P_{24572} = (27, 30, 22, 1)$
 721 : $P_{24598} = (21, 31, 22, 1)$
 722 : $P_{24649} = (8, 1, 23, 1)$
 723 : $P_{24695} = (22, 2, 23, 1)$
 724 : $P_{24731} = (26, 3, 23, 1)$
 725 : $P_{24744} = (7, 4, 23, 1)$
 726 : $P_{24829} = (28, 6, 23, 1)$
 727 : $P_{24843} = (10, 7, 23, 1)$

728 : $P_{24875} = (10, 8, 23, 1)$
 729 : $P_{24914} = (17, 9, 23, 1)$
 730 : $P_{24930} = (1, 10, 23, 1)$
 731 : $P_{24975} = (14, 11, 23, 1)$
 732 : $P_{24998} = (5, 12, 23, 1)$
 733 : $P_{25048} = (23, 13, 23, 1)$
 734 : $P_{25086} = (29, 14, 23, 1)$
 735 : $P_{25099} = (10, 15, 23, 1)$
 736 : $P_{25144} = (23, 16, 23, 1)$
 737 : $P_{25175} = (22, 17, 23, 1)$
 738 : $P_{25205} = (20, 18, 23, 1)$
 739 : $P_{25239} = (22, 19, 23, 1)$
 740 : $P_{25276} = (27, 20, 23, 1)$
 741 : $P_{25286} = (5, 21, 23, 1)$
 742 : $P_{25330} = (17, 22, 23, 1)$
 743 : $P_{25366} = (21, 23, 23, 1)$
 744 : $P_{25392} = (15, 24, 23, 1)$
 745 : $P_{25414} = (5, 25, 23, 1)$
 746 : $P_{25460} = (19, 26, 23, 1)$
 747 : $P_{25482} = (9, 27, 23, 1)$
 748 : $P_{25511} = (6, 28, 23, 1)$
 749 : $P_{25560} = (23, 29, 23, 1)$
 750 : $P_{25587} = (18, 30, 23, 1)$
 751 : $P_{25618} = (17, 31, 23, 1)$
 752 : $P_{25675} = (10, 1, 24, 1)$
 753 : $P_{25708} = (11, 2, 24, 1)$
 754 : $P_{25737} = (8, 3, 24, 1)$
 755 : $P_{25786} = (25, 4, 24, 1)$
 756 : $P_{25796} = (3, 5, 24, 1)$
 757 : $P_{25842} = (17, 6, 24, 1)$
 758 : $P_{25888} = (31, 7, 24, 1)$
 759 : $P_{25914} = (25, 8, 24, 1)$
 760 : $P_{25950} = (29, 9, 24, 1)$
 761 : $P_{25967} = (14, 10, 24, 1)$
 762 : $P_{25997} = (12, 11, 24, 1)$
 763 : $P_{26042} = (25, 12, 24, 1)$
 764 : $P_{26073} = (24, 13, 24, 1)$
 765 : $P_{26082} = (1, 14, 24, 1)$
 766 : $P_{26143} = (30, 15, 24, 1)$
 767 : $P_{26166} = (21, 16, 24, 1)$
 768 : $P_{26221} = (12, 18, 24, 1)$
 769 : $P_{26250} = (9, 19, 24, 1)$
 770 : $P_{26296} = (23, 20, 24, 1)$
 771 : $P_{26319} = (14, 21, 24, 1)$
 772 : $P_{26361} = (24, 22, 24, 1)$
 773 : $P_{26389} = (20, 23, 24, 1)$
 774 : $P_{26429} = (28, 24, 24, 1)$
 775 : $P_{26445} = (12, 25, 24, 1)$
 776 : $P_{26482} = (17, 26, 24, 1)$
 777 : $P_{26521} = (24, 27, 24, 1)$
 778 : $P_{26546} = (17, 28, 24, 1)$
 779 : $P_{26563} = (2, 29, 24, 1)$
 780 : $P_{26615} = (22, 30, 24, 1)$
 781 : $P_{26639} = (14, 31, 24, 1)$

782 : $P_{26706} = (17, 1, 25, 1)$
 783 : $P_{26731} = (10, 2, 25, 1)$
 784 : $P_{26754} = (1, 3, 25, 1)$
 785 : $P_{26786} = (1, 4, 25, 1)$
 786 : $P_{26826} = (9, 5, 25, 1)$
 787 : $P_{26863} = (14, 6, 25, 1)$
 788 : $P_{26882} = (1, 7, 25, 1)$
 789 : $P_{26942} = (29, 8, 25, 1)$
 790 : $P_{26973} = (28, 9, 25, 1)$
 791 : $P_{27034} = (25, 11, 25, 1)$
 792 : $P_{27068} = (27, 12, 25, 1)$
 793 : $P_{27079} = (6, 13, 25, 1)$
 794 : $P_{27131} = (26, 14, 25, 1)$
 795 : $P_{27150} = (13, 15, 25, 1)$
 796 : $P_{27195} = (26, 16, 25, 1)$
 797 : $P_{27213} = (12, 17, 25, 1)$
 798 : $P_{27261} = (28, 18, 25, 1)$
 799 : $P_{27267} = (2, 19, 25, 1)$
 800 : $P_{27305} = (8, 20, 25, 1)$
 801 : $P_{27352} = (23, 21, 25, 1)$
 802 : $P_{27392} = (31, 22, 25, 1)$
 803 : $P_{27406} = (13, 23, 25, 1)$
 804 : $P_{27438} = (13, 24, 25, 1)$
 805 : $P_{27461} = (4, 25, 25, 1)$
 806 : $P_{27498} = (9, 26, 25, 1)$
 807 : $P_{27549} = (28, 27, 25, 1)$
 808 : $P_{27572} = (19, 28, 25, 1)$
 809 : $P_{27606} = (21, 29, 25, 1)$
 810 : $P_{27643} = (26, 30, 25, 1)$
 811 : $P_{27658} = (9, 31, 25, 1)$
 812 : $P_{27744} = (31, 1, 26, 1)$
 813 : $P_{27763} = (18, 2, 26, 1)$
 814 : $P_{27796} = (19, 3, 26, 1)$
 815 : $P_{27812} = (3, 4, 26, 1)$
 816 : $P_{27845} = (4, 5, 26, 1)$
 817 : $P_{27874} = (1, 6, 26, 1)$
 818 : $P_{27930} = (25, 7, 26, 1)$
 819 : $P_{27956} = (19, 8, 26, 1)$
 820 : $P_{27977} = (8, 9, 26, 1)$
 821 : $P_{28026} = (25, 10, 26, 1)$
 822 : $P_{28052} = (19, 11, 26, 1)$
 823 : $P_{28088} = (23, 12, 26, 1)$
 824 : $P_{28122} = (25, 13, 26, 1)$
 825 : $P_{28136} = (7, 14, 26, 1)$
 826 : $P_{28173} = (12, 15, 26, 1)$
 827 : $P_{28202} = (9, 16, 26, 1)$
 828 : $P_{28231} = (6, 17, 26, 1)$
 829 : $P_{28270} = (13, 18, 26, 1)$
 830 : $P_{28304} = (15, 19, 26, 1)$
 831 : $P_{28335} = (14, 20, 26, 1)$
 832 : $P_{28408} = (23, 22, 26, 1)$
 833 : $P_{28427} = (10, 23, 26, 1)$
 834 : $P_{28480} = (31, 24, 26, 1)$
 835 : $P_{28512} = (31, 25, 26, 1)$

836 : $P_{28536} = (23, 26, 26, 1)$	890 : $P_{30397} = (28, 20, 28, 1)$
837 : $P_{28556} = (11, 27, 26, 1)$	891 : $P_{30426} = (25, 21, 28, 1)$
838 : $P_{28579} = (2, 28, 26, 1)$	892 : $P_{30436} = (3, 22, 28, 1)$
839 : $P_{28627} = (18, 29, 26, 1)$	893 : $P_{30476} = (11, 23, 28, 1)$
840 : $P_{28646} = (5, 30, 26, 1)$	894 : $P_{30505} = (8, 24, 28, 1)$
841 : $P_{28691} = (18, 31, 26, 1)$	895 : $P_{30550} = (21, 25, 28, 1)$
842 : $P_{28758} = (21, 1, 27, 1)$	896 : $P_{30573} = (12, 26, 28, 1)$
843 : $P_{28785} = (16, 2, 27, 1)$	897 : $P_{30622} = (29, 27, 28, 1)$
844 : $P_{28826} = (25, 3, 27, 1)$	898 : $P_{30632} = (7, 28, 28, 1)$
845 : $P_{28838} = (5, 4, 27, 1)$	899 : $P_{30662} = (5, 29, 28, 1)$
846 : $P_{28889} = (24, 5, 27, 1)$	900 : $P_{30718} = (29, 30, 28, 1)$
847 : $P_{28924} = (27, 6, 27, 1)$	901 : $P_{30727} = (6, 31, 28, 1)$
848 : $P_{28940} = (11, 7, 27, 1)$	902 : $P_{30788} = (3, 1, 29, 1)$
849 : $P_{28970} = (9, 8, 27, 1)$	903 : $P_{30834} = (17, 2, 29, 1)$
850 : $P_{29007} = (14, 9, 27, 1)$	904 : $P_{30854} = (5, 3, 29, 1)$
851 : $P_{29032} = (7, 10, 27, 1)$	905 : $P_{30903} = (22, 4, 29, 1)$
852 : $P_{29068} = (11, 11, 27, 1)$	906 : $P_{30929} = (16, 5, 29, 1)$
853 : $P_{29100} = (11, 12, 27, 1)$	907 : $P_{30969} = (24, 6, 29, 1)$
854 : $P_{29147} = (26, 13, 27, 1)$	908 : $P_{30991} = (14, 7, 29, 1)$
855 : $P_{29170} = (17, 14, 27, 1)$	909 : $P_{31026} = (17, 8, 29, 1)$
856 : $P_{29188} = (3, 15, 27, 1)$	910 : $P_{31045} = (4, 9, 29, 1)$
857 : $P_{29233} = (16, 16, 27, 1)$	911 : $P_{31090} = (17, 10, 29, 1)$
858 : $P_{29253} = (4, 17, 27, 1)$	912 : $P_{31136} = (31, 11, 29, 1)$
859 : $P_{29297} = (16, 18, 27, 1)$	913 : $P_{31138} = (1, 12, 29, 1)$
860 : $P_{29344} = (31, 19, 27, 1)$	914 : $P_{31188} = (19, 13, 29, 1)$
861 : $P_{29371} = (26, 20, 27, 1)$	915 : $P_{31214} = (13, 14, 29, 1)$
862 : $P_{29405} = (28, 21, 27, 1)$	916 : $P_{31240} = (7, 15, 29, 1)$
863 : $P_{29422} = (13, 22, 27, 1)$	917 : $P_{31272} = (7, 16, 29, 1)$
864 : $P_{29463} = (22, 23, 27, 1)$	918 : $P_{31328} = (31, 17, 29, 1)$
865 : $P_{29478} = (5, 24, 27, 1)$	919 : $P_{31358} = (29, 18, 29, 1)$
866 : $P_{29531} = (26, 25, 27, 1)$	920 : $P_{31404} = (11, 20, 29, 1)$
867 : $P_{29547} = (10, 26, 27, 1)$	921 : $P_{31429} = (4, 21, 29, 1)$
868 : $P_{29587} = (18, 27, 27, 1)$	922 : $P_{31465} = (8, 22, 29, 1)$
869 : $P_{29606} = (5, 28, 27, 1)$	923 : $P_{31490} = (1, 23, 29, 1)$
870 : $P_{29658} = (25, 29, 27, 1)$	924 : $P_{31542} = (21, 24, 29, 1)$
871 : $P_{29690} = (25, 30, 27, 1)$	925 : $P_{31583} = (30, 25, 29, 1)$
872 : $P_{29780} = (19, 1, 28, 1)$	926 : $P_{31616} = (31, 26, 29, 1)$
873 : $P_{29817} = (24, 2, 28, 1)$	927 : $P_{31618} = (1, 27, 29, 1)$
874 : $P_{29885} = (28, 4, 28, 1)$	928 : $P_{31653} = (4, 28, 29, 1)$
875 : $P_{29918} = (29, 5, 28, 1)$	929 : $P_{31708} = (27, 29, 29, 1)$
876 : $P_{29934} = (13, 6, 28, 1)$	930 : $P_{31719} = (6, 30, 29, 1)$
877 : $P_{29956} = (3, 7, 28, 1)$	931 : $P_{31752} = (7, 31, 29, 1)$
878 : $P_{29986} = (1, 8, 28, 1)$	932 : $P_{31836} = (27, 1, 30, 1)$
879 : $P_{30027} = (10, 9, 28, 1)$	933 : $P_{31869} = (28, 2, 30, 1)$
880 : $P_{30069} = (20, 10, 28, 1)$	934 : $P_{31889} = (16, 3, 30, 1)$
881 : $P_{30089} = (8, 11, 28, 1)$	935 : $P_{31931} = (26, 4, 30, 1)$
882 : $P_{30143} = (30, 12, 28, 1)$	936 : $P_{31951} = (14, 5, 30, 1)$
883 : $P_{30163} = (18, 13, 28, 1)$	937 : $P_{31977} = (8, 6, 30, 1)$
884 : $P_{30208} = (31, 14, 28, 1)$	938 : $P_{32016} = (15, 7, 30, 1)$
885 : $P_{30214} = (5, 15, 28, 1)$	939 : $P_{32041} = (8, 8, 30, 1)$
886 : $P_{30269} = (28, 16, 28, 1)$	940 : $P_{32068} = (3, 9, 30, 1)$
887 : $P_{30276} = (3, 17, 28, 1)$	941 : $P_{32099} = (2, 10, 30, 1)$
888 : $P_{30310} = (5, 18, 28, 1)$	942 : $P_{32136} = (7, 11, 30, 1)$
889 : $P_{30345} = (8, 19, 28, 1)$	943 : $P_{32192} = (31, 12, 30, 1)$

944 : $P_{32203} = (10, 13, 30, 1)$
 945 : $P_{32233} = (8, 14, 30, 1)$
 946 : $P_{32266} = (9, 15, 30, 1)$
 947 : $P_{32308} = (19, 16, 30, 1)$
 948 : $P_{32323} = (2, 17, 30, 1)$
 949 : $P_{32380} = (27, 18, 30, 1)$
 950 : $P_{32412} = (27, 19, 30, 1)$
 951 : $P_{32456} = (7, 21, 30, 1)$
 952 : $P_{32503} = (22, 22, 30, 1)$
 953 : $P_{32518} = (5, 23, 30, 1)$
 954 : $P_{32551} = (6, 24, 30, 1)$
 955 : $P_{32591} = (14, 25, 30, 1)$
 956 : $P_{32630} = (21, 26, 30, 1)$
 957 : $P_{32643} = (2, 27, 30, 1)$
 958 : $P_{32687} = (14, 28, 30, 1)$
 959 : $P_{32717} = (12, 29, 30, 1)$
 960 : $P_{32744} = (7, 30, 30, 1)$
 961 : $P_{32794} = (25, 31, 30, 1)$
 962 : $P_{32853} = (20, 1, 31, 1)$
 963 : $P_{32890} = (25, 2, 31, 1)$
 964 : $P_{32900} = (3, 3, 31, 1)$
 965 : $P_{32949} = (20, 4, 31, 1)$
 966 : $P_{32981} = (20, 5, 31, 1)$
 967 : $P_{33015} = (22, 6, 31, 1)$
 968 : $P_{33030} = (5, 7, 31, 1)$

969 : $P_{33070} = (13, 8, 31, 1)$
 970 : $P_{33096} = (7, 9, 31, 1)$
 971 : $P_{33151} = (30, 10, 31, 1)$
 972 : $P_{33154} = (1, 11, 31, 1)$
 973 : $P_{33191} = (6, 12, 31, 1)$
 974 : $P_{33231} = (14, 13, 31, 1)$
 975 : $P_{33267} = (18, 14, 31, 1)$
 976 : $P_{33308} = (27, 15, 31, 1)$
 977 : $P_{33315} = (2, 16, 31, 1)$
 978 : $P_{33371} = (26, 17, 31, 1)$
 979 : $P_{33408} = (31, 18, 31, 1)$
 980 : $P_{33413} = (4, 19, 31, 1)$
 981 : $P_{33470} = (29, 20, 31, 1)$
 982 : $P_{33486} = (13, 21, 31, 1)$
 983 : $P_{33523} = (18, 22, 31, 1)$
 984 : $P_{33551} = (14, 23, 31, 1)$
 985 : $P_{33587} = (18, 24, 31, 1)$
 986 : $P_{33623} = (22, 25, 31, 1)$
 987 : $P_{33647} = (14, 26, 31, 1)$
 988 : $P_{33725} = (28, 28, 31, 1)$
 989 : $P_{33742} = (13, 29, 31, 1)$
 990 : $P_{33785} = (24, 30, 31, 1)$
 991 : $P_{33815} = (22, 31, 31, 1)$

Line Intersection Graph

	0 1
0	0 1
1	1 0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1
in point	P_2

Line 1 intersects

Line	ℓ_0
in point	P_2

The surface has 1057 points:

Too many to print.