Rank-74052 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_0^2X_3 + X_1^2X_2 + X_0X_3^2 + X_0X_1X_2 = 0$$

(1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(32) is -2112846810

General information

Number of lines	2
Number of points	1025
Number of singular points	1
Number of Eckardt points	0
Number of double points	1
Number of single points	64
Number of points off lines	960
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^{960}

Singular Points

The surface has 1 singular points:

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

The 2 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1082400} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1082400} = \mathbf{Pl}(0,0,0,1,0,0)_{65}$$

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

Rank of lines: (1082400, 1083424)
Rank of points on Klein quadric: (65, 1)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 1 Double points:
The double points on the surface are:

$P_3 = (0,0,0,1) = \ell_0 \cap \ell_1$

Single Points

The surface has 64 single points:
The single points on the surface are:

0 : $P_1 = (0,1,0,0)$ lies on line ℓ_0
1 : $P_2 = (0,0,1,0)$ lies on line ℓ_1
2 : $P_{1090} = (0,1,0,1)$ lies on line ℓ_0
3 : $P_{1122} = (0,2,0,1)$ lies on line ℓ_0
4 : $P_{1154} = (0,3,0,1)$ lies on line ℓ_0
5 : $P_{1186} = (0,4,0,1)$ lies on line ℓ_0
6 : $P_{1218} = (0,5,0,1)$ lies on line ℓ_0
7 : $P_{1250} = (0,6,0,1)$ lies on line ℓ_0
8 : $P_{1282} = (0,7,0,1)$ lies on line ℓ_0
9 : $P_{1314} = (0,8,0,1)$ lies on line ℓ_0
10 : $P_{1346} = (0,9,0,1)$ lies on line ℓ_0
11 : $P_{1378} = (0,10,0,1)$ lies on line ℓ_0
12 : $P_{1410} = (0,11,0,1)$ lies on line ℓ_0
13 : $P_{1442} = (0,12,0,1)$ lies on line ℓ_0
14 : $P_{1474} = (0,13,0,1)$ lies on line ℓ_0
15 : $P_{1506} = (0,14,0,1)$ lies on line ℓ_0
16 : $P_{1538} = (0,15,0,1)$ lies on line ℓ_0
17 : $P_{1570} = (0,16,0,1)$ lies on line ℓ_0
18 : $P_{1602} = (0,17,0,1)$ lies on line ℓ_0
19 : $P_{1634} = (0,18,0,1)$ lies on line ℓ_0
20 : $P_{1666} = (0,19,0,1)$ lies on line ℓ_0
21 : $P_{1698} = (0,20,0,1)$ lies on line ℓ_0
22 : $P_{1730} = (0,21,0,1)$ lies on line ℓ_0
23 : $P_{1762} = (0,22,0,1)$ lies on line ℓ_0
24 : $P_{1794} = (0,23,0,1)$ lies on line ℓ_0
25 : $P_{1826} = (0,24,0,1)$ lies on line ℓ_0
26 : $P_{1858} = (0,25,0,1)$ lies on line ℓ_0
27 : $P_{1890} = (0,26,0,1)$ lies on line ℓ_0
28 : $P_{1922} = (0,27,0,1)$ lies on line ℓ_0
29 : $P_{1954} = (0,28,0,1)$ lies on line ℓ_0
30 : $P_{1986} = (0,29,0,1)$ lies on line ℓ_0
31 : $P_{2018} = (0,30,0,1)$ lies on line ℓ_0
32 : $P_{2050} = (0,31,0,1)$ 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 960 points not on any line:
The points on the surface but not on lines are:

0 : $P_{112} = (13, 2, 1, 0)$
1 : $P_{146} = (15, 3, 1, 0)$
2 : $P_{149} = (18, 3, 1, 0)$
3 : $P_{160} = (29, 3, 1, 0)$
4 : $P_{190} = (27, 4, 1, 0)$
5 : $P_{204} = (9, 5, 1, 0)$
6 : $P_{217} = (22, 5, 1, 0)$
7 : $P_{226} = (31, 5, 1, 0)$
8 : $P_{316} = (25, 8, 1, 0)$
9 : $P_{327} = (4, 9, 1, 0)$
10 : $P_{361} = (6, 10, 1, 0)$
11 : $P_{403} = (16, 11, 1, 0)$
12 : $P_{425} = (6, 12, 1, 0)$
13 : $P_{428} = (9, 12, 1, 0)$
14 : $P_{434} = (15, 12, 1, 0)$
15 : $P_{455} = (4, 13, 1, 0)$
16 : $P_{503} = (20, 14, 1, 0)$
17 : $P_{528} = (13, 15, 1, 0)$
18 : $P_{549} = (2, 16, 1, 0)$
19 : $P_{590} = (11, 17, 1, 0)$
20 : $P_{597} = (18, 17, 1, 0)$
21 : $P_{604} = (25, 17, 1, 0)$
22 : $P_{613} = (2, 18, 1, 0)$
23 : $P_{665} = (22, 19, 1, 0)$
24 : $P_{878} = (11, 26, 1, 0)$
25 : $P_{887} = (20, 26, 1, 0)$
26 : $P_{898} = (31, 26, 1, 0)$
27 : $P_{915} = (16, 27, 1, 0)$
28 : $P_{1024} = (29, 30, 1, 0)$
29 : $P_{1054} = (27, 31, 1, 0)$
30 : $P_{2199} = (22, 3, 1, 1)$
31 : $P_{2266} = (25, 5, 1, 1)$
32 : $P_{2287} = (14, 6, 1, 1)$
33 : $P_{2334} = (29, 7, 1, 1)$
34 : $P_{2351} = (14, 8, 1, 1)$
35 : $P_{2431} = (30, 10, 1, 1)$
36 : $P_{2485} = (20, 12, 1, 1)$
37 : $P_{2548} = (19, 14, 1, 1)$
38 : $P_{2631} = (6, 17, 1, 1)$
39 : $P_{2699} = (10, 19, 1, 1)$
40 : $P_{2751} = (30, 20, 1, 1)$
41 : $P_{2775} = (22, 21, 1, 1)$
42 : $P_{2793} = (8, 22, 1, 1)$
43 : $P_{2823} = (6, 23, 1, 1)$
44 : $P_{2869} = (20, 24, 1, 1)$
45 : $P_{2891} = (10, 25, 1, 1)$
46 : $P_{2942} = (29, 26, 1, 1)$
47 : $P_{3002} = (25, 28, 1, 1)$
48 : $P_{3028} = (19, 29, 1, 1)$
49 : $P_{3049} = (8, 30, 1, 1)$
50 : $P_{3183} = (14, 2, 2, 1)$
51 : $P_{3191} = (22, 2, 2, 1)$
52 : $P_{3194} = (25, 2, 2, 1)$
53 : $P_{3298} = (1, 6, 2, 1)$
54 : $P_{3313} = (16, 6, 2, 1)$
55 : $P_{3330} = (1, 7, 2, 1)$
56 : $P_{3340} = (11, 7, 2, 1)$
57 : $P_{3365} = (4, 8, 2, 1)$
58 : $P_{3442} = (17, 10, 2, 1)$
59 : $P_{3463} = (6, 11, 2, 1)$
60 : $P_{3481} = (24, 11, 2, 1)$
61 : $P_{3488} = (31, 11, 2, 1)$
62 : $P_{3493} = (4, 12, 2, 1)$
63 : $P_{3500} = (11, 12, 2, 1)$
64 : $P_{3503} = (14, 12, 2, 1)$
65 : $P_{3527} = (6, 13, 2, 1)$
66 : $P_{3548} = (27, 13, 2, 1)$
67 : $P_{3549} = (28, 13, 2, 1)$
68 : $P_{3576} = (23, 14, 2, 1)$
69 : $P_{3622} = (5, 16, 2, 1)$
70 : $P_{3677} = (28, 17, 2, 1)$
71 : $P_{3690} = (9, 18, 2, 1)$
72 : $P_{3737} = (24, 19, 2, 1)$
73 : $P_{3753} = (8, 20, 2, 1)$
74 : $P_{3767} = (22, 20, 2, 1)$
75 : $P_{3776} = (31, 20, 2, 1)$
76 : $P_{3782} = (5, 21, 2, 1)$
77 : $P_{3819} = (10, 22, 2, 1)$
78 : $P_{3825} = (16, 22, 2, 1)$
79 : $P_{3836} = (27, 22, 2, 1)$

80 : $P_{3928} = (23, 25, 2, 1)$
81 : $P_{3978} = (9, 27, 2, 1)$
82 : $P_{3986} = (17, 27, 2, 1)$
83 : $P_{3994} = (25, 27, 2, 1)$
84 : $P_{4004} = (3, 28, 2, 1)$
85 : $P_{4009} = (8, 28, 2, 1)$
86 : $P_{4011} = (10, 28, 2, 1)$
87 : $P_{4100} = (3, 31, 2, 1)$
88 : $P_{4182} = (21, 1, 3, 1)$
89 : $P_{4251} = (26, 3, 3, 1)$
90 : $P_{4311} = (22, 5, 3, 1)$
91 : $P_{4361} = (8, 7, 3, 1)$
92 : $P_{4419} = (2, 9, 3, 1)$
93 : $P_{4421} = (4, 9, 3, 1)$
94 : $P_{4424} = (7, 9, 3, 1)$
95 : $P_{4472} = (23, 10, 3, 1)$
96 : $P_{4483} = (2, 11, 3, 1)$
97 : $P_{4498} = (17, 11, 3, 1)$
98 : $P_{4499} = (18, 11, 3, 1)$
99 : $P_{4537} = (24, 12, 3, 1)$
100 : $P_{4549} = (4, 13, 3, 1)$
101 : $P_{4584} = (7, 14, 3, 1)$
102 : $P_{4617} = (8, 15, 3, 1)$
103 : $P_{4650} = (9, 16, 3, 1)$
104 : $P_{4759} = (22, 19, 3, 1)$
105 : $P_{4781} = (12, 20, 3, 1)$
106 : $P_{4790} = (21, 20, 3, 1)$
107 : $P_{4793} = (24, 20, 3, 1)$
108 : $P_{4909} = (12, 24, 3, 1)$
109 : $P_{4938} = (9, 25, 3, 1)$
110 : $P_{4947} = (18, 25, 3, 1)$
111 : $P_{4955} = (26, 25, 3, 1)$
112 : $P_{4978} = (17, 26, 3, 1)$
113 : $P_{4998} = (5, 27, 3, 1)$
114 : $P_{5080} = (23, 29, 3, 1)$
115 : $P_{5094} = (5, 30, 3, 1)$
116 : $P_{5223} = (6, 2, 4, 1)$
117 : $P_{5228} = (11, 2, 4, 1)$
118 : $P_{5229} = (12, 2, 4, 1)$
119 : $P_{5287} = (6, 4, 4, 1)$
120 : $P_{5306} = (25, 4, 4, 1)$
121 : $P_{5311} = (30, 4, 4, 1)$
122 : $P_{5369} = (24, 6, 4, 1)$
123 : $P_{5416} = (7, 8, 4, 1)$
124 : $P_{5452} = (11, 9, 4, 1)$
125 : $P_{5489} = (16, 10, 4, 1)$
126 : $P_{5560} = (23, 12, 4, 1)$
127 : $P_{5586} = (17, 13, 4, 1)$
128 : $P_{5613} = (12, 14, 4, 1)$
129 : $P_{5640} = (7, 15, 4, 1)$
130 : $P_{5651} = (18, 15, 4, 1)$
131 : $P_{5653} = (20, 15, 4, 1)$
132 : $P_{5734} = (5, 18, 4, 1)$
133 : $P_{5794} = (1, 20, 4, 1)$
134 : $P_{5806} = (13, 20, 4, 1)$
135 : $P_{5826} = (1, 21, 4, 1)$
136 : $P_{5840} = (15, 21, 4, 1)$
137 : $P_{5894} = (5, 23, 4, 1)$
138 : $P_{5899} = (10, 23, 4, 1)$
139 : $P_{5903} = (14, 23, 4, 1)$
140 : $P_{5955} = (2, 25, 4, 1)$
141 : $P_{5966} = (13, 25, 4, 1)$
142 : $P_{5967} = (14, 25, 4, 1)$
143 : $P_{6000} = (15, 26, 4, 1)$
144 : $P_{6001} = (16, 26, 4, 1)$
145 : $P_{6015} = (30, 26, 4, 1)$
146 : $P_{6019} = (2, 27, 4, 1)$
147 : $P_{6037} = (20, 27, 4, 1)$
148 : $P_{6040} = (23, 27, 4, 1)$
149 : $P_{6066} = (17, 28, 4, 1)$
150 : $P_{6091} = (10, 29, 4, 1)$
151 : $P_{6099} = (18, 29, 4, 1)$
152 : $P_{6106} = (25, 29, 4, 1)$
153 : $P_{6137} = (24, 30, 4, 1)$
154 : $P_{6237} = (28, 1, 5, 1)$
155 : $P_{6258} = (17, 2, 5, 1)$
156 : $P_{6285} = (12, 3, 5, 1)$
157 : $P_{6340} = (3, 5, 5, 1)$
158 : $P_{6372} = (3, 6, 5, 1)$
159 : $P_{6378} = (9, 6, 5, 1)$
160 : $P_{6380} = (11, 6, 5, 1)$
161 : $P_{6427} = (26, 7, 5, 1)$
162 : $P_{6458} = (25, 8, 5, 1)$
163 : $P_{6533} = (4, 11, 5, 1)$
164 : $P_{6545} = (16, 11, 5, 1)$
165 : $P_{6550} = (21, 11, 5, 1)$
166 : $P_{6604} = (11, 13, 5, 1)$
167 : $P_{6649} = (24, 14, 5, 1)$
168 : $P_{6661} = (4, 15, 5, 1)$
169 : $P_{6666} = (9, 15, 5, 1)$
170 : $P_{6669} = (12, 15, 5, 1)$
171 : $P_{6746} = (25, 17, 5, 1)$
172 : $P_{6802} = (17, 19, 5, 1)$
173 : $P_{6859} = (10, 21, 5, 1)$
174 : $P_{6905} = (24, 22, 5, 1)$
175 : $P_{7016} = (7, 26, 5, 1)$
176 : $P_{7057} = (16, 27, 5, 1)$
177 : $P_{7112} = (7, 29, 5, 1)$
178 : $P_{7131} = (26, 29, 5, 1)$
179 : $P_{7133} = (28, 29, 5, 1)$
180 : $P_{7158} = (21, 30, 5, 1)$
181 : $P_{7179} = (10, 31, 5, 1)$
182 : $P_{7237} = (4, 1, 6, 1)$
183 : $P_{7250} = (17, 1, 6, 1)$
184 : $P_{7253} = (20, 1, 6, 1)$
185 : $P_{7274} = (9, 2, 6, 1)$
186 : $P_{7352} = (23, 4, 6, 1)$
187 : $P_{7365} = (4, 5, 6, 1)$

188 : $P_{7406} = (13, 6, 6, 1)$
189 : $P_{7440} = (15, 7, 6, 1)$
190 : $P_{7447} = (22, 7, 6, 1)$
191 : $P_{7449} = (24, 7, 6, 1)$
192 : $P_{7472} = (15, 8, 6, 1)$
193 : $P_{7508} = (19, 9, 6, 1)$
194 : $P_{7550} = (29, 10, 6, 1)$
195 : $P_{7558} = (5, 11, 6, 1)$
196 : $P_{7562} = (9, 11, 6, 1)$
197 : $P_{7566} = (13, 11, 6, 1)$
198 : $P_{7647} = (30, 13, 6, 1)$
199 : $P_{7654} = (5, 14, 6, 1)$
200 : $P_{7730} = (17, 16, 6, 1)$
201 : $P_{7767} = (22, 17, 6, 1)$
202 : $P_{7817} = (8, 19, 6, 1)$
203 : $P_{7832} = (23, 19, 6, 1)$
204 : $P_{7839} = (30, 19, 6, 1)$
205 : $P_{7893} = (20, 21, 6, 1)$
206 : $P_{7966} = (29, 23, 6, 1)$
207 : $P_{8052} = (19, 26, 6, 1)$
208 : $P_{8073} = (8, 27, 6, 1)$
209 : $P_{8217} = (24, 31, 6, 1)$
210 : $P_{8288} = (31, 1, 7, 1)$
211 : $P_{8316} = (27, 2, 7, 1)$
212 : $P_{8332} = (11, 3, 7, 1)$
213 : $P_{8339} = (18, 3, 7, 1)$
214 : $P_{8345} = (24, 3, 7, 1)$
215 : $P_{8402} = (17, 5, 7, 1)$
216 : $P_{8465} = (16, 7, 7, 1)$
217 : $P_{8492} = (11, 8, 7, 1)$
218 : $P_{8565} = (20, 10, 7, 1)$
219 : $P_{8611} = (2, 12, 7, 1)$
220 : $P_{8630} = (21, 12, 7, 1)$
221 : $P_{8631} = (22, 12, 7, 1)$
222 : $P_{8675} = (2, 14, 7, 1)$
223 : $P_{8698} = (25, 14, 7, 1)$
224 : $P_{8699} = (26, 14, 7, 1)$
225 : $P_{8735} = (30, 15, 7, 1)$
226 : $P_{8782} = (13, 17, 7, 1)$
227 : $P_{8787} = (18, 17, 7, 1)$
228 : $P_{8799} = (30, 17, 7, 1)$
229 : $P_{8875} = (10, 20, 7, 1)$
230 : $P_{8882} = (17, 20, 7, 1)$
231 : $P_{8891} = (26, 20, 7, 1)$
232 : $P_{8944} = (15, 22, 7, 1)$
233 : $P_{8969} = (8, 23, 7, 1)$
234 : $P_{8977} = (16, 23, 7, 1)$
235 : $P_{8986} = (25, 23, 7, 1)$
236 : $P_{9040} = (15, 25, 7, 1)$
237 : $P_{9046} = (21, 25, 7, 1)$
238 : $P_{9052} = (27, 25, 7, 1)$
239 : $P_{9079} = (22, 26, 7, 1)$
240 : $P_{9113} = (24, 27, 7, 1)$
241 : $P_{9134} = (13, 28, 7, 1)$
242 : $P_{9195} = (10, 30, 7, 1)$
243 : $P_{9205} = (20, 30, 7, 1)$
244 : $P_{9216} = (31, 30, 7, 1)$
245 : $P_{9225} = (8, 31, 7, 1)$
246 : $P_{9331} = (18, 2, 8, 1)$
247 : $P_{9390} = (13, 4, 8, 1)$
248 : $P_{9432} = (23, 5, 8, 1)$
249 : $P_{9451} = (10, 6, 8, 1)$
250 : $P_{9504} = (31, 7, 8, 1)$
251 : $P_{9507} = (2, 8, 8, 1)$
252 : $P_{9550} = (13, 9, 8, 1)$
253 : $P_{9571} = (2, 10, 8, 1)$
254 : $P_{9634} = (1, 12, 8, 1)$
255 : $P_{9643} = (10, 12, 8, 1)$
256 : $P_{9666} = (1, 13, 8, 1)$
257 : $P_{9690} = (25, 13, 8, 1)$
258 : $P_{9724} = (27, 14, 8, 1)$
259 : $P_{9779} = (18, 16, 8, 1)$
260 : $P_{9848} = (23, 18, 8, 1)$
261 : $P_{9872} = (15, 19, 8, 1)$
262 : $P_{9914} = (25, 20, 8, 1)$
263 : $P_{9948} = (27, 21, 8, 1)$
264 : $P_{10048} = (31, 24, 8, 1)$
265 : $P_{10086} = (5, 26, 8, 1)$
266 : $P_{10160} = (15, 28, 8, 1)$
267 : $P_{10246} = (5, 31, 8, 1)$
268 : $P_{10335} = (30, 1, 9, 1)$
269 : $P_{10358} = (21, 2, 9, 1)$
270 : $P_{10396} = (27, 3, 9, 1)$
271 : $P_{10420} = (19, 4, 9, 1)$
272 : $P_{10491} = (26, 6, 9, 1)$
273 : $P_{10581} = (20, 9, 9, 1)$
274 : $P_{10594} = (1, 10, 9, 1)$
275 : $P_{10598} = (5, 10, 9, 1)$
276 : $P_{10626} = (1, 11, 9, 1)$
277 : $P_{10648} = (23, 11, 9, 1)$
278 : $P_{10688} = (31, 12, 9, 1)$
279 : $P_{10758} = (5, 15, 9, 1)$
280 : $P_{10778} = (25, 15, 9, 1)$
281 : $P_{10782} = (29, 15, 9, 1)$
282 : $P_{10792} = (7, 16, 9, 1)$
283 : $P_{10795} = (10, 16, 9, 1)$
284 : $P_{10797} = (12, 16, 9, 1)$
285 : $P_{10878} = (29, 18, 9, 1)$
286 : $P_{10912} = (31, 19, 9, 1)$
287 : $P_{11002} = (25, 22, 9, 1)$
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694 : $P_{25008} = (15, 12, 23, 1)$
695 : $P_{25011} = (18, 12, 23, 1)$
696 : $P_{25021} = (28, 12, 23, 1)$
697 : $P_{25041} = (16, 13, 23, 1)$
698 : $P_{25149} = (28, 16, 23, 1)$
699 : $P_{25173} = (20, 17, 23, 1)$
700 : $P_{25242} = (25, 19, 23, 1)$
701 : $P_{25258} = (9, 20, 23, 1)$
702 : $P_{25283} = (2, 21, 23, 1)$
703 : $P_{25310} = (29, 21, 23, 1)$
704 : $P_{25311} = (30, 21, 23, 1)$
705 : $P_{25347} = (2, 23, 23, 1)$
706 : $P_{25412} = (3, 25, 23, 1)$
707 : $P_{25426} = (17, 25, 23, 1)$
708 : $P_{25428} = (19, 25, 23, 1)$
709 : $P_{25444} = (3, 26, 23, 1)$
710 : $P_{25546} = (9, 29, 23, 1)$
711 : $P_{25553} = (16, 29, 23, 1)$
712 : $P_{25561} = (24, 29, 23, 1)$
713 : $P_{25587} = (18, 30, 23, 1)$
714 : $P_{25680} = (15, 1, 24, 1)$
715 : $P_{25734} = (5, 3, 24, 1)$
716 : $P_{25807} = (14, 5, 24, 1)$
717 : $P_{25809} = (16, 5, 24, 1)$
718 : $P_{25824} = (31, 5, 24, 1)$
719 : $P_{25830} = (5, 6, 24, 1)$
720 : $P_{25833} = (8, 6, 24, 1)$
721 : $P_{25837} = (12, 6, 24, 1)$
722 : $P_{25895} = (6, 8, 24, 1)$
723 : $P_{25965} = (12, 10, 24, 1)$
724 : $P_{25975} = (22, 10, 24, 1)$
725 : $P_{25980} = (27, 10, 24, 1)$
726 : $P_{25999} = (14, 11, 24, 1)$
727 : $P_{26046} = (29, 12, 24, 1)$

728 : $P_{26072} = (23, 13, 24, 1)$
729 : $P_{26087} = (6, 14, 24, 1)$
730 : $P_{26089} = (8, 14, 24, 1)$
731 : $P_{26096} = (15, 14, 24, 1)$
732 : $P_{26132} = (19, 15, 24, 1)$
733 : $P_{26184} = (7, 17, 24, 1)$
734 : $P_{26204} = (27, 17, 24, 1)$
735 : $P_{26206} = (29, 17, 24, 1)$
736 : $P_{26250} = (9, 19, 24, 1)$
737 : $P_{26321} = (16, 21, 24, 1)$
738 : $P_{26344} = (7, 22, 24, 1)$
739 : $P_{26348} = (11, 22, 24, 1)$
740 : $P_{26350} = (13, 22, 24, 1)$
741 : $P_{26405} = (4, 24, 24, 1)$
742 : $P_{26474} = (9, 26, 24, 1)$
743 : $P_{26488} = (23, 26, 24, 1)$
744 : $P_{26496} = (31, 26, 24, 1)$
745 : $P_{26510} = (13, 27, 24, 1)$
746 : $P_{26533} = (4, 28, 24, 1)$
747 : $P_{26548} = (19, 28, 24, 1)$
748 : $P_{26551} = (22, 28, 24, 1)$
749 : $P_{26572} = (11, 29, 24, 1)$
750 : $P_{26691} = (2, 1, 25, 1)$
751 : $P_{26694} = (5, 1, 25, 1)$
752 : $P_{26695} = (6, 1, 25, 1)$
753 : $P_{26749} = (28, 2, 25, 1)$
754 : $P_{26755} = (2, 3, 25, 1)$
755 : $P_{26790} = (5, 4, 25, 1)$
756 : $P_{26846} = (29, 5, 25, 1)$
757 : $P_{26887} = (6, 7, 25, 1)$
758 : $P_{26933} = (20, 8, 25, 1)$
759 : $P_{26948} = (3, 9, 25, 1)$
760 : $P_{26961} = (16, 9, 25, 1)$
761 : $P_{26963} = (18, 9, 25, 1)$
762 : $P_{26980} = (3, 10, 25, 1)$
763 : $P_{27071} = (30, 12, 25, 1)$
764 : $P_{27092} = (19, 13, 25, 1)$
765 : $P_{27160} = (23, 15, 25, 1)$
766 : $P_{27183} = (14, 16, 25, 1)$
767 : $P_{27263} = (30, 18, 25, 1)$
768 : $P_{27276} = (11, 19, 25, 1)$
769 : $P_{27436} = (11, 24, 25, 1)$
770 : $P_{27448} = (23, 24, 25, 1)$
771 : $P_{27454} = (29, 24, 25, 1)$
772 : $P_{27473} = (16, 25, 25, 1)$
773 : $P_{27539} = (18, 27, 25, 1)$
774 : $P_{27573} = (20, 28, 25, 1)$
775 : $P_{27631} = (14, 30, 25, 1)$
776 : $P_{27636} = (19, 30, 25, 1)$
777 : $P_{27645} = (28, 30, 25, 1)$
778 : $P_{27720} = (7, 1, 26, 1)$
779 : $P_{27806} = (29, 3, 26, 1)$
780 : $P_{27827} = (18, 4, 26, 1)$
781 : $P_{27880} = (7, 6, 26, 1)$
782 : $P_{27890} = (17, 6, 26, 1)$
783 : $P_{27896} = (23, 6, 26, 1)$
784 : $P_{27965} = (28, 8, 26, 1)$
785 : $P_{27974} = (5, 9, 26, 1)$
786 : $P_{27996} = (27, 9, 26, 1)$
787 : $P_{28000} = (31, 9, 26, 1)$
788 : $P_{28025} = (24, 10, 26, 1)$
789 : $P_{28052} = (19, 11, 26, 1)$
790 : $P_{28070} = (5, 12, 26, 1)$
791 : $P_{28100} = (3, 13, 26, 1)$
792 : $P_{28132} = (3, 14, 26, 1)$
793 : $P_{28195} = (2, 16, 26, 1)$
794 : $P_{28248} = (23, 17, 26, 1)$
795 : $P_{28259} = (2, 18, 26, 1)$
796 : $P_{28281} = (24, 18, 26, 1)$
797 : $P_{28284} = (27, 18, 26, 1)$
798 : $P_{28349} = (28, 20, 26, 1)$
799 : $P_{28397} = (12, 22, 26, 1)$
800 : $P_{28403} = (18, 22, 26, 1)$
801 : $P_{28416} = (31, 22, 26, 1)$
802 : $P_{28434} = (17, 23, 26, 1)$
803 : $P_{28468} = (19, 24, 26, 1)$
804 : $P_{28525} = (12, 26, 26, 1)$
805 : $P_{28670} = (29, 30, 26, 1)$
806 : $P_{28836} = (3, 4, 27, 1)$
807 : $P_{28886} = (21, 5, 27, 1)$
808 : $P_{28912} = (15, 6, 27, 1)$
809 : $P_{28916} = (19, 6, 27, 1)$
810 : $P_{28926} = (29, 6, 27, 1)$
811 : $P_{28932} = (3, 7, 27, 1)$
812 : $P_{28966} = (5, 8, 27, 1)$
813 : $P_{29008} = (15, 9, 27, 1)$
814 : $P_{29016} = (23, 9, 27, 1)$
815 : $P_{29018} = (25, 9, 27, 1)$
816 : $P_{29053} = (28, 10, 27, 1)$
817 : $P_{29126} = (5, 13, 27, 1)$
818 : $P_{29139} = (18, 13, 27, 1)$
819 : $P_{29143} = (22, 13, 27, 1)$
820 : $P_{29211} = (26, 15, 27, 1)$
821 : $P_{29230} = (13, 16, 27, 1)$
822 : $P_{29238} = (21, 16, 27, 1)$
823 : $P_{29242} = (25, 16, 27, 1)$
824 : $P_{29251} = (2, 17, 27, 1)$
825 : $P_{29258} = (9, 17, 27, 1)$
826 : $P_{29259} = (10, 17, 27, 1)$
827 : $P_{29315} = (2, 19, 27, 1)$
828 : $P_{29385} = (8, 21, 27, 1)$
829 : $P_{29396} = (19, 21, 27, 1)$
830 : $P_{29403} = (26, 21, 27, 1)$
831 : $P_{29437} = (28, 22, 27, 1)$
832 : $P_{29474} = (1, 24, 27, 1)$
833 : $P_{29482} = (9, 24, 27, 1)$
834 : $P_{29506} = (1, 25, 27, 1)$
835 : $P_{29509} = (4, 25, 27, 1)$

836 : $P_{29579} = (10, 27, 27, 1)$
837 : $P_{29591} = (22, 27, 27, 1)$
838 : $P_{29598} = (29, 27, 27, 1)$
839 : $P_{29637} = (4, 29, 27, 1)$
840 : $P_{29641} = (8, 29, 27, 1)$
841 : $P_{29646} = (13, 29, 27, 1)$
842 : $P_{29688} = (23, 30, 27, 1)$
843 : $P_{29715} = (18, 31, 27, 1)$
844 : $P_{29770} = (9, 1, 28, 1)$
845 : $P_{29831} = (6, 3, 28, 1)$
846 : $P_{29841} = (16, 3, 28, 1)$
847 : $P_{29848} = (23, 3, 28, 1)$
848 : $P_{29878} = (21, 4, 28, 1)$
849 : $P_{29895} = (6, 5, 28, 1)$
850 : $P_{29939} = (18, 6, 28, 1)$
851 : $P_{29967} = (14, 7, 28, 1)$
852 : $P_{29973} = (20, 7, 28, 1)$
853 : $P_{29980} = (27, 7, 28, 1)$
854 : $P_{29994} = (9, 8, 28, 1)$
855 : $P_{30007} = (22, 8, 28, 1)$
856 : $P_{30015} = (30, 8, 28, 1)$
857 : $P_{30031} = (14, 9, 28, 1)$
858 : $P_{30139} = (26, 12, 28, 1)$
859 : $P_{30208} = (31, 14, 28, 1)$
860 : $P_{30245} = (4, 16, 28, 1)$
861 : $P_{30284} = (11, 17, 28, 1)$
862 : $P_{30294} = (21, 17, 28, 1)$
863 : $P_{30304} = (31, 17, 28, 1)$
864 : $P_{30313} = (8, 18, 28, 1)$
865 : $P_{30342} = (5, 19, 28, 1)$
866 : $P_{30353} = (16, 19, 28, 1)$
867 : $P_{30357} = (20, 19, 28, 1)$
868 : $P_{30373} = (4, 20, 28, 1)$
869 : $P_{30387} = (18, 20, 28, 1)$
870 : $P_{30392} = (23, 20, 28, 1)$
871 : $P_{30438} = (5, 22, 28, 1)$
872 : $P_{30459} = (26, 22, 28, 1)$
873 : $P_{30463} = (30, 22, 28, 1)$
874 : $P_{30499} = (2, 24, 28, 1)$
875 : $P_{30563} = (2, 26, 28, 1)$
876 : $P_{30569} = (8, 26, 28, 1)$
877 : $P_{30572} = (11, 26, 28, 1)$
878 : $P_{30652} = (27, 28, 28, 1)$
879 : $P_{30711} = (22, 30, 28, 1)$
880 : $P_{30798} = (13, 1, 29, 1)$
881 : $P_{30807} = (22, 1, 29, 1)$
882 : $P_{30811} = (26, 1, 29, 1)$
883 : $P_{30825} = (8, 2, 29, 1)$
884 : $P_{30895} = (14, 4, 29, 1)$
885 : $P_{30923} = (10, 5, 29, 1)$
886 : $P_{31002} = (25, 7, 29, 1)$
887 : $P_{31062} = (21, 9, 29, 1)$
888 : $P_{31080} = (7, 10, 29, 1)$
889 : $P_{31081} = (8, 10, 29, 1)$
890 : $P_{31087} = (14, 10, 29, 1)$
891 : $P_{31150} = (13, 12, 29, 1)$
892 : $P_{31176} = (7, 13, 29, 1)$
893 : $P_{31219} = (18, 14, 29, 1)$
894 : $P_{31243} = (10, 15, 29, 1)$
895 : $P_{31280} = (15, 16, 29, 1)$
896 : $P_{31373} = (12, 19, 29, 1)$
897 : $P_{31511} = (22, 23, 29, 1)$
898 : $P_{31591} = (6, 26, 29, 1)$
899 : $P_{31643} = (26, 27, 29, 1)$
900 : $P_{31655} = (6, 28, 29, 1)$
901 : $P_{31667} = (18, 28, 29, 1)$
902 : $P_{31670} = (21, 28, 29, 1)$
903 : $P_{31683} = (2, 29, 29, 1)$
904 : $P_{31738} = (25, 30, 29, 1)$
905 : $P_{31747} = (2, 31, 29, 1)$
906 : $P_{31757} = (12, 31, 29, 1)$
907 : $P_{31760} = (15, 31, 29, 1)$
908 : $P_{31856} = (15, 2, 30, 1)$
909 : $P_{31906} = (1, 4, 30, 1)$
910 : $P_{31934} = (29, 4, 30, 1)$
911 : $P_{31938} = (1, 5, 30, 1)$
912 : $P_{31956} = (19, 5, 30, 1)$
913 : $P_{32010} = (9, 7, 30, 1)$
914 : $P_{32049} = (16, 8, 30, 1)$
915 : $P_{32155} = (26, 11, 30, 1)$
916 : $P_{32208} = (15, 13, 30, 1)$
917 : $P_{32234} = (9, 14, 30, 1)$
918 : $P_{32278} = (21, 15, 30, 1)$
919 : $P_{32347} = (26, 17, 30, 1)$
920 : $P_{32398} = (13, 19, 30, 1)$
921 : $P_{32500} = (19, 22, 30, 1)$
922 : $P_{32524} = (11, 23, 30, 1)$
923 : $P_{32561} = (16, 24, 30, 1)$
924 : $P_{32606} = (29, 25, 30, 1)$
925 : $P_{32630} = (21, 26, 30, 1)$
926 : $P_{32645} = (4, 27, 30, 1)$
927 : $P_{32684} = (11, 28, 30, 1)$
928 : $P_{32750} = (13, 30, 30, 1)$
929 : $P_{32773} = (4, 31, 30, 1)$
930 : $P_{32843} = (10, 1, 31, 1)$
931 : $P_{32870} = (5, 2, 31, 1)$
932 : $P_{32884} = (19, 2, 31, 1)$
933 : $P_{32888} = (23, 2, 31, 1)$
934 : $P_{32972} = (11, 5, 31, 1)$
935 : $P_{33018} = (25, 6, 31, 1)$
936 : $P_{33030} = (5, 7, 31, 1)$
937 : $P_{33042} = (17, 7, 31, 1)$
938 : $P_{33046} = (21, 7, 31, 1)$
939 : $P_{33095} = (6, 9, 31, 1)$
940 : $P_{33115} = (26, 9, 31, 1)$
941 : $P_{33118} = (29, 9, 31, 1)$
942 : $P_{33163} = (10, 11, 31, 1)$
943 : $P_{33201} = (16, 12, 31, 1)$

$944: P_{33241} = (24, 13, 31, 1)$
$945: P_{33260} = (11, 14, 31, 1)$
$946: P_{33287} = (6, 15, 31, 1)$
$947: P_{33364} = (19, 17, 31, 1)$
$948: P_{33378} = (1, 18, 31, 1)$
$949: P_{33398} = (21, 18, 31, 1)$
$950: P_{33410} = (1, 19, 31, 1)$
$951: P_{33435} = (26, 19, 31, 1)$
$952: P_{33470} = (29, 20, 31, 1)$
$953: P_{33487} = (14, 21, 31, 1)$
$954: P_{33496} = (23, 21, 31, 1)$
$955: P_{33497} = (24, 21, 31, 1)$
$956: P_{33522} = (17, 22, 31, 1)$
$957: P_{33679} = (14, 27, 31, 1)$
$958: P_{33713} = (16, 28, 31, 1)$
$959: P_{33818} = (25, 31, 31, 1)$

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_3

Line 1 intersects

Line	ℓ_0
in point	P_3

The surface has 1025 points:
Too many to print.