Rank-65863 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 303108629

General information

Number of lines	3
Number of points	289
Number of singular points	1
Number of Eckardt points	0
Number of double points	2
Number of single points	47
Number of points off lines	240
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^3
Type of lines on points	2^2, 1^{47}, 0^{240}

Singular Points

The surface has 1 singular points:

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

The 3 Lines

The lines and their Pluecker coordinates are:

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

$$\ell_1 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69904} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69904} = \mathbf{Pl}(0,0,0,1,0,0)_{33}$$
$$\ell_2 = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \mathbf{Pl}(0,1,0,1,0,0)_{49}$$

Rank of lines: (0, 69904, 69921)
Rank of points on Klein quadric: (0, 33, 49)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 2 Double points:
The double points on the surface are:

$P_1 = (0,1,0,0) = \ell_0 \cap \ell_1$
$P_3 = (0,0,0,1) = \ell_1 \cap \ell_2$

Single Points

The surface has 47 single points:
The single points on the surface are:

0 : $P_0 = (1,0,0,0)$ lies on line ℓ_0
1 : $P_5 = (1,1,0,0)$ lies on line ℓ_0
2 : $P_6 = (2,1,0,0)$ lies on line ℓ_0
3 : $P_7 = (3,1,0,0)$ lies on line ℓ_0
4 : $P_8 = (4,1,0,0)$ lies on line ℓ_0
5 : $P_9 = (5,1,0,0)$ lies on line ℓ_0
6 : $P_{10} = (6,1,0,0)$ lies on line ℓ_0
7 : $P_{11} = (7,1,0,0)$ lies on line ℓ_0
8 : $P_{12} = (8,1,0,0)$ lies on line ℓ_0
9 : $P_{13} = (9,1,0,0)$ lies on line ℓ_0
10 : $P_{14} = (10,1,0,0)$ lies on line ℓ_0
11 : $P_{15} = (11,1,0,0)$ lies on line ℓ_0
12 : $P_{16} = (12,1,0,0)$ lies on line ℓ_0
13 : $P_{17} = (13,1,0,0)$ lies on line ℓ_0
14 : $P_{18} = (14,1,0,0)$ lies on line ℓ_0
15 : $P_{19} = (15,1,0,0)$ lies on line ℓ_0
16 : $P_{35} = (0,1,1,0)$ lies on line ℓ_2
17 : $P_{290} = (0,1,0,1)$ lies on line ℓ_1
18 : $P_{306} = (0,2,0,1)$ lies on line ℓ_1
19 : $P_{322} = (0,3,0,1)$ lies on line ℓ_1
20 : $P_{338} = (0,4,0,1)$ lies on line ℓ_1
21 : $P_{354} = (0,5,0,1)$ lies on line ℓ_1
22 : $P_{370} = (0,6,0,1)$ lies on line ℓ_1
23 : $P_{386} = (0,7,0,1)$ lies on line ℓ_1
24 : $P_{402} = (0,8,0,1)$ lies on line ℓ_1
25 : $P_{418} = (0,9,0,1)$ lies on line ℓ_1
26 : $P_{434} = (0,10,0,1)$ lies on line ℓ_1
27 : $P_{450} = (0,11,0,1)$ lies on line ℓ_1
28 : $P_{466} = (0,12,0,1)$ lies on line ℓ_1
29 : $P_{482} = (0,13,0,1)$ lies on line ℓ_1
30 : $P_{498} = (0,14,0,1)$ lies on line ℓ_1
31 : $P_{514} = (0,15,0,1)$ lies on line ℓ_1
32 : $P_{546} = (0,1,1,1)$ lies on line ℓ_2
33 : $P_{817} = (0,2,2,1)$ lies on line ℓ_2
34 : $P_{1089} = (0,3,3,1)$ lies on line ℓ_2
35 : $P_{1361} = (0,4,4,1)$ lies on line ℓ_2
36 : $P_{1633} = (0,5,5,1)$ lies on line ℓ_2
37 : $P_{1905} = (0,6,6,1)$ lies on line ℓ_2
38 : $P_{2177} = (0,7,7,1)$ lies on line ℓ_2
39 : $P_{2449} = (0,8,8,1)$ lies on line ℓ_2
40 : $P_{2721} = (0,9,9,1)$ lies on line ℓ_2
41 : $P_{2993} = (0,10,10,1)$ lies on line ℓ_2
42 : $P_{3265} = (0,11,11,1)$ lies on line ℓ_2
43 : $P_{3537} = (0,12,12,1)$ lies on line ℓ_2
44 : $P_{3809} = (0,13,13,1)$ lies on line ℓ_2
45 : $P_{4081} = (0,14,14,1)$ lies on line ℓ_2
46 : $P_{4353} = (0,15,15,1)$ lies on line ℓ_2

The single points on the surface are:

Points on surface but on no line

The surface has 240 points not on any line:
The points on the surface but not on lines are:

$0: P_{4} = (1,1,1,1)$
$1: P_{65} = (14,2,1,0)$
$2: P_{78} = (11,3,1,0)$
$3: P_{85} = (2,4,1,0)$
$4: P_{109} = (10,5,1,0)$
$5: P_{117} = (2,6,1,0)$
$6: P_{140} = (9,7,1,0)$
$7: P_{158} = (11,8,1,0)$
$8: P_{167} = (4,9,1,0)$
$9: P_{180} = (1,10,1,0)$
$10: P_{196} = (1,11,1,0)$
$11: P_{225} = (14,12,1,0)$
$12: P_{231} = (4,13,1,0)$
$13: P_{252} = (9,14,1,0)$
$14: P_{269} = (10,15,1,0)$
$15: P_{531} = (1,0,1,1)$
$16: P_{570} = (9,2,1,1)$
$17: P_{572} = (11,2,1,1)$
$18: P_{603} = (10,4,1,1)$
$19: P_{607} = (14,4,1,1)$
$20: P_{675} = (2,9,1,1)$
$21: P_{684} = (11,9,1,1)$
$22: P_{693} = (4,10,1,1)$
$23: P_{703} = (14,10,1,1)$
$24: P_{707} = (2,11,1,1)$
$25: P_{714} = (9,11,1,1)$
$26: P_{757} = (4,14,1,1)$
$27: P_{763} = (10,14,1,1)$
$28: P_{790} = (5,0,2,1)$
$29: P_{821} = (4,2,2,1)$
$30: P_{844} = (11,3,2,1)$
$31: P_{846} = (13,3,2,1)$
$32: P_{870} = (5,5,2,1)$
$33: P_{880} = (15,5,2,1)$
$34: P_{885} = (4,6,2,1)$
$35: P_{889} = (8,6,2,1)$
$36: P_{915} = (2,8,2,1)$
$37: P_{924} = (11,8,2,1)$
$38: P_{947} = (2,10,2,1)$
$39: P_{960} = (15,10,2,1)$
$40: P_{1017} = (8,14,2,1)$
$41: P_{1022} = (13,14,2,1)$
$42: P_{1049} = (8,0,3,1)$
$43: P_{1066} = (9,1,3,1)$
$44: P_{1067} = (10,1,3,1)$
$45: P_{1094} = (5,3,3,1)$
$46: P_{1106} = (1,4,3,1)$
$47: P_{1118} = (13,4,3,1)$
$48: P_{1122} = (1,5,3,1)$
$49: P_{1135} = (14,5,3,1)$
$50: P_{1142} = (5,6,3,1)$
$51: P_{1152} = (15,6,3,1)$
$52: P_{1177} = (8,8,3,1)$
$53: P_{1178} = (9,8,3,1)$
$54: P_{1198} = (13,9,3,1)$
$55: P_{1200} = (15,9,3,1)$
$56: P_{1227} = (10,11,3,1)$
$57: P_{1231} = (14,11,3,1)$
$58: P_{1305} = (8,0,4,1)$
$59: P_{1336} = (7,2,4,1)$
$60: P_{1344} = (15,2,4,1)$
$61: P_{1370} = (9,4,4,1)$
$62: P_{1384} = (7,5,4,1)$
$63: P_{1387} = (10,5,4,1)$
$64: P_{1428} = (3,8,4,1)$
$65: P_{1433} = (8,8,4,1)$
$66: P_{1476} = (3,11,4,1)$
$67: P_{1477} = (4,11,4,1)$
$68: P_{1514} = (9,13,4,1)$
$69: P_{1520} = (15,13,4,1)$
$70: P_{1541} = (4,15,4,1)$
$71: P_{1547} = (10,15,4,1)$
$72: P_{1568} = (15,0,5,1)$
$73: P_{1580} = (11,1,5,1)$
$74: P_{1583} = (14,1,5,1)$
$75: P_{1641} = (8,5,5,1)$
$76: P_{1682} = (1,8,5,1)$
$77: P_{1683} = (2,8,5,1)$
$78: P_{1698} = (1,9,5,1)$
$79: P_{1704} = (7,9,5,1)$
$80: P_{1715} = (2,10,5,1)$
$81: P_{1724} = (11,10,5,1)$
$82: P_{1764} = (3,13,5,1)$
$83: P_{1769} = (8,13,5,1)$
$84: P_{1780} = (3,14,5,1)$
$85: P_{1784} = (7,14,5,1)$
$86: P_{1807} = (14,15,5,1)$
$87: P_{1808} = (15,15,5,1)$
$88: P_{1812} = (3,0,6,1)$
$89: P_{1860} = (3,3,6,1)$
$90: P_{1866} = (9,3,6,1)$
$91: P_{1883} = (10,4,6,1)$
$92: P_{1884} = (11,4,6,1)$
$93: P_{1918} = (13,6,6,1)$
$94: P_{1976} = (7,10,6,1)$
$95: P_{1978} = (9,10,6,1)$

96 : $P_{1990} = (5, 11, 6, 1)$
97 : $P_{1998} = (13, 11, 6, 1)$
98 : $P_{2019} = (2, 13, 6, 1)$
99 : $P_{2024} = (7, 13, 6, 1)$
100 : $P_{2038} = (5, 14, 6, 1)$
101 : $P_{2043} = (10, 14, 6, 1)$
102 : $P_{2051} = (2, 15, 6, 1)$
103 : $P_{2060} = (11, 15, 6, 1)$
104 : $P_{2073} = (8, 0, 7, 1)$
105 : $P_{2139} = (10, 4, 7, 1)$
106 : $P_{2144} = (15, 4, 7, 1)$
107 : $P_{2154} = (9, 5, 7, 1)$
108 : $P_{2156} = (11, 5, 7, 1)$
109 : $P_{2189} = (12, 7, 7, 1)$
110 : $P_{2195} = (2, 8, 7, 1)$
111 : $P_{2201} = (8, 8, 7, 1)$
112 : $P_{2227} = (2, 10, 7, 1)$
113 : $P_{2231} = (6, 10, 7, 1)$
114 : $P_{2253} = (12, 11, 7, 1)$
115 : $P_{2256} = (15, 11, 7, 1)$
116 : $P_{2263} = (6, 12, 7, 1)$
117 : $P_{2266} = (9, 12, 7, 1)$
118 : $P_{2299} = (10, 14, 7, 1)$
119 : $P_{2300} = (11, 14, 7, 1)$
120 : $P_{2324} = (3, 0, 8, 1)$
121 : $P_{2339} = (2, 1, 8, 1)$
122 : $P_{2347} = (10, 1, 8, 1)$
123 : $P_{2358} = (5, 2, 8, 1)$
124 : $P_{2365} = (12, 2, 8, 1)$
125 : $P_{2371} = (2, 3, 8, 1)$
126 : $P_{2372} = (3, 3, 8, 1)$
127 : $P_{2438} = (5, 7, 8, 1)$
128 : $P_{2448} = (15, 7, 8, 1)$
129 : $P_{2464} = (15, 8, 8, 1)$
130 : $P_{2501} = (4, 11, 8, 1)$
131 : $P_{2507} = (10, 11, 8, 1)$
132 : $P_{2546} = (1, 14, 8, 1)$
133 : $P_{2557} = (12, 14, 8, 1)$
134 : $P_{2562} = (1, 15, 8, 1)$
135 : $P_{2565} = (4, 15, 8, 1)$
136 : $P_{2592} = (15, 0, 9, 1)$
137 : $P_{2634} = (9, 3, 9, 1)$
138 : $P_{2636} = (11, 3, 9, 1)$
139 : $P_{2644} = (3, 4, 9, 1)$
140 : $P_{2653} = (12, 4, 9, 1)$
141 : $P_{2692} = (3, 7, 9, 1)$
142 : $P_{2703} = (14, 7, 9, 1)$
143 : $P_{2716} = (11, 8, 9, 1)$
144 : $P_{2717} = (12, 8, 9, 1)$
145 : $P_{2735} = (14, 9, 9, 1)$
146 : $P_{2742} = (5, 10, 9, 1)$
147 : $P_{2746} = (9, 10, 9, 1)$
148 : $P_{2822} = (5, 15, 9, 1)$
149 : $P_{2832} = (15, 15, 9, 1)$
150 : $P_{2834} = (1, 0, 10, 1)$
151 : $P_{2850} = (1, 1, 10, 1)$
152 : $P_{2860} = (11, 1, 10, 1)$
153 : $P_{2916} = (3, 5, 10, 1)$
154 : $P_{2923} = (10, 5, 10, 1)$
155 : $P_{2932} = (3, 6, 10, 1)$
156 : $P_{2942} = (13, 6, 10, 1)$
157 : $P_{2953} = (8, 7, 10, 1)$
158 : $P_{2957} = (12, 7, 10, 1)$
159 : $P_{3004} = (11, 10, 10, 1)$
160 : $P_{3021} = (12, 11, 10, 1)$
161 : $P_{3022} = (13, 11, 10, 1)$
162 : $P_{3081} = (8, 15, 10, 1)$
163 : $P_{3083} = (10, 15, 10, 1)$
164 : $P_{3090} = (1, 0, 11, 1)$
165 : $P_{3106} = (1, 1, 11, 1)$
166 : $P_{3115} = (10, 1, 11, 1)$
167 : $P_{3148} = (11, 3, 11, 1)$
168 : $P_{3152} = (15, 3, 11, 1)$
169 : $P_{3222} = (5, 8, 11, 1)$
170 : $P_{3228} = (11, 8, 11, 1)$
171 : $P_{3255} = (6, 10, 11, 1)$
172 : $P_{3256} = (7, 10, 11, 1)$
173 : $P_{3275} = (10, 11, 11, 1)$
174 : $P_{3287} = (6, 12, 11, 1)$
175 : $P_{3296} = (15, 12, 11, 1)$
176 : $P_{3302} = (5, 13, 11, 1)$
177 : $P_{3304} = (7, 13, 11, 1)$
178 : $P_{3360} = (15, 0, 12, 1)$
179 : $P_{3387} = (10, 2, 12, 1)$
180 : $P_{3388} = (11, 2, 12, 1)$
181 : $P_{3454} = (13, 6, 12, 1)$
182 : $P_{3455} = (14, 6, 12, 1)$
183 : $P_{3483} = (10, 8, 12, 1)$
184 : $P_{3487} = (14, 8, 12, 1)$
185 : $P_{3492} = (3, 9, 12, 1)$
186 : $P_{3500} = (11, 9, 12, 1)$
187 : $P_{3508} = (3, 10, 12, 1)$
188 : $P_{3511} = (6, 10, 12, 1)$
189 : $P_{3525} = (4, 11, 12, 1)$
190 : $P_{3534} = (13, 11, 12, 1)$
191 : $P_{3543} = (6, 12, 12, 1)$
192 : $P_{3589} = (4, 15, 12, 1)$
193 : $P_{3600} = (15, 15, 12, 1)$
194 : $P_{3606} = (5, 0, 13, 1)$
195 : $P_{3641} = (8, 2, 13, 1)$
196 : $P_{3644} = (11, 2, 13, 1)$
197 : $P_{3653} = (4, 3, 13, 1)$
198 : $P_{3659} = (10, 3, 13, 1)$
199 : $P_{3686} = (5, 5, 13, 1)$
200 : $P_{3695} = (14, 5, 13, 1)$
201 : $P_{3717} = (4, 7, 13, 1)$
202 : $P_{3725} = (12, 7, 13, 1)$
203 : $P_{3755} = (10, 9, 13, 1)$

204 : $P_{3756} = (11, 9, 13, 1)$
205 : $P_{3768} = (7, 10, 13, 1)$
206 : $P_{3769} = (8, 10, 13, 1)$
207 : $P_{3789} = (12, 11, 13, 1)$
208 : $P_{3791} = (14, 11, 13, 1)$
209 : $P_{3816} = (7, 13, 13, 1)$
210 : $P_{3860} = (3, 0, 14, 1)$
211 : $P_{3908} = (3, 3, 14, 1)$
212 : $P_{3913} = (8, 3, 14, 1)$
213 : $P_{3947} = (10, 5, 14, 1)$
214 : $P_{3951} = (14, 5, 14, 1)$
215 : $P_{4006} = (5, 9, 14, 1)$
216 : $P_{4007} = (6, 9, 14, 1)$
217 : $P_{4041} = (8, 11, 14, 1)$
218 : $P_{4047} = (14, 11, 14, 1)$
219 : $P_{4051} = (2, 12, 14, 1)$
220 : $P_{4054} = (5, 12, 14, 1)$
221 : $P_{4083} = (2, 14, 14, 1)$
222 : $P_{4103} = (6, 15, 14, 1)$
223 : $P_{4107} = (10, 15, 14, 1)$
224 : $P_{4118} = (5, 0, 15, 1)$
225 : $P_{4133} = (4, 1, 15, 1)$
226 : $P_{4140} = (11, 1, 15, 1)$
227 : $P_{4146} = (1, 2, 15, 1)$
228 : $P_{4151} = (6, 2, 15, 1)$
229 : $P_{4162} = (1, 3, 15, 1)$
230 : $P_{4170} = (9, 3, 15, 1)$
231 : $P_{4183} = (6, 4, 15, 1)$
232 : $P_{4185} = (8, 4, 15, 1)$
233 : $P_{4197} = (4, 5, 15, 1)$
234 : $P_{4198} = (5, 5, 15, 1)$
235 : $P_{4282} = (9, 10, 15, 1)$
236 : $P_{4284} = (11, 10, 15, 1)$
237 : $P_{4308} = (3, 12, 15, 1)$
238 : $P_{4313} = (8, 12, 15, 1)$
239 : $P_{4356} = (3, 15, 15, 1)$

Line Intersection Graph

	0 1 2
0	0 1 0
1	1 0 1
2	0 1 0

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1
in point	P_1

Line 1 intersects

Line	ℓ_0	ℓ_2
in point	P_1	P_3

Line 2 intersects

Line	ℓ_1
in point	P_3

The surface has 289 points:
The points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$
1 : $P_1 = (0, 1, 0, 0)$
2 : $P_3 = (0, 0, 0, 1)$
3 : $P_4 = (1, 1, 1, 1)$
4 : $P_5 = (1, 1, 0, 0)$
5 : $P_6 = (2, 1, 0, 0)$
6 : $P_7 = (3, 1, 0, 0)$
7 : $P_8 = (4, 1, 0, 0)$
8 : $P_9 = (5, 1, 0, 0)$
9 : $P_{10} = (6, 1, 0, 0)$
10 : $P_{11} = (7, 1, 0, 0)$
11 : $P_{12} = (8, 1, 0, 0)$
12 : $P_{13} = (9, 1, 0, 0)$
13 : $P_{14} = (10, 1, 0, 0)$
14 : $P_{15} = (11, 1, 0, 0)$
15 : $P_{16} = (12, 1, 0, 0)$
16 : $P_{17} = (13, 1, 0, 0)$
17 : $P_{18} = (14, 1, 0, 0)$
18 : $P_{19} = (15, 1, 0, 0)$
19 : $P_{35} = (0, 1, 1, 0)$
20 : $P_{65} = (14, 2, 1, 0)$
21 : $P_{78} = (11, 3, 1, 0)$
22 : $P_{85} = (2, 4, 1, 0)$
23 : $P_{109} = (10, 5, 1, 0)$
24 : $P_{117} = (2, 6, 1, 0)$
25 : $P_{140} = (9, 7, 1, 0)$
26 : $P_{158} = (11, 8, 1, 0)$
27 : $P_{167} = (4, 9, 1, 0)$
28 : $P_{180} = (1, 10, 1, 0)$
29 : $P_{196} = (1, 11, 1, 0)$
30 : $P_{225} = (14, 12, 1, 0)$
31 : $P_{231} = (4, 13, 1, 0)$
32 : $P_{252} = (9, 14, 1, 0)$
33 : $P_{269} = (10, 15, 1, 0)$
34 : $P_{290} = (0, 1, 0, 1)$
35 : $P_{306} = (0, 2, 0, 1)$
36 : $P_{322} = (0, 3, 0, 1)$
37 : $P_{338} = (0, 4, 0, 1)$
38 : $P_{354} = (0, 5, 0, 1)$

39 : $P_{370} = (0, 6, 0, 1)$
40 : $P_{386} = (0, 7, 0, 1)$
41 : $P_{402} = (0, 8, 0, 1)$
42 : $P_{418} = (0, 9, 0, 1)$
43 : $P_{434} = (0, 10, 0, 1)$
44 : $P_{450} = (0, 11, 0, 1)$
45 : $P_{466} = (0, 12, 0, 1)$
46 : $P_{482} = (0, 13, 0, 1)$
47 : $P_{498} = (0, 14, 0, 1)$
48 : $P_{514} = (0, 15, 0, 1)$
49 : $P_{531} = (1, 0, 1, 1)$
50 : $P_{546} = (0, 1, 1, 1)$
51 : $P_{570} = (9, 2, 1, 1)$
52 : $P_{572} = (11, 2, 1, 1)$
53 : $P_{603} = (10, 4, 1, 1)$
54 : $P_{607} = (14, 4, 1, 1)$
55 : $P_{675} = (2, 9, 1, 1)$
56 : $P_{684} = (11, 9, 1, 1)$
57 : $P_{693} = (4, 10, 1, 1)$
58 : $P_{703} = (14, 10, 1, 1)$
59 : $P_{707} = (2, 11, 1, 1)$
60 : $P_{714} = (9, 11, 1, 1)$
61 : $P_{757} = (4, 14, 1, 1)$
62 : $P_{763} = (10, 14, 1, 1)$
63 : $P_{790} = (5, 0, 2, 1)$
64 : $P_{817} = (0, 2, 2, 1)$
65 : $P_{821} = (4, 2, 2, 1)$
66 : $P_{844} = (11, 3, 2, 1)$
67 : $P_{846} = (13, 3, 2, 1)$
68 : $P_{870} = (5, 5, 2, 1)$
69 : $P_{880} = (15, 5, 2, 1)$
70 : $P_{885} = (4, 6, 2, 1)$
71 : $P_{889} = (8, 6, 2, 1)$
72 : $P_{915} = (2, 8, 2, 1)$
73 : $P_{924} = (11, 8, 2, 1)$
74 : $P_{947} = (2, 10, 2, 1)$
75 : $P_{960} = (15, 10, 2, 1)$
76 : $P_{1017} = (8, 14, 2, 1)$
77 : $P_{1022} = (13, 14, 2, 1)$
78 : $P_{1049} = (8, 0, 3, 1)$
79 : $P_{1066} = (9, 1, 3, 1)$
80 : $P_{1067} = (10, 1, 3, 1)$
81 : $P_{1089} = (0, 3, 3, 1)$
82 : $P_{1094} = (5, 3, 3, 1)$
83 : $P_{1106} = (1, 4, 3, 1)$
84 : $P_{1118} = (13, 4, 3, 1)$
85 : $P_{1122} = (1, 5, 3, 1)$
86 : $P_{1135} = (14, 5, 3, 1)$
87 : $P_{1142} = (5, 6, 3, 1)$
88 : $P_{1152} = (15, 6, 3, 1)$
89 : $P_{1177} = (8, 8, 3, 1)$
90 : $P_{1178} = (9, 8, 3, 1)$
91 : $P_{1198} = (13, 9, 3, 1)$
92 : $P_{1200} = (15, 9, 3, 1)$
93 : $P_{1227} = (10, 11, 3, 1)$
94 : $P_{1231} = (14, 11, 3, 1)$
95 : $P_{1305} = (8, 0, 4, 1)$
96 : $P_{1336} = (7, 2, 4, 1)$
97 : $P_{1344} = (15, 2, 4, 1)$
98 : $P_{1361} = (0, 4, 4, 1)$
99 : $P_{1370} = (9, 4, 4, 1)$
100 : $P_{1384} = (7, 5, 4, 1)$
101 : $P_{1387} = (10, 5, 4, 1)$
102 : $P_{1428} = (3, 8, 4, 1)$
103 : $P_{1433} = (8, 8, 4, 1)$
104 : $P_{1476} = (3, 11, 4, 1)$
105 : $P_{1477} = (4, 11, 4, 1)$
106 : $P_{1514} = (9, 13, 4, 1)$
107 : $P_{1520} = (15, 13, 4, 1)$
108 : $P_{1541} = (4, 15, 4, 1)$
109 : $P_{1547} = (10, 15, 4, 1)$
110 : $P_{1568} = (15, 0, 5, 1)$
111 : $P_{1580} = (11, 1, 5, 1)$
112 : $P_{1583} = (14, 1, 5, 1)$
113 : $P_{1633} = (0, 5, 5, 1)$
114 : $P_{1641} = (8, 5, 5, 1)$
115 : $P_{1682} = (1, 8, 5, 1)$
116 : $P_{1683} = (2, 8, 5, 1)$
117 : $P_{1698} = (1, 9, 5, 1)$
118 : $P_{1704} = (7, 9, 5, 1)$
119 : $P_{1715} = (2, 10, 5, 1)$
120 : $P_{1724} = (11, 10, 5, 1)$
121 : $P_{1764} = (3, 13, 5, 1)$
122 : $P_{1769} = (8, 13, 5, 1)$
123 : $P_{1780} = (3, 14, 5, 1)$
124 : $P_{1784} = (7, 14, 5, 1)$
125 : $P_{1807} = (14, 15, 5, 1)$
126 : $P_{1808} = (15, 15, 5, 1)$
127 : $P_{1812} = (3, 0, 6, 1)$
128 : $P_{1860} = (3, 3, 6, 1)$
129 : $P_{1866} = (9, 3, 6, 1)$
130 : $P_{1883} = (10, 4, 6, 1)$
131 : $P_{1884} = (11, 4, 6, 1)$
132 : $P_{1905} = (0, 6, 6, 1)$
133 : $P_{1918} = (13, 6, 6, 1)$
134 : $P_{1976} = (7, 10, 6, 1)$
135 : $P_{1978} = (9, 10, 6, 1)$
136 : $P_{1990} = (5, 11, 6, 1)$
137 : $P_{1998} = (13, 11, 6, 1)$
138 : $P_{2019} = (2, 13, 6, 1)$
139 : $P_{2024} = (7, 13, 6, 1)$
140 : $P_{2038} = (5, 14, 6, 1)$
141 : $P_{2043} = (10, 14, 6, 1)$
142 : $P_{2051} = (2, 15, 6, 1)$
143 : $P_{2060} = (11, 15, 6, 1)$
144 : $P_{2073} = (8, 0, 7, 1)$
145 : $P_{2139} = (10, 4, 7, 1)$
146 : $P_{2144} = (15, 4, 7, 1)$
147 : $P_{2154} = (9, 5, 7, 1)$
148 : $P_{2156} = (11, 5, 7, 1)$
149 : $P_{2177} = (0, 7, 7, 1)$
150 : $P_{2189} = (12, 7, 7, 1)$
151 : $P_{2195} = (2, 8, 7, 1)$
152 : $P_{2201} = (8, 8, 7, 1)$
153 : $P_{2227} = (2, 10, 7, 1)$
154 : $P_{2231} = (6, 10, 7, 1)$
155 : $P_{2253} = (12, 11, 7, 1)$
156 : $P_{2256} = (15, 11, 7, 1)$
157 : $P_{2263} = (6, 12, 7, 1)$
158 : $P_{2266} = (9, 12, 7, 1)$
159 : $P_{2299} = (10, 14, 7, 1)$
160 : $P_{2300} = (11, 14, 7, 1)$
161 : $P_{2324} = (3, 0, 8, 1)$
162 : $P_{2339} = (2, 1, 8, 1)$
163 : $P_{2347} = (10, 1, 8, 1)$
164 : $P_{2358} = (5, 2, 8, 1)$
165 : $P_{2365} = (12, 2, 8, 1)$
166 : $P_{2371} = (2, 3, 8, 1)$
167 : $P_{2372} = (3, 3, 8, 1)$
168 : $P_{2438} = (5, 7, 8, 1)$
169 : $P_{2448} = (15, 7, 8, 1)$
170 : $P_{2449} = (0, 8, 8, 1)$
171 : $P_{2464} = (15, 8, 8, 1)$
172 : $P_{2501} = (4, 11, 8, 1)$
173 : $P_{2507} = (10, 11, 8, 1)$
174 : $P_{2546} = (1, 14, 8, 1)$
175 : $P_{2557} = (12, 14, 8, 1)$
176 : $P_{2562} = (1, 15, 8, 1)$
177 : $P_{2565} = (4, 15, 8, 1)$
178 : $P_{2592} = (15, 0, 9, 1)$
179 : $P_{2634} = (9, 3, 9, 1)$
180 : $P_{2636} = (11, 3, 9, 1)$
181 : $P_{2644} = (3, 4, 9, 1)$
182 : $P_{2653} = (12, 4, 9, 1)$
183 : $P_{2692} = (3, 7, 9, 1)$
184 : $P_{2703} = (14, 7, 9, 1)$
185 : $P_{2716} = (11, 8, 9, 1)$
186 : $P_{2717} = (12, 8, 9, 1)$
187 : $P_{2721} = (0, 9, 9, 1)$
188 : $P_{2735} = (14, 9, 9, 1)$
189 : $P_{2742} = (5, 10, 9, 1)$
190 : $P_{2746} = (9, 10, 9, 1)$
191 : $P_{2822} = (5, 15, 9, 1)$
192 : $P_{2832} = (15, 15, 9, 1)$
193 : $P_{2834} = (1, 0, 10, 1)$
194 : $P_{2850} = (1, 1, 10, 1)$
195 : $P_{2860} = (11, 1, 10, 1)$
196 : $P_{2916} = (3, 5, 10, 1)$
197 : $P_{2923} = (10, 5, 10, 1)$
198 : $P_{2932} = (3, 6, 10, 1)$
199 : $P_{2942} = (13, 6, 10, 1)$
200 : $P_{2953} = (8, 7, 10, 1)$

$201: P_{2957} = (12, 7, 10, 1)$
$202: P_{2993} = (0, 10, 10, 1)$
$203: P_{3004} = (11, 10, 10, 1)$
$204: P_{3021} = (12, 11, 10, 1)$
$205: P_{3022} = (13, 11, 10, 1)$
$206: P_{3081} = (8, 15, 10, 1)$
$207: P_{3083} = (10, 15, 10, 1)$
$208: P_{3090} = (1, 0, 11, 1)$
$209: P_{3106} = (1, 1, 11, 1)$
$210: P_{3115} = (10, 1, 11, 1)$
$211: P_{3148} = (11, 3, 11, 1)$
$212: P_{3152} = (15, 3, 11, 1)$
$213: P_{3222} = (5, 8, 11, 1)$
$214: P_{3228} = (11, 8, 11, 1)$
$215: P_{3255} = (6, 10, 11, 1)$
$216: P_{3256} = (7, 10, 11, 1)$
$217: P_{3265} = (0, 11, 11, 1)$
$218: P_{3275} = (10, 11, 11, 1)$
$219: P_{3287} = (6, 12, 11, 1)$
$220: P_{3296} = (15, 12, 11, 1)$
$221: P_{3302} = (5, 13, 11, 1)$
$222: P_{3304} = (7, 13, 11, 1)$
$223: P_{3360} = (15, 0, 12, 1)$
$224: P_{3387} = (10, 2, 12, 1)$
$225: P_{3388} = (11, 2, 12, 1)$
$226: P_{3454} = (13, 6, 12, 1)$
$227: P_{3455} = (14, 6, 12, 1)$
$228: P_{3483} = (10, 8, 12, 1)$
$229: P_{3487} = (14, 8, 12, 1)$
$230: P_{3492} = (3, 9, 12, 1)$
$231: P_{3500} = (11, 9, 12, 1)$
$232: P_{3508} = (3, 10, 12, 1)$
$233: P_{3511} = (6, 10, 12, 1)$
$234: P_{3525} = (4, 11, 12, 1)$
$235: P_{3534} = (13, 11, 12, 1)$
$236: P_{3537} = (0, 12, 12, 1)$
$237: P_{3543} = (6, 12, 12, 1)$
$238: P_{3589} = (4, 15, 12, 1)$
$239: P_{3600} = (15, 15, 12, 1)$
$240: P_{3606} = (5, 0, 13, 1)$
$241: P_{3641} = (8, 2, 13, 1)$
$242: P_{3644} = (11, 2, 13, 1)$
$243: P_{3653} = (4, 3, 13, 1)$
$244: P_{3659} = (10, 3, 13, 1)$
$245: P_{3686} = (5, 5, 13, 1)$
$246: P_{3695} = (14, 5, 13, 1)$
$247: P_{3717} = (4, 7, 13, 1)$
$248: P_{3725} = (12, 7, 13, 1)$
$249: P_{3755} = (10, 9, 13, 1)$
$250: P_{3756} = (11, 9, 13, 1)$
$251: P_{3768} = (7, 10, 13, 1)$
$252: P_{3769} = (8, 10, 13, 1)$
$253: P_{3789} = (12, 11, 13, 1)$
$254: P_{3791} = (14, 11, 13, 1)$
$255: P_{3809} = (0, 13, 13, 1)$
$256: P_{3816} = (7, 13, 13, 1)$
$257: P_{3860} = (3, 0, 14, 1)$
$258: P_{3908} = (3, 3, 14, 1)$
$259: P_{3913} = (8, 3, 14, 1)$
$260: P_{3947} = (10, 5, 14, 1)$
$261: P_{3951} = (14, 5, 14, 1)$
$262: P_{4006} = (5, 9, 14, 1)$
$263: P_{4007} = (6, 9, 14, 1)$
$264: P_{4041} = (8, 11, 14, 1)$
$265: P_{4047} = (14, 11, 14, 1)$
$266: P_{4051} = (2, 12, 14, 1)$
$267: P_{4054} = (5, 12, 14, 1)$
$268: P_{4081} = (0, 14, 14, 1)$
$269: P_{4083} = (2, 14, 14, 1)$
$270: P_{4103} = (6, 15, 14, 1)$
$271: P_{4107} = (10, 15, 14, 1)$
$272: P_{4118} = (5, 0, 15, 1)$
$273: P_{4133} = (4, 1, 15, 1)$
$274: P_{4140} = (11, 1, 15, 1)$
$275: P_{4146} = (1, 2, 15, 1)$
$276: P_{4151} = (6, 2, 15, 1)$
$277: P_{4162} = (1, 3, 15, 1)$
$278: P_{4170} = (9, 3, 15, 1)$
$279: P_{4183} = (6, 4, 15, 1)$
$280: P_{4185} = (8, 4, 15, 1)$
$281: P_{4197} = (4, 5, 15, 1)$
$282: P_{4198} = (5, 5, 15, 1)$
$283: P_{4282} = (9, 10, 15, 1)$
$284: P_{4284} = (11, 10, 15, 1)$
$285: P_{4308} = (3, 12, 15, 1)$
$286: P_{4313} = (8, 12, 15, 1)$
$287: P_{4353} = (0, 15, 15, 1)$
$288: P_{4356} = (3, 15, 15, 1)$