Rank-65735 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_2^3 + X_0^2X_3 + X_0X_1^2 + X_0X_1X_2 = 0$$

(0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 571544085

General information

Number of lines	1
Number of points	273
Number of singular points	1
Number of Eckardt points	0
Number of double points	0
Number of single points	17
Number of points off lines	256
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17
Type of lines on points	1^{17}, 0^{256}

Singular Points

The surface has 1 singular points:

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

The 1 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \mathbf{Pl}(0,0,0,1,0,0)_{33}$$

Rank of lines: (69904)
Rank of points on Klein quadric: (33)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 17 single points:
The single points on the surface are:

0 : $P_1 = (0,1,0,0)$ lies on line ℓ_0
1 : $P_3 = (0,0,0,1)$ lies on line ℓ_0
2 : $P_{290} = (0,1,0,1)$ lies on line ℓ_0
3 : $P_{306} = (0,2,0,1)$ lies on line ℓ_0
4 : $P_{322} = (0,3,0,1)$ lies on line ℓ_0
5 : $P_{338} = (0,4,0,1)$ lies on line ℓ_0
6 : $P_{354} = (0,5,0,1)$ lies on line ℓ_0
7 : $P_{370} = (0,6,0,1)$ lies on line ℓ_0
8 : $P_{386} = (0,7,0,1)$ lies on line ℓ_0
9 : $P_{402} = (0,8,0,1)$ lies on line ℓ_0
10 : $P_{418} = (0,9,0,1)$ lies on line ℓ_0
11 : $P_{434} = (0,10,0,1)$ lies on line ℓ_0
12 : $P_{450} = (0,11,0,1)$ lies on line ℓ_0
13 : $P_{466} = (0,12,0,1)$ lies on line ℓ_0
14 : $P_{482} = (0,13,0,1)$ lies on line ℓ_0
15 : $P_{498} = (0,14,0,1)$ lies on line ℓ_0
16 : $P_{514} = (0,15,0,1)$ lies on line ℓ_0

The single points on the surface are:

Points on surface but on no line

The surface has 256 points not on any line:
The points on the surface but not on lines are:

0 : $P_0 = (1,0,0,0)$
1 : $P_4 = (1,1,1,1)$
2 : $P_{55} = (4,2,1,0)$
3 : $P_{71} = (4,3,1,0)$
4 : $P_{92} = (9,4,1,0)$
5 : $P_{108} = (9,5,1,0)$
6 : $P_{125} = (10,6,1,0)$
7 : $P_{141} = (10,7,1,0)$
8 : $P_{161} = (14,8,1,0)$
9 : $P_{177} = (14,9,1,0)$
10 : $P_{180} = (1,10,1,0)$
11 : $P_{196} = (1,11,1,0)$
12 : $P_{222} = (11,12,1,0)$
13 : $P_{238} = (11,13,1,0)$
14 : $P_{245} = (2,14,1,0)$
15 : $P_{261} = (2,15,1,0)$
16 : $P_{291} = (1,1,0,1)$
17 : $P_{310} = (4,2,0,1)$
18 : $P_{327} = (5,3,0,1)$
19 : $P_{347} = (9,4,0,1)$
20 : $P_{362} = (8,5,0,1)$
21 : $P_{383} = (13,6,0,1)$
22 : $P_{398} = (12,7,0,1)$
23 : $P_{417} = (15,8,0,1)$
24 : $P_{432} = (14,9,0,1)$
25 : $P_{445} = (11,10,0,1)$
26 : $P_{460} = (10,11,0,1)$
27 : $P_{472} = (6,12,0,1)$

28 : $P_{489} = (7, 13, 0, 1)$
29 : $P_{500} = (2, 14, 0, 1)$
30 : $P_{517} = (3, 15, 0, 1)$
31 : $P_{531} = (1, 0, 1, 1)$
32 : $P_{628} = (3, 6, 1, 1)$
33 : $P_{633} = (8, 6, 1, 1)$
34 : $P_{644} = (3, 7, 1, 1)$
35 : $P_{649} = (8, 7, 1, 1)$
36 : $P_{699} = (10, 10, 1, 1)$
37 : $P_{700} = (11, 10, 1, 1)$
38 : $P_{715} = (10, 11, 1, 1)$
39 : $P_{716} = (11, 11, 1, 1)$
40 : $P_{726} = (5, 12, 1, 1)$
41 : $P_{736} = (15, 12, 1, 1)$
42 : $P_{742} = (5, 13, 1, 1)$
43 : $P_{752} = (15, 13, 1, 1)$
44 : $P_{790} = (5, 0, 2, 1)$
45 : $P_{822} = (5, 2, 2, 1)$
46 : $P_{915} = (2, 8, 2, 1)$
47 : $P_{917} = (4, 8, 2, 1)$
48 : $P_{938} = (9, 9, 2, 1)$
49 : $P_{941} = (12, 9, 2, 1)$
50 : $P_{947} = (2, 10, 2, 1)$
51 : $P_{949} = (4, 10, 2, 1)$
52 : $P_{970} = (9, 11, 2, 1)$
53 : $P_{973} = (12, 11, 2, 1)$
54 : $P_{1003} = (10, 13, 2, 1)$
55 : $P_{1007} = (14, 13, 2, 1)$
56 : $P_{1035} = (10, 15, 2, 1)$
57 : $P_{1039} = (14, 15, 2, 1)$
58 : $P_{1049} = (8, 0, 3, 1)$
59 : $P_{1097} = (8, 3, 3, 1)$
60 : $P_{1131} = (10, 5, 3, 1)$
61 : $P_{1134} = (13, 5, 3, 1)$
62 : $P_{1147} = (10, 6, 3, 1)$
63 : $P_{1150} = (13, 6, 3, 1)$
64 : $P_{1170} = (1, 8, 3, 1)$
65 : $P_{1184} = (15, 8, 3, 1)$
66 : $P_{1218} = (1, 11, 3, 1)$
67 : $P_{1232} = (15, 11, 3, 1)$
68 : $P_{1240} = (7, 12, 3, 1)$
69 : $P_{1245} = (12, 12, 3, 1)$
70 : $P_{1251} = (2, 13, 3, 1)$
71 : $P_{1260} = (11, 13, 3, 1)$
72 : $P_{1267} = (2, 14, 3, 1)$
73 : $P_{1276} = (11, 14, 3, 1)$
74 : $P_{1288} = (7, 15, 3, 1)$
75 : $P_{1293} = (12, 15, 3, 1)$
76 : $P_{1305} = (8, 0, 4, 1)$
77 : $P_{1347} = (2, 3, 4, 1)$
78 : $P_{1356} = (11, 3, 4, 1)$
79 : $P_{1369} = (8, 4, 4, 1)$
80 : $P_{1411} = (2, 7, 4, 1)$
81 : $P_{1420} = (11, 7, 4, 1)$
82 : $P_{1463} = (6, 10, 4, 1)$
83 : $P_{1471} = (14, 10, 4, 1)$
84 : $P_{1477} = (4, 11, 4, 1)$
85 : $P_{1482} = (9, 11, 4, 1)$
86 : $P_{1527} = (6, 14, 4, 1)$
87 : $P_{1535} = (14, 14, 4, 1)$
88 : $P_{1541} = (4, 15, 4, 1)$
89 : $P_{1546} = (9, 15, 4, 1)$
90 : $P_{1568} = (15, 0, 5, 1)$
91 : $P_{1589} = (4, 2, 5, 1)$
92 : $P_{1595} = (10, 2, 5, 1)$
93 : $P_{1607} = (6, 3, 5, 1)$
94 : $P_{1613} = (12, 3, 5, 1)$
95 : $P_{1648} = (15, 5, 5, 1)$
96 : $P_{1655} = (6, 6, 5, 1)$
97 : $P_{1661} = (12, 6, 5, 1)$
98 : $P_{1669} = (4, 7, 5, 1)$
99 : $P_{1675} = (10, 7, 5, 1)$
100 : $P_{1688} = (7, 8, 5, 1)$
101 : $P_{1692} = (11, 8, 5, 1)$
102 : $P_{1714} = (1, 10, 5, 1)$
103 : $P_{1716} = (3, 10, 5, 1)$
104 : $P_{1768} = (7, 13, 5, 1)$
105 : $P_{1772} = (11, 13, 5, 1)$
106 : $P_{1794} = (1, 15, 5, 1)$
107 : $P_{1796} = (3, 15, 5, 1)$
108 : $P_{1812} = (3, 0, 6, 1)$
109 : $P_{1833} = (8, 1, 6, 1)$
110 : $P_{1840} = (15, 1, 6, 1)$
111 : $P_{1908} = (3, 6, 6, 1)$
112 : $P_{1929} = (8, 7, 6, 1)$
113 : $P_{1936} = (15, 7, 6, 1)$
114 : $P_{1994} = (9, 11, 6, 1)$
115 : $P_{1996} = (11, 11, 6, 1)$
116 : $P_{2026} = (9, 13, 6, 1)$
117 : $P_{2028} = (11, 13, 6, 1)$
118 : $P_{2073} = (8, 0, 7, 1)$
119 : $P_{2084} = (3, 1, 7, 1)$
120 : $P_{2086} = (5, 1, 7, 1)$
121 : $P_{2164} = (3, 6, 7, 1)$
122 : $P_{2166} = (5, 6, 7, 1)$
123 : $P_{2185} = (8, 7, 7, 1)$
124 : $P_{2243} = (2, 11, 7, 1)$
125 : $P_{2252} = (11, 11, 7, 1)$
126 : $P_{2259} = (2, 12, 7, 1)$
127 : $P_{2268} = (11, 12, 7, 1)$
128 : $P_{2324} = (3, 0, 8, 1)$
129 : $P_{2370} = (1, 3, 8, 1)$
130 : $P_{2374} = (5, 3, 8, 1)$
131 : $P_{2394} = (9, 4, 8, 1)$
132 : $P_{2396} = (11, 4, 8, 1)$
133 : $P_{2407} = (6, 5, 8, 1)$
134 : $P_{2414} = (13, 5, 8, 1)$
135 : $P_{2443} = (10, 7, 8, 1)$

136 : $P_{2445} = (12, 7, 8, 1)$
137 : $P_{2452} = (3, 8, 8, 1)$
138 : $P_{2498} = (1, 11, 8, 1)$
139 : $P_{2502} = (5, 11, 8, 1)$
140 : $P_{2522} = (9, 12, 8, 1)$
141 : $P_{2524} = (11, 12, 8, 1)$
142 : $P_{2535} = (6, 13, 8, 1)$
143 : $P_{2542} = (13, 13, 8, 1)$
144 : $P_{2571} = (10, 15, 8, 1)$
145 : $P_{2573} = (12, 15, 8, 1)$
146 : $P_{2592} = (15, 0, 9, 1)$
147 : $P_{2611} = (2, 2, 9, 1)$
148 : $P_{2622} = (13, 2, 9, 1)$
149 : $P_{2634} = (9, 3, 9, 1)$
150 : $P_{2639} = (14, 3, 9, 1)$
151 : $P_{2661} = (4, 5, 9, 1)$
152 : $P_{2667} = (10, 5, 9, 1)$
153 : $P_{2736} = (15, 9, 9, 1)$
154 : $P_{2746} = (9, 10, 9, 1)$
155 : $P_{2751} = (14, 10, 9, 1)$
156 : $P_{2755} = (2, 11, 9, 1)$
157 : $P_{2766} = (13, 11, 9, 1)$
158 : $P_{2773} = (4, 12, 9, 1)$
159 : $P_{2779} = (10, 12, 9, 1)$
160 : $P_{2834} = (1, 0, 10, 1)$
161 : $P_{2852} = (3, 1, 10, 1)$
162 : $P_{2857} = (8, 1, 10, 1)$
163 : $P_{2872} = (7, 2, 10, 1)$
164 : $P_{2879} = (14, 2, 10, 1)$
165 : $P_{2885} = (4, 3, 10, 1)$
166 : $P_{2887} = (6, 3, 10, 1)$
167 : $P_{2902} = (5, 4, 10, 1)$
168 : $P_{2912} = (15, 4, 10, 1)$
169 : $P_{2923} = (10, 5, 10, 1)$
170 : $P_{2924} = (11, 5, 10, 1)$
171 : $P_{2968} = (7, 8, 10, 1)$
172 : $P_{2975} = (14, 8, 10, 1)$
173 : $P_{2981} = (4, 9, 10, 1)$
174 : $P_{2983} = (6, 9, 10, 1)$
175 : $P_{2994} = (1, 10, 10, 1)$
176 : $P_{3012} = (3, 11, 10, 1)$
177 : $P_{3017} = (8, 11, 10, 1)$
178 : $P_{3062} = (5, 14, 10, 1)$
179 : $P_{3072} = (15, 14, 10, 1)$
180 : $P_{3083} = (10, 15, 10, 1)$
181 : $P_{3084} = (11, 15, 10, 1)$
182 : $P_{3090} = (1, 0, 11, 1)$
183 : $P_{3110} = (5, 1, 11, 1)$
184 : $P_{3120} = (15, 1, 11, 1)$
185 : $P_{3124} = (3, 2, 11, 1)$
186 : $P_{3129} = (8, 2, 11, 1)$
187 : $P_{3147} = (10, 3, 11, 1)$
188 : $P_{3148} = (11, 3, 11, 1)$
189 : $P_{3155} = (2, 4, 11, 1)$
190 : $P_{3165} = (12, 4, 11, 1)$
191 : $P_{3178} = (9, 5, 11, 1)$
192 : $P_{3182} = (13, 5, 11, 1)$
193 : $P_{3227} = (10, 8, 11, 1)$
194 : $P_{3228} = (11, 8, 11, 1)$
195 : $P_{3236} = (3, 9, 11, 1)$
196 : $P_{3241} = (8, 9, 11, 1)$
197 : $P_{3254} = (5, 10, 11, 1)$
198 : $P_{3264} = (15, 10, 11, 1)$
199 : $P_{3266} = (1, 11, 11, 1)$
200 : $P_{3322} = (9, 14, 11, 1)$
201 : $P_{3326} = (13, 14, 11, 1)$
202 : $P_{3331} = (2, 15, 11, 1)$
203 : $P_{3341} = (12, 15, 11, 1)$
204 : $P_{3360} = (15, 0, 12, 1)$
205 : $P_{3366} = (5, 1, 12, 1)$
206 : $P_{3369} = (8, 1, 12, 1)$
207 : $P_{3445} = (4, 6, 12, 1)$
208 : $P_{3451} = (10, 6, 12, 1)$
209 : $P_{3509} = (4, 10, 12, 1)$
210 : $P_{3515} = (10, 10, 12, 1)$
211 : $P_{3552} = (15, 12, 12, 1)$
212 : $P_{3558} = (5, 13, 12, 1)$
213 : $P_{3561} = (8, 13, 12, 1)$
214 : $P_{3606} = (5, 0, 13, 1)$
215 : $P_{3620} = (3, 1, 13, 1)$
216 : $P_{3632} = (15, 1, 13, 1)$
217 : $P_{3723} = (10, 7, 13, 1)$
218 : $P_{3727} = (14, 7, 13, 1)$
219 : $P_{3771} = (10, 10, 13, 1)$
220 : $P_{3775} = (14, 10, 13, 1)$
221 : $P_{3796} = (3, 12, 13, 1)$
222 : $P_{3808} = (15, 12, 13, 1)$
223 : $P_{3814} = (5, 13, 13, 1)$
224 : $P_{3860} = (3, 0, 14, 1)$
225 : $P_{3925} = (4, 4, 14, 1)$
226 : $P_{3928} = (7, 4, 14, 1)$
227 : $P_{3939} = (2, 5, 14, 1)$
228 : $P_{3951} = (14, 5, 14, 1)$
229 : $P_{3962} = (9, 6, 14, 1)$
230 : $P_{3964} = (11, 6, 14, 1)$
231 : $P_{3994} = (9, 8, 14, 1)$
232 : $P_{3996} = (11, 8, 14, 1)$
233 : $P_{4021} = (4, 10, 14, 1)$
234 : $P_{4024} = (7, 10, 14, 1)$
235 : $P_{4035} = (2, 11, 14, 1)$
236 : $P_{4047} = (14, 11, 14, 1)$
237 : $P_{4084} = (3, 14, 14, 1)$
238 : $P_{4118} = (5, 0, 15, 1)$
239 : $P_{4167} = (6, 3, 15, 1)$
240 : $P_{4172} = (11, 3, 15, 1)$
241 : $P_{4194} = (1, 5, 15, 1)$
242 : $P_{4201} = (8, 5, 15, 1)$
243 : $P_{4219} = (10, 6, 15, 1)$

244 : $P_{4223} = (14, 6, 15, 1)$
245 : $P_{4232} = (7, 7, 15, 1)$
246 : $P_{4238} = (13, 7, 15, 1)$
247 : $P_{4248} = (7, 8, 15, 1)$
248 : $P_{4254} = (13, 8, 15, 1)$
249 : $P_{4267} = (10, 9, 15, 1)$
250 : $P_{4271} = (14, 9, 15, 1)$
251 : $P_{4274} = (1, 10, 15, 1)$
252 : $P_{4281} = (8, 10, 15, 1)$
253 : $P_{4311} = (6, 12, 15, 1)$
254 : $P_{4316} = (11, 12, 15, 1)$
255 : $P_{4358} = (5, 15, 15, 1)$

Line Intersection Graph

	0
0	0

Neighbor sets in the line intersection graph:
Line 0 intersects

Line
in point

The surface has 273 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 : $P_{55} = (4, 2, 1, 0)$
5 : $P_{71} = (4, 3, 1, 0)$
6 : $P_{92} = (9, 4, 1, 0)$
7 : $P_{108} = (9, 5, 1, 0)$
8 : $P_{125} = (10, 6, 1, 0)$
9 : $P_{141} = (10, 7, 1, 0)$
10 : $P_{161} = (14, 8, 1, 0)$
11 : $P_{177} = (14, 9, 1, 0)$
12 : $P_{180} = (1, 10, 1, 0)$
13 : $P_{196} = (1, 11, 1, 0)$
14 : $P_{222} = (11, 12, 1, 0)$
15 : $P_{238} = (11, 13, 1, 0)$
16 : $P_{245} = (2, 14, 1, 0)$
17 : $P_{261} = (2, 15, 1, 0)$
18 : $P_{290} = (0, 1, 0, 1)$
19 : $P_{291} = (1, 1, 0, 1)$
20 : $P_{306} = (0, 2, 0, 1)$
21 : $P_{310} = (4, 2, 0, 1)$
22 : $P_{322} = (0, 3, 0, 1)$
23 : $P_{327} = (5, 3, 0, 1)$
24 : $P_{338} = (0, 4, 0, 1)$
25 : $P_{347} = (9, 4, 0, 1)$
26 : $P_{354} = (0, 5, 0, 1)$
27 : $P_{362} = (8, 5, 0, 1)$
28 : $P_{370} = (0, 6, 0, 1)$
29 : $P_{383} = (13, 6, 0, 1)$
30 : $P_{386} = (0, 7, 0, 1)$
31 : $P_{398} = (12, 7, 0, 1)$
32 : $P_{402} = (0, 8, 0, 1)$
33 : $P_{417} = (15, 8, 0, 1)$
34 : $P_{418} = (0, 9, 0, 1)$
35 : $P_{432} = (14, 9, 0, 1)$
36 : $P_{434} = (0, 10, 0, 1)$
37 : $P_{445} = (11, 10, 0, 1)$
38 : $P_{450} = (0, 11, 0, 1)$
39 : $P_{460} = (10, 11, 0, 1)$
40 : $P_{466} = (0, 12, 0, 1)$
41 : $P_{472} = (6, 12, 0, 1)$
42 : $P_{482} = (0, 13, 0, 1)$
43 : $P_{489} = (7, 13, 0, 1)$
44 : $P_{498} = (0, 14, 0, 1)$
45 : $P_{500} = (2, 14, 0, 1)$
46 : $P_{514} = (0, 15, 0, 1)$
47 : $P_{517} = (3, 15, 0, 1)$
48 : $P_{531} = (1, 0, 1, 1)$
49 : $P_{628} = (3, 6, 1, 1)$
50 : $P_{633} = (8, 6, 1, 1)$
51 : $P_{644} = (3, 7, 1, 1)$
52 : $P_{649} = (8, 7, 1, 1)$
53 : $P_{699} = (10, 10, 1, 1)$
54 : $P_{700} = (11, 10, 1, 1)$
55 : $P_{715} = (10, 11, 1, 1)$
56 : $P_{716} = (11, 11, 1, 1)$
57 : $P_{726} = (5, 12, 1, 1)$
58 : $P_{736} = (15, 12, 1, 1)$
59 : $P_{742} = (5, 13, 1, 1)$
60 : $P_{752} = (15, 13, 1, 1)$
61 : $P_{790} = (5, 0, 2, 1)$
62 : $P_{822} = (5, 2, 2, 1)$
63 : $P_{915} = (2, 8, 2, 1)$
64 : $P_{917} = (4, 8, 2, 1)$
65 : $P_{938} = (9, 9, 2, 1)$
66 : $P_{941} = (12, 9, 2, 1)$
67 : $P_{947} = (2, 10, 2, 1)$
68 : $P_{949} = (4, 10, 2, 1)$
69 : $P_{970} = (9, 11, 2, 1)$
70 : $P_{973} = (12, 11, 2, 1)$
71 : $P_{1003} = (10, 13, 2, 1)$
72 : $P_{1007} = (14, 13, 2, 1)$
73 : $P_{1035} = (10, 15, 2, 1)$
74 : $P_{1039} = (14, 15, 2, 1)$
75 : $P_{1049} = (8, 0, 3, 1)$
76 : $P_{1097} = (8, 3, 3, 1)$
77 : $P_{1131} = (10, 5, 3, 1)$
78 : $P_{1134} = (13, 5, 3, 1)$
79 : $P_{1147} = (10, 6, 3, 1)$
80 : $P_{1150} = (13, 6, 3, 1)$
81 : $P_{1170} = (1, 8, 3, 1)$
82 : $P_{1184} = (15, 8, 3, 1)$
83 : $P_{1218} = (1, 11, 3, 1)$
84 : $P_{1232} = (15, 11, 3, 1)$
85 : $P_{1240} = (7, 12, 3, 1)$
86 : $P_{1245} = (12, 12, 3, 1)$
87 : $P_{1251} = (2, 13, 3, 1)$
88 : $P_{1260} = (11, 13, 3, 1)$
89 : $P_{1267} = (2, 14, 3, 1)$
90 : $P_{1276} = (11, 14, 3, 1)$
91 : $P_{1288} = (7, 15, 3, 1)$
92 : $P_{1293} = (12, 15, 3, 1)$
93 : $P_{1305} = (8, 0, 4, 1)$
94 : $P_{1347} = (2, 3, 4, 1)$
95 : $P_{1356} = (11, 3, 4, 1)$
96 : $P_{1369} = (8, 4, 4, 1)$
97 : $P_{1411} = (2, 7, 4, 1)$
98 : $P_{1420} = (11, 7, 4, 1)$

$99: P_{1463} = (6, 10, 4, 1)$
$100: P_{1471} = (14, 10, 4, 1)$
$101: P_{1477} = (4, 11, 4, 1)$
$102: P_{1482} = (9, 11, 4, 1)$
$103: P_{1527} = (6, 14, 4, 1)$
$104: P_{1535} = (14, 14, 4, 1)$
$105: P_{1541} = (4, 15, 4, 1)$
$106: P_{1546} = (9, 15, 4, 1)$
$107: P_{1568} = (15, 0, 5, 1)$
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$109: P_{1595} = (10, 2, 5, 1)$
$110: P_{1607} = (6, 3, 5, 1)$
$111: P_{1613} = (12, 3, 5, 1)$
$112: P_{1648} = (15, 5, 5, 1)$
$113: P_{1655} = (6, 6, 5, 1)$
$114: P_{1661} = (12, 6, 5, 1)$
$115: P_{1669} = (4, 7, 5, 1)$
$116: P_{1675} = (10, 7, 5, 1)$
$117: P_{1688} = (7, 8, 5, 1)$
$118: P_{1692} = (11, 8, 5, 1)$
$119: P_{1714} = (1, 10, 5, 1)$
$120: P_{1716} = (3, 10, 5, 1)$
$121: P_{1768} = (7, 13, 5, 1)$
$122: P_{1772} = (11, 13, 5, 1)$
$123: P_{1794} = (1, 15, 5, 1)$
$124: P_{1796} = (3, 15, 5, 1)$
$125: P_{1812} = (3, 0, 6, 1)$
$126: P_{1833} = (8, 1, 6, 1)$
$127: P_{1840} = (15, 1, 6, 1)$
$128: P_{1908} = (3, 6, 6, 1)$
$129: P_{1929} = (8, 7, 6, 1)$
$130: P_{1936} = (15, 7, 6, 1)$
$131: P_{1994} = (9, 11, 6, 1)$
$132: P_{1996} = (11, 11, 6, 1)$
$133: P_{2026} = (9, 13, 6, 1)$
$134: P_{2028} = (11, 13, 6, 1)$
$135: P_{2073} = (8, 0, 7, 1)$
$136: P_{2084} = (3, 1, 7, 1)$
$137: P_{2086} = (5, 1, 7, 1)$
$138: P_{2164} = (3, 6, 7, 1)$
$139: P_{2166} = (5, 6, 7, 1)$
$140: P_{2185} = (8, 7, 7, 1)$
$141: P_{2243} = (2, 11, 7, 1)$
$142: P_{2252} = (11, 11, 7, 1)$
$143: P_{2259} = (2, 12, 7, 1)$
$144: P_{2268} = (11, 12, 7, 1)$
$145: P_{2324} = (3, 0, 8, 1)$
$146: P_{2370} = (1, 3, 8, 1)$
$147: P_{2374} = (5, 3, 8, 1)$
$148: P_{2394} = (9, 4, 8, 1)$
$149: P_{2396} = (11, 4, 8, 1)$
$150: P_{2407} = (6, 5, 8, 1)$
$151: P_{2414} = (13, 5, 8, 1)$
$152: P_{2443} = (10, 7, 8, 1)$
$153: P_{2445} = (12, 7, 8, 1)$
$154: P_{2452} = (3, 8, 8, 1)$
$155: P_{2498} = (1, 11, 8, 1)$
$156: P_{2502} = (5, 11, 8, 1)$
$157: P_{2522} = (9, 12, 8, 1)$
$158: P_{2524} = (11, 12, 8, 1)$
$159: P_{2535} = (6, 13, 8, 1)$
$160: P_{2542} = (13, 13, 8, 1)$
$161: P_{2571} = (10, 15, 8, 1)$
$162: P_{2573} = (12, 15, 8, 1)$
$163: P_{2592} = (15, 0, 9, 1)$
$164: P_{2611} = (2, 2, 9, 1)$
$165: P_{2622} = (13, 2, 9, 1)$
$166: P_{2634} = (9, 3, 9, 1)$
$167: P_{2639} = (14, 3, 9, 1)$
$168: P_{2661} = (4, 5, 9, 1)$
$169: P_{2667} = (10, 5, 9, 1)$
$170: P_{2736} = (15, 9, 9, 1)$
$171: P_{2746} = (9, 10, 9, 1)$
$172: P_{2751} = (14, 10, 9, 1)$
$173: P_{2755} = (2, 11, 9, 1)$
$174: P_{2766} = (13, 11, 9, 1)$
$175: P_{2773} = (4, 12, 9, 1)$
$176: P_{2779} = (10, 12, 9, 1)$
$177: P_{2834} = (1, 0, 10, 1)$
$178: P_{2852} = (3, 1, 10, 1)$
$179: P_{2857} = (8, 1, 10, 1)$
$180: P_{2872} = (7, 2, 10, 1)$
$181: P_{2879} = (14, 2, 10, 1)$
$182: P_{2885} = (4, 3, 10, 1)$
$183: P_{2887} = (6, 3, 10, 1)$
$184: P_{2902} = (5, 4, 10, 1)$
$185: P_{2912} = (15, 4, 10, 1)$
$186: P_{2923} = (10, 5, 10, 1)$
$187: P_{2924} = (11, 5, 10, 1)$
$188: P_{2968} = (7, 8, 10, 1)$
$189: P_{2975} = (14, 8, 10, 1)$
$190: P_{2981} = (4, 9, 10, 1)$
$191: P_{2983} = (6, 9, 10, 1)$
$192: P_{2994} = (1, 10, 10, 1)$
$193: P_{3012} = (3, 11, 10, 1)$
$194: P_{3017} = (8, 11, 10, 1)$
$195: P_{3062} = (5, 14, 10, 1)$
$196: P_{3072} = (15, 14, 10, 1)$
$197: P_{3083} = (10, 15, 10, 1)$
$198: P_{3084} = (11, 15, 10, 1)$
$199: P_{3090} = (1, 0, 11, 1)$
$200: P_{3110} = (5, 1, 11, 1)$
$201: P_{3120} = (15, 1, 11, 1)$
$202: P_{3124} = (3, 2, 11, 1)$
$203: P_{3129} = (8, 2, 11, 1)$
$204: P_{3147} = (10, 3, 11, 1)$
$205: P_{3148} = (11, 3, 11, 1)$
$206: P_{3155} = (2, 4, 11, 1)$
$207: P_{3165} = (12, 4, 11, 1)$
$208: P_{3178} = (9, 5, 11, 1)$
$209: P_{3182} = (13, 5, 11, 1)$
$210: P_{3227} = (10, 8, 11, 1)$
$211: P_{3228} = (11, 8, 11, 1)$
$212: P_{3236} = (3, 9, 11, 1)$
$213: P_{3241} = (8, 9, 11, 1)$
$214: P_{3254} = (5, 10, 11, 1)$
$215: P_{3264} = (15, 10, 11, 1)$
$216: P_{3266} = (1, 11, 11, 1)$
$217: P_{3322} = (9, 14, 11, 1)$
$218: P_{3326} = (13, 14, 11, 1)$
$219: P_{3331} = (2, 15, 11, 1)$
$220: P_{3341} = (12, 15, 11, 1)$
$221: P_{3360} = (15, 0, 12, 1)$
$222: P_{3366} = (5, 1, 12, 1)$
$223: P_{3369} = (8, 1, 12, 1)$
$224: P_{3445} = (4, 6, 12, 1)$
$225: P_{3451} = (10, 6, 12, 1)$
$226: P_{3509} = (4, 10, 12, 1)$
$227: P_{3515} = (10, 10, 12, 1)$
$228: P_{3552} = (15, 12, 12, 1)$
$229: P_{3558} = (5, 13, 12, 1)$
$230: P_{3561} = (8, 13, 12, 1)$
$231: P_{3606} = (5, 0, 13, 1)$
$232: P_{3620} = (3, 1, 13, 1)$
$233: P_{3632} = (15, 1, 13, 1)$
$234: P_{3723} = (10, 7, 13, 1)$
$235: P_{3727} = (14, 7, 13, 1)$
$236: P_{3771} = (10, 10, 13, 1)$
$237: P_{3775} = (14, 10, 13, 1)$
$238: P_{3796} = (3, 12, 13, 1)$
$239: P_{3808} = (15, 12, 13, 1)$
$240: P_{3814} = (5, 13, 13, 1)$
$241: P_{3860} = (3, 0, 14, 1)$
$242: P_{3925} = (4, 4, 14, 1)$
$243: P_{3928} = (7, 4, 14, 1)$
$244: P_{3939} = (2, 5, 14, 1)$
$245: P_{3951} = (14, 5, 14, 1)$
$246: P_{3962} = (9, 6, 14, 1)$
$247: P_{3964} = (11, 6, 14, 1)$
$248: P_{3994} = (9, 8, 14, 1)$
$249: P_{3996} = (11, 8, 14, 1)$
$250: P_{4021} = (4, 10, 14, 1)$
$251: P_{4024} = (7, 10, 14, 1)$
$252: P_{4035} = (2, 11, 14, 1)$
$253: P_{4047} = (14, 11, 14, 1)$
$254: P_{4084} = (3, 14, 14, 1)$
$255: P_{4118} = (5, 0, 15, 1)$
$256: P_{4167} = (6, 3, 15, 1)$
$257: P_{4172} = (11, 3, 15, 1)$
$258: P_{4194} = (1, 5, 15, 1)$
$259: P_{4201} = (8, 5, 15, 1)$
$260: P_{4219} = (10, 6, 15, 1)$

261 : $P_{4223} = (14, 6, 15, 1)$
262 : $P_{4232} = (7, 7, 15, 1)$
263 : $P_{4238} = (13, 7, 15, 1)$
264 : $P_{4248} = (7, 8, 15, 1)$
265 : $P_{4254} = (13, 8, 15, 1)$
266 : $P_{4267} = (10, 9, 15, 1)$
267 : $P_{4271} = (14, 9, 15, 1)$
268 : $P_{4274} = (1, 10, 15, 1)$
269 : $P_{4281} = (8, 10, 15, 1)$
270 : $P_{4311} = (6, 12, 15, 1)$
271 : $P_{4316} = (11, 12, 15, 1)$
272 : $P_{4358} = (5, 15, 15, 1)$