

# Rank-65872 over GF(16)

January 15, 2021

## The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(16) is 303112726

## General information

Number of lines	0
Number of points	273
Number of singular points	0
Number of Eckardt points	0
Number of double points	0
Number of single points	0
Number of points off lines	273
Number of Hesse planes	0
Number of axes	0
Type of points on lines	
Type of lines on points	$0^{273}$

## Singular Points

The surface has 0 singular points:

## The 0 Lines

The lines and their Pluecker coordinates are:

Rank of lines: ( )

Rank of points on Klein quadric: ( )

### 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 0 single points:

The single points on the surface are:

The single points on the surface are:

### Points on surface but on no line

The surface has 273 points not on any line:

The points on the surface but not on lines are:

0 : $P_1 = (0, 1, 0, 0)$	27 : $P_{686} = (13, 9, 1, 1)$
1 : $P_4 = (1, 1, 1, 1)$	28 : $P_{760} = (7, 14, 1, 1)$
2 : $P_{20} = (1, 0, 1, 0)$	29 : $P_{763} = (10, 14, 1, 1)$
3 : $P_{29} = (10, 0, 1, 0)$	30 : $P_{765} = (12, 14, 1, 1)$
4 : $P_{30} = (11, 0, 1, 0)$	31 : $P_{825} = (8, 2, 2, 1)$
5 : $P_{35} = (0, 1, 1, 0)$	32 : $P_{844} = (11, 3, 2, 1)$
6 : $P_{36} = (1, 1, 1, 0)$	33 : $P_{865} = (0, 5, 2, 1)$
7 : $P_{75} = (8, 3, 1, 0)$	34 : $P_{877} = (12, 5, 2, 1)$
8 : $P_{114} = (15, 5, 1, 0)$	35 : $P_{878} = (13, 5, 2, 1)$
9 : $P_{150} = (3, 8, 1, 0)$	36 : $P_{920} = (7, 8, 2, 1)$
10 : $P_{184} = (5, 10, 1, 0)$	37 : $P_{924} = (11, 8, 2, 1)$
11 : $P_{189} = (10, 10, 1, 0)$	38 : $P_{926} = (13, 8, 2, 1)$
12 : $P_{194} = (15, 10, 1, 0)$	39 : $P_{941} = (12, 9, 2, 1)$
13 : $P_{198} = (3, 11, 1, 0)$	40 : $P_{953} = (8, 10, 2, 1)$
14 : $P_{203} = (8, 11, 1, 0)$	41 : $P_{1032} = (7, 15, 2, 1)$
15 : $P_{206} = (11, 11, 1, 0)$	42 : $P_{1067} = (10, 1, 3, 1)$
16 : $P_{264} = (5, 15, 1, 0)$	43 : $P_{1088} = (15, 2, 3, 1)$
17 : $P_{530} = (0, 0, 1, 1)$	44 : $P_{1096} = (7, 3, 3, 1)$
18 : $P_{531} = (1, 0, 1, 1)$	45 : $P_{1106} = (1, 4, 3, 1)$
19 : $P_{567} = (6, 2, 1, 1)$	46 : $P_{1112} = (7, 4, 3, 1)$
20 : $P_{572} = (11, 2, 1, 1)$	47 : $P_{1122} = (1, 5, 3, 1)$
21 : $P_{573} = (12, 2, 1, 1)$	48 : $P_{1129} = (8, 5, 3, 1)$
22 : $P_{599} = (6, 4, 1, 1)$	49 : $P_{1137} = (0, 6, 3, 1)$
23 : $P_{603} = (10, 4, 1, 1)$	50 : $P_{1149} = (12, 6, 3, 1)$
24 : $P_{606} = (13, 4, 1, 1)$	51 : $P_{1150} = (13, 6, 3, 1)$
25 : $P_{680} = (7, 9, 1, 1)$	52 : $P_{1162} = (9, 7, 3, 1)$
26 : $P_{684} = (11, 9, 1, 1)$	53 : $P_{1213} = (12, 10, 3, 1)$

54 : $P_{1223} = (6, 11, 3, 1)$	108 : $P_{1999} = (14, 11, 6, 1)$
55 : $P_{1227} = (10, 11, 3, 1)$	109 : $P_{2023} = (6, 13, 6, 1)$
56 : $P_{1230} = (13, 11, 3, 1)$	110 : $P_{2037} = (4, 14, 6, 1)$
57 : $P_{1236} = (3, 12, 3, 1)$	111 : $P_{2043} = (10, 14, 6, 1)$
58 : $P_{1255} = (6, 13, 3, 1)$	112 : $P_{2048} = (15, 14, 6, 1)$
59 : $P_{1257} = (8, 13, 3, 1)$	113 : $P_{2056} = (7, 15, 6, 1)$
60 : $P_{1264} = (15, 13, 3, 1)$	114 : $P_{2060} = (11, 15, 6, 1)$
61 : $P_{1274} = (9, 14, 3, 1)$	115 : $P_{2062} = (13, 15, 6, 1)$
62 : $P_{1284} = (3, 15, 3, 1)$	116 : $P_{2086} = (5, 1, 7, 1)$
63 : $P_{1357} = (12, 3, 4, 1)$	117 : $P_{2119} = (6, 3, 7, 1)$
64 : $P_{1376} = (15, 4, 4, 1)$	118 : $P_{2134} = (5, 4, 7, 1)$
65 : $P_{1387} = (10, 5, 4, 1)$	119 : $P_{2139} = (10, 4, 7, 1)$
66 : $P_{1425} = (0, 8, 4, 1)$	120 : $P_{2143} = (14, 4, 7, 1)$
67 : $P_{1431} = (6, 8, 4, 1)$	121 : $P_{2151} = (6, 5, 7, 1)$
68 : $P_{1432} = (7, 8, 4, 1)$	122 : $P_{2156} = (11, 5, 7, 1)$
69 : $P_{1488} = (15, 11, 4, 1)$	123 : $P_{2157} = (12, 5, 7, 1)$
70 : $P_{1527} = (6, 14, 4, 1)$	124 : $P_{2176} = (15, 6, 7, 1)$
71 : $P_{1544} = (7, 15, 4, 1)$	125 : $P_{2211} = (2, 9, 7, 1)$
72 : $P_{1547} = (10, 15, 4, 1)$	126 : $P_{2221} = (12, 9, 7, 1)$
73 : $P_{1549} = (12, 15, 4, 1)$	127 : $P_{2224} = (15, 9, 7, 1)$
74 : $P_{1580} = (11, 1, 5, 1)$	128 : $P_{2239} = (14, 10, 7, 1)$
75 : $P_{1599} = (14, 2, 5, 1)$	129 : $P_{2243} = (2, 11, 7, 1)$
76 : $P_{1606} = (5, 3, 5, 1)$	130 : $P_{2245} = (4, 11, 7, 1)$
77 : $P_{1620} = (3, 4, 5, 1)$	131 : $P_{2248} = (7, 11, 7, 1)$
78 : $P_{1645} = (12, 5, 5, 1)$	132 : $P_{2264} = (7, 12, 7, 1)$
79 : $P_{1654} = (5, 6, 5, 1)$	133 : $P_{2289} = (0, 14, 7, 1)$
80 : $P_{1668} = (3, 7, 5, 1)$	134 : $P_{2299} = (10, 14, 7, 1)$
81 : $P_{1678} = (13, 7, 5, 1)$	135 : $P_{2300} = (11, 14, 7, 1)$
82 : $P_{1680} = (15, 7, 5, 1)$	136 : $P_{2309} = (4, 15, 7, 1)$
83 : $P_{1682} = (1, 8, 5, 1)$	137 : $P_{2347} = (10, 1, 8, 1)$
84 : $P_{1696} = (15, 8, 5, 1)$	138 : $P_{2387} = (2, 4, 8, 1)$
85 : $P_{1698} = (1, 9, 5, 1)$	139 : $P_{2409} = (8, 5, 8, 1)$
86 : $P_{1709} = (12, 9, 5, 1)$	140 : $P_{2419} = (2, 6, 8, 1)$
87 : $P_{1720} = (7, 10, 5, 1)$	141 : $P_{2433} = (0, 7, 8, 1)$
88 : $P_{1724} = (11, 10, 5, 1)$	142 : $P_{2445} = (12, 7, 8, 1)$
89 : $P_{1726} = (13, 10, 5, 1)$	143 : $P_{2446} = (13, 7, 8, 1)$
90 : $P_{1735} = (6, 11, 5, 1)$	144 : $P_{2455} = (6, 8, 8, 1)$
91 : $P_{1759} = (14, 12, 5, 1)$	145 : $P_{2470} = (5, 9, 8, 1)$
92 : $P_{1761} = (0, 13, 5, 1)$	146 : $P_{2494} = (13, 10, 8, 1)$
93 : $P_{1767} = (6, 13, 5, 1)$	147 : $P_{2504} = (7, 11, 8, 1)$
94 : $P_{1768} = (7, 13, 5, 1)$	148 : $P_{2507} = (10, 11, 8, 1)$
95 : $P_{1840} = (15, 1, 6, 1)$	149 : $P_{2509} = (12, 11, 8, 1)$
96 : $P_{1846} = (5, 2, 6, 1)$	150 : $P_{2516} = (3, 12, 8, 1)$
97 : $P_{1850} = (9, 2, 6, 1)$	151 : $P_{2518} = (5, 12, 8, 1)$
98 : $P_{1854} = (13, 2, 6, 1)$	152 : $P_{2520} = (7, 12, 8, 1)$
99 : $P_{1873} = (0, 4, 6, 1)$	153 : $P_{2537} = (8, 13, 8, 1)$
100 : $P_{1883} = (10, 4, 6, 1)$	154 : $P_{2546} = (1, 14, 8, 1)$
101 : $P_{1884} = (11, 4, 6, 1)$	155 : $P_{2551} = (6, 14, 8, 1)$
102 : $P_{1903} = (14, 5, 6, 1)$	156 : $P_{2562} = (1, 15, 8, 1)$
103 : $P_{1926} = (5, 7, 6, 1)$	157 : $P_{2564} = (3, 15, 8, 1)$
104 : $P_{1944} = (7, 8, 6, 1)$	158 : $P_{2622} = (13, 2, 9, 1)$
105 : $P_{1973} = (4, 10, 6, 1)$	159 : $P_{2631} = (6, 3, 9, 1)$
106 : $P_{1991} = (6, 11, 6, 1)$	160 : $P_{2636} = (11, 3, 9, 1)$
107 : $P_{1994} = (9, 11, 6, 1)$	161 : $P_{2637} = (12, 3, 9, 1)$

162 : $P_{2663} = (6, 5, 9, 1)$	216 : $P_{3556} = (3, 13, 12, 1)$
163 : $P_{2716} = (11, 8, 9, 1)$	217 : $P_{3572} = (3, 14, 12, 1)$
164 : $P_{2724} = (3, 9, 9, 1)$	218 : $P_{3573} = (4, 14, 12, 1)$
165 : $P_{2740} = (3, 10, 9, 1)$	219 : $P_{3575} = (6, 14, 12, 1)$
166 : $P_{2817} = (0, 15, 9, 1)$	220 : $P_{3620} = (3, 1, 13, 1)$
167 : $P_{2829} = (12, 15, 9, 1)$	221 : $P_{3636} = (3, 2, 13, 1)$
168 : $P_{2830} = (13, 15, 9, 1)$	222 : $P_{3642} = (9, 2, 13, 1)$
169 : $P_{2833} = (0, 0, 10, 1)$	223 : $P_{3644} = (11, 2, 13, 1)$
170 : $P_{2834} = (1, 0, 10, 1)$	224 : $P_{3656} = (7, 3, 13, 1)$
171 : $P_{2850} = (1, 1, 10, 1)$	225 : $P_{3659} = (10, 3, 13, 1)$
172 : $P_{2860} = (11, 1, 10, 1)$	226 : $P_{3661} = (12, 3, 13, 1)$
173 : $P_{2886} = (5, 3, 10, 1)$	227 : $P_{3672} = (7, 4, 13, 1)$
174 : $P_{2911} = (14, 4, 10, 1)$	228 : $P_{3673} = (8, 4, 13, 1)$
175 : $P_{2923} = (10, 5, 10, 1)$	229 : $P_{3679} = (14, 4, 13, 1)$
176 : $P_{2934} = (5, 6, 10, 1)$	230 : $P_{3726} = (13, 7, 13, 1)$
177 : $P_{2960} = (15, 7, 10, 1)$	231 : $P_{3731} = (2, 8, 13, 1)$
178 : $P_{2976} = (15, 8, 10, 1)$	232 : $P_{3745} = (0, 9, 13, 1)$
179 : $P_{2997} = (4, 10, 10, 1)$	233 : $P_{3755} = (10, 9, 13, 1)$
180 : $P_{3004} = (11, 10, 10, 1)$	234 : $P_{3756} = (11, 9, 13, 1)$
181 : $P_{3007} = (14, 10, 10, 1)$	235 : $P_{3763} = (2, 10, 13, 1)$
182 : $P_{3061} = (4, 14, 10, 1)$	236 : $P_{3774} = (13, 10, 13, 1)$
183 : $P_{3083} = (10, 15, 10, 1)$	237 : $P_{3775} = (14, 10, 13, 1)$
184 : $P_{3089} = (0, 0, 11, 1)$	238 : $P_{3786} = (9, 11, 13, 1)$
185 : $P_{3090} = (1, 0, 11, 1)$	239 : $P_{3801} = (8, 12, 13, 1)$
186 : $P_{3106} = (1, 1, 11, 1)$	240 : $P_{3853} = (12, 15, 13, 1)$
187 : $P_{3115} = (10, 1, 11, 1)$	241 : $P_{3905} = (0, 3, 14, 1)$
188 : $P_{3130} = (9, 2, 11, 1)$	242 : $P_{3911} = (6, 3, 14, 1)$
189 : $P_{3148} = (11, 3, 11, 1)$	243 : $P_{3912} = (7, 3, 14, 1)$
190 : $P_{3177} = (8, 5, 11, 1)$	244 : $P_{3928} = (7, 4, 14, 1)$
191 : $P_{3228} = (11, 8, 11, 1)$	245 : $P_{3943} = (6, 5, 14, 1)$
192 : $P_{3235} = (2, 9, 11, 1)$	246 : $P_{3947} = (10, 5, 14, 1)$
193 : $P_{3267} = (2, 11, 11, 1)$	247 : $P_{3950} = (13, 5, 14, 1)$
194 : $P_{3274} = (9, 11, 11, 1)$	248 : $P_{3998} = (13, 8, 14, 1)$
195 : $P_{3275} = (10, 11, 11, 1)$	249 : $P_{4038} = (5, 11, 14, 1)$
196 : $P_{3284} = (3, 12, 11, 1)$	250 : $P_{4086} = (5, 14, 14, 1)$
197 : $P_{3305} = (8, 13, 11, 1)$	251 : $P_{4107} = (10, 15, 14, 1)$
198 : $P_{3332} = (3, 15, 11, 1)$	252 : $P_{4140} = (11, 1, 15, 1)$
199 : $P_{3369} = (8, 1, 12, 1)$	253 : $P_{4146} = (1, 2, 15, 1)$
200 : $P_{3377} = (0, 2, 12, 1)$	254 : $P_{4158} = (13, 2, 15, 1)$
201 : $P_{3387} = (10, 2, 12, 1)$	255 : $P_{4162} = (1, 3, 15, 1)$
202 : $P_{3388} = (11, 2, 12, 1)$	256 : $P_{4166} = (5, 3, 15, 1)$
203 : $P_{3402} = (9, 3, 12, 1)$	257 : $P_{4214} = (5, 6, 15, 1)$
204 : $P_{3438} = (13, 5, 12, 1)$	258 : $P_{4217} = (8, 6, 15, 1)$
205 : $P_{3453} = (12, 6, 12, 1)$	259 : $P_{4221} = (12, 6, 15, 1)$
206 : $P_{3479} = (6, 8, 12, 1)$	260 : $P_{4240} = (15, 7, 15, 1)$
207 : $P_{3483} = (10, 8, 12, 1)$	261 : $P_{4256} = (15, 8, 15, 1)$
208 : $P_{3486} = (13, 8, 12, 1)$	262 : $P_{4261} = (4, 9, 15, 1)$
209 : $P_{3491} = (2, 9, 12, 1)$	263 : $P_{4279} = (6, 10, 15, 1)$
210 : $P_{3497} = (8, 9, 12, 1)$	264 : $P_{4284} = (11, 10, 15, 1)$
211 : $P_{3500} = (11, 9, 12, 1)$	265 : $P_{4285} = (12, 10, 15, 1)$
212 : $P_{3509} = (4, 10, 12, 1)$	266 : $P_{4296} = (7, 11, 15, 1)$
213 : $P_{3514} = (9, 10, 12, 1)$	267 : $P_{4305} = (0, 12, 15, 1)$
214 : $P_{3517} = (12, 10, 12, 1)$	268 : $P_{4311} = (6, 12, 15, 1)$
215 : $P_{3523} = (2, 11, 12, 1)$	269 : $P_{4312} = (7, 12, 15, 1)$

270 :  $P_{4325} = (4, 13, 15, 1)$   
 271 :  $P_{4345} = (8, 14, 15, 1)$

272 :  $P_{4366} = (13, 15, 15, 1)$

## Line Intersection Graph

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Neighbor sets in the line intersection graph:

The surface has 273 points:

The points on the surface are:

0 : $P_1 = (0, 1, 0, 0)$	42 : $P_{1067} = (10, 1, 3, 1)$	84 : $P_{1696} = (15, 8, 5, 1)$
1 : $P_4 = (1, 1, 1, 1)$	43 : $P_{1088} = (15, 2, 3, 1)$	85 : $P_{1698} = (1, 9, 5, 1)$
2 : $P_{20} = (1, 0, 1, 0)$	44 : $P_{1096} = (7, 3, 3, 1)$	86 : $P_{1709} = (12, 9, 5, 1)$
3 : $P_{29} = (10, 0, 1, 0)$	45 : $P_{1106} = (1, 4, 3, 1)$	87 : $P_{1720} = (7, 10, 5, 1)$
4 : $P_{30} = (11, 0, 1, 0)$	46 : $P_{1112} = (7, 4, 3, 1)$	88 : $P_{1724} = (11, 10, 5, 1)$
5 : $P_{35} = (0, 1, 1, 0)$	47 : $P_{1122} = (1, 5, 3, 1)$	89 : $P_{1726} = (13, 10, 5, 1)$
6 : $P_{36} = (1, 1, 1, 0)$	48 : $P_{1129} = (8, 5, 3, 1)$	90 : $P_{1735} = (6, 11, 5, 1)$
7 : $P_{75} = (8, 3, 1, 0)$	49 : $P_{1137} = (0, 6, 3, 1)$	91 : $P_{1759} = (14, 12, 5, 1)$
8 : $P_{114} = (15, 5, 1, 0)$	50 : $P_{1149} = (12, 6, 3, 1)$	92 : $P_{1761} = (0, 13, 5, 1)$
9 : $P_{150} = (3, 8, 1, 0)$	51 : $P_{1150} = (13, 6, 3, 1)$	93 : $P_{1767} = (6, 13, 5, 1)$
10 : $P_{184} = (5, 10, 1, 0)$	52 : $P_{1162} = (9, 7, 3, 1)$	94 : $P_{1768} = (7, 13, 5, 1)$
11 : $P_{189} = (10, 10, 1, 0)$	53 : $P_{1213} = (12, 10, 3, 1)$	95 : $P_{1840} = (15, 1, 6, 1)$
12 : $P_{194} = (15, 10, 1, 0)$	54 : $P_{1223} = (6, 11, 3, 1)$	96 : $P_{1846} = (5, 2, 6, 1)$
13 : $P_{198} = (3, 11, 1, 0)$	55 : $P_{1227} = (10, 11, 3, 1)$	97 : $P_{1850} = (9, 2, 6, 1)$
14 : $P_{203} = (8, 11, 1, 0)$	56 : $P_{1230} = (13, 11, 3, 1)$	98 : $P_{1854} = (13, 2, 6, 1)$
15 : $P_{206} = (11, 11, 1, 0)$	57 : $P_{1236} = (3, 12, 3, 1)$	99 : $P_{1873} = (0, 4, 6, 1)$
16 : $P_{264} = (5, 15, 1, 0)$	58 : $P_{1255} = (6, 13, 3, 1)$	100 : $P_{1883} = (10, 4, 6, 1)$
17 : $P_{530} = (0, 0, 1, 1)$	59 : $P_{1257} = (8, 13, 3, 1)$	101 : $P_{1884} = (11, 4, 6, 1)$
18 : $P_{531} = (1, 0, 1, 1)$	60 : $P_{1264} = (15, 13, 3, 1)$	102 : $P_{1903} = (14, 5, 6, 1)$
19 : $P_{567} = (6, 2, 1, 1)$	61 : $P_{1274} = (9, 14, 3, 1)$	103 : $P_{1926} = (5, 7, 6, 1)$
20 : $P_{572} = (11, 2, 1, 1)$	62 : $P_{1284} = (3, 15, 3, 1)$	104 : $P_{1944} = (7, 8, 6, 1)$
21 : $P_{573} = (12, 2, 1, 1)$	63 : $P_{1357} = (12, 3, 4, 1)$	105 : $P_{1973} = (4, 10, 6, 1)$
22 : $P_{599} = (6, 4, 1, 1)$	64 : $P_{1376} = (15, 4, 4, 1)$	106 : $P_{1991} = (6, 11, 6, 1)$
23 : $P_{603} = (10, 4, 1, 1)$	65 : $P_{1387} = (10, 5, 4, 1)$	107 : $P_{1994} = (9, 11, 6, 1)$
24 : $P_{606} = (13, 4, 1, 1)$	66 : $P_{1425} = (0, 8, 4, 1)$	108 : $P_{1999} = (14, 11, 6, 1)$
25 : $P_{680} = (7, 9, 1, 1)$	67 : $P_{1431} = (6, 8, 4, 1)$	109 : $P_{2023} = (6, 13, 6, 1)$
26 : $P_{684} = (11, 9, 1, 1)$	68 : $P_{1432} = (7, 8, 4, 1)$	110 : $P_{2037} = (4, 14, 6, 1)$
27 : $P_{686} = (13, 9, 1, 1)$	69 : $P_{1488} = (15, 11, 4, 1)$	111 : $P_{2043} = (10, 14, 6, 1)$
28 : $P_{760} = (7, 14, 1, 1)$	70 : $P_{1527} = (6, 14, 4, 1)$	112 : $P_{2048} = (15, 14, 6, 1)$
29 : $P_{763} = (10, 14, 1, 1)$	71 : $P_{1544} = (7, 15, 4, 1)$	113 : $P_{2056} = (7, 15, 6, 1)$
30 : $P_{765} = (12, 14, 1, 1)$	72 : $P_{1547} = (10, 15, 4, 1)$	114 : $P_{2060} = (11, 15, 6, 1)$
31 : $P_{825} = (8, 2, 2, 1)$	73 : $P_{1549} = (12, 15, 4, 1)$	115 : $P_{2062} = (13, 15, 6, 1)$
32 : $P_{844} = (11, 3, 2, 1)$	74 : $P_{1580} = (11, 1, 5, 1)$	116 : $P_{2086} = (5, 1, 7, 1)$
33 : $P_{865} = (0, 5, 2, 1)$	75 : $P_{1599} = (14, 2, 5, 1)$	117 : $P_{2119} = (6, 3, 7, 1)$
34 : $P_{877} = (12, 5, 2, 1)$	76 : $P_{1606} = (5, 3, 5, 1)$	118 : $P_{2134} = (5, 4, 7, 1)$
35 : $P_{878} = (13, 5, 2, 1)$	77 : $P_{1620} = (3, 4, 5, 1)$	119 : $P_{2139} = (10, 4, 7, 1)$
36 : $P_{920} = (7, 8, 2, 1)$	78 : $P_{1645} = (12, 5, 5, 1)$	120 : $P_{2143} = (14, 4, 7, 1)$
37 : $P_{924} = (11, 8, 2, 1)$	79 : $P_{1654} = (5, 6, 5, 1)$	121 : $P_{2151} = (6, 5, 7, 1)$
38 : $P_{926} = (13, 8, 2, 1)$	80 : $P_{1668} = (3, 7, 5, 1)$	122 : $P_{2156} = (11, 5, 7, 1)$
39 : $P_{941} = (12, 9, 2, 1)$	81 : $P_{1678} = (13, 7, 5, 1)$	123 : $P_{2157} = (12, 5, 7, 1)$
40 : $P_{953} = (8, 10, 2, 1)$	82 : $P_{1680} = (15, 7, 5, 1)$	124 : $P_{2176} = (15, 6, 7, 1)$
41 : $P_{1032} = (7, 15, 2, 1)$	83 : $P_{1682} = (1, 8, 5, 1)$	125 : $P_{2211} = (2, 9, 7, 1)$

126 : $P_{2221} = (12, 9, 7, 1)$	176 : $P_{2934} = (5, 6, 10, 1)$	226 : $P_{3661} = (12, 3, 13, 1)$
127 : $P_{2224} = (15, 9, 7, 1)$	177 : $P_{2960} = (15, 7, 10, 1)$	227 : $P_{3672} = (7, 4, 13, 1)$
128 : $P_{2239} = (14, 10, 7, 1)$	178 : $P_{2976} = (15, 8, 10, 1)$	228 : $P_{3673} = (8, 4, 13, 1)$
129 : $P_{2243} = (2, 11, 7, 1)$	179 : $P_{2997} = (4, 10, 10, 1)$	229 : $P_{3679} = (14, 4, 13, 1)$
130 : $P_{2245} = (4, 11, 7, 1)$	180 : $P_{3004} = (11, 10, 10, 1)$	230 : $P_{3726} = (13, 7, 13, 1)$
131 : $P_{2248} = (7, 11, 7, 1)$	181 : $P_{3007} = (14, 10, 10, 1)$	231 : $P_{3731} = (2, 8, 13, 1)$
132 : $P_{2264} = (7, 12, 7, 1)$	182 : $P_{3061} = (4, 14, 10, 1)$	232 : $P_{3745} = (0, 9, 13, 1)$
133 : $P_{2289} = (0, 14, 7, 1)$	183 : $P_{3083} = (10, 15, 10, 1)$	233 : $P_{3755} = (10, 9, 13, 1)$
134 : $P_{2299} = (10, 14, 7, 1)$	184 : $P_{3089} = (0, 0, 11, 1)$	234 : $P_{3756} = (11, 9, 13, 1)$
135 : $P_{2300} = (11, 14, 7, 1)$	185 : $P_{3090} = (1, 0, 11, 1)$	235 : $P_{3763} = (2, 10, 13, 1)$
136 : $P_{2309} = (4, 15, 7, 1)$	186 : $P_{3106} = (1, 1, 11, 1)$	236 : $P_{3774} = (13, 10, 13, 1)$
137 : $P_{2347} = (10, 1, 8, 1)$	187 : $P_{3115} = (10, 1, 11, 1)$	237 : $P_{3775} = (14, 10, 13, 1)$
138 : $P_{2387} = (2, 4, 8, 1)$	188 : $P_{3130} = (9, 2, 11, 1)$	238 : $P_{3786} = (9, 11, 13, 1)$
139 : $P_{2409} = (8, 5, 8, 1)$	189 : $P_{3148} = (11, 3, 11, 1)$	239 : $P_{3801} = (8, 12, 13, 1)$
140 : $P_{2419} = (2, 6, 8, 1)$	190 : $P_{3177} = (8, 5, 11, 1)$	240 : $P_{3853} = (12, 15, 13, 1)$
141 : $P_{2433} = (0, 7, 8, 1)$	191 : $P_{3228} = (11, 8, 11, 1)$	241 : $P_{3905} = (0, 3, 14, 1)$
142 : $P_{2445} = (12, 7, 8, 1)$	192 : $P_{3235} = (2, 9, 11, 1)$	242 : $P_{3911} = (6, 3, 14, 1)$
143 : $P_{2446} = (13, 7, 8, 1)$	193 : $P_{3267} = (2, 11, 11, 1)$	243 : $P_{3912} = (7, 3, 14, 1)$
144 : $P_{2455} = (6, 8, 8, 1)$	194 : $P_{3274} = (9, 11, 11, 1)$	244 : $P_{3928} = (7, 4, 14, 1)$
145 : $P_{2470} = (5, 9, 8, 1)$	195 : $P_{3275} = (10, 11, 11, 1)$	245 : $P_{3943} = (6, 5, 14, 1)$
146 : $P_{2494} = (13, 10, 8, 1)$	196 : $P_{3284} = (3, 12, 11, 1)$	246 : $P_{3947} = (10, 5, 14, 1)$
147 : $P_{2504} = (7, 11, 8, 1)$	197 : $P_{3305} = (8, 13, 11, 1)$	247 : $P_{3950} = (13, 5, 14, 1)$
148 : $P_{2507} = (10, 11, 8, 1)$	198 : $P_{3332} = (3, 15, 11, 1)$	248 : $P_{3998} = (13, 8, 14, 1)$
149 : $P_{2509} = (12, 11, 8, 1)$	199 : $P_{3369} = (8, 1, 12, 1)$	249 : $P_{4038} = (5, 11, 14, 1)$
150 : $P_{2516} = (3, 12, 8, 1)$	200 : $P_{3377} = (0, 2, 12, 1)$	250 : $P_{4086} = (5, 14, 14, 1)$
151 : $P_{2518} = (5, 12, 8, 1)$	201 : $P_{3387} = (10, 2, 12, 1)$	251 : $P_{4107} = (10, 15, 14, 1)$
152 : $P_{2520} = (7, 12, 8, 1)$	202 : $P_{3388} = (11, 2, 12, 1)$	252 : $P_{4140} = (11, 1, 15, 1)$
153 : $P_{2537} = (8, 13, 8, 1)$	203 : $P_{3402} = (9, 3, 12, 1)$	253 : $P_{4146} = (1, 2, 15, 1)$
154 : $P_{2546} = (1, 14, 8, 1)$	204 : $P_{3438} = (13, 5, 12, 1)$	254 : $P_{4158} = (13, 2, 15, 1)$
155 : $P_{2551} = (6, 14, 8, 1)$	205 : $P_{3453} = (12, 6, 12, 1)$	255 : $P_{4162} = (1, 3, 15, 1)$
156 : $P_{2562} = (1, 15, 8, 1)$	206 : $P_{3479} = (6, 8, 12, 1)$	256 : $P_{4166} = (5, 3, 15, 1)$
157 : $P_{2564} = (3, 15, 8, 1)$	207 : $P_{3483} = (10, 8, 12, 1)$	257 : $P_{4214} = (5, 6, 15, 1)$
158 : $P_{2622} = (13, 2, 9, 1)$	208 : $P_{3486} = (13, 8, 12, 1)$	258 : $P_{4217} = (8, 6, 15, 1)$
159 : $P_{2631} = (6, 3, 9, 1)$	209 : $P_{3491} = (2, 9, 12, 1)$	259 : $P_{4221} = (12, 6, 15, 1)$
160 : $P_{2636} = (11, 3, 9, 1)$	210 : $P_{3497} = (8, 9, 12, 1)$	260 : $P_{4240} = (15, 7, 15, 1)$
161 : $P_{2637} = (12, 3, 9, 1)$	211 : $P_{3500} = (11, 9, 12, 1)$	261 : $P_{4256} = (15, 8, 15, 1)$
162 : $P_{2663} = (6, 5, 9, 1)$	212 : $P_{3509} = (4, 10, 12, 1)$	262 : $P_{4261} = (4, 9, 15, 1)$
163 : $P_{2716} = (11, 8, 9, 1)$	213 : $P_{3514} = (9, 10, 12, 1)$	263 : $P_{4279} = (6, 10, 15, 1)$
164 : $P_{2724} = (3, 9, 9, 1)$	214 : $P_{3517} = (12, 10, 12, 1)$	264 : $P_{4284} = (11, 10, 15, 1)$
165 : $P_{2740} = (3, 10, 9, 1)$	215 : $P_{3523} = (2, 11, 12, 1)$	265 : $P_{4285} = (12, 10, 15, 1)$
166 : $P_{2817} = (0, 15, 9, 1)$	216 : $P_{3556} = (3, 13, 12, 1)$	266 : $P_{4296} = (7, 11, 15, 1)$
167 : $P_{2829} = (12, 15, 9, 1)$	217 : $P_{3572} = (3, 14, 12, 1)$	267 : $P_{4305} = (0, 12, 15, 1)$
168 : $P_{2830} = (13, 15, 9, 1)$	218 : $P_{3573} = (4, 14, 12, 1)$	268 : $P_{4311} = (6, 12, 15, 1)$
169 : $P_{2833} = (0, 0, 10, 1)$	219 : $P_{3575} = (6, 14, 12, 1)$	269 : $P_{4312} = (7, 12, 15, 1)$
170 : $P_{2834} = (1, 0, 10, 1)$	220 : $P_{3620} = (3, 1, 13, 1)$	270 : $P_{4325} = (4, 13, 15, 1)$
171 : $P_{2850} = (1, 1, 10, 1)$	221 : $P_{3636} = (3, 2, 13, 1)$	271 : $P_{4345} = (8, 14, 15, 1)$
172 : $P_{2860} = (11, 1, 10, 1)$	222 : $P_{3642} = (9, 2, 13, 1)$	272 : $P_{4366} = (13, 15, 15, 1)$
173 : $P_{2886} = (5, 3, 10, 1)$	223 : $P_{3644} = (11, 2, 13, 1)$	
174 : $P_{2911} = (14, 4, 10, 1)$	224 : $P_{3656} = (7, 3, 13, 1)$	
175 : $P_{2923} = (10, 5, 10, 1)$	225 : $P_{3659} = (10, 3, 13, 1)$	