

Rank-65633 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(16) is 303178277

General information

Number of lines	2
Number of points	289
Number of singular points	0
Number of Eckardt points	0
Number of double points	0
Number of single points	34
Number of points off lines	255
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^2
Type of lines on points	$1^{34}, 0^{255}$

Singular Points

The surface has 0 singular points:

The 2 Lines

The lines and their Pluecker coordinates are:

$$\begin{aligned}\ell_0 &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{16} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{16} = \mathbf{Pl}(1, 0, 0, 0, 1, 0)_{290} \\ \ell_1 &= \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{530} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{530} = \mathbf{Pl}(0, 0, 1, 1, 1, 1)_{9426}\end{aligned}$$

Rank of lines: (16, 530)
Rank of points on Klein quadric: (290, 9426)

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 34 single points:
The single points on the surface are:

- | | |
|--|---|
| 0 : $P_0 = (1, 0, 0, 0)$ lies on line ℓ_0 | 18 : $P_{305} = (15, 1, 0, 1)$ lies on line ℓ_0 |
| 1 : $P_4 = (1, 1, 1, 1)$ lies on line ℓ_1 | 19 : $P_{530} = (0, 0, 1, 1)$ lies on line ℓ_1 |
| 2 : $P_5 = (1, 1, 0, 0)$ lies on line ℓ_1 | 20 : $P_{563} = (2, 2, 1, 1)$ lies on line ℓ_1 |
| 3 : $P_{290} = (0, 1, 0, 1)$ lies on line ℓ_0 | 21 : $P_{580} = (3, 3, 1, 1)$ lies on line ℓ_1 |
| 4 : $P_{291} = (1, 1, 0, 1)$ lies on line ℓ_0 | 22 : $P_{597} = (4, 4, 1, 1)$ lies on line ℓ_1 |
| 5 : $P_{292} = (2, 1, 0, 1)$ lies on line ℓ_0 | 23 : $P_{614} = (5, 5, 1, 1)$ lies on line ℓ_1 |
| 6 : $P_{293} = (3, 1, 0, 1)$ lies on line ℓ_0 | 24 : $P_{631} = (6, 6, 1, 1)$ lies on line ℓ_1 |
| 7 : $P_{294} = (4, 1, 0, 1)$ lies on line ℓ_0 | 25 : $P_{648} = (7, 7, 1, 1)$ lies on line ℓ_1 |
| 8 : $P_{295} = (5, 1, 0, 1)$ lies on line ℓ_0 | 26 : $P_{665} = (8, 8, 1, 1)$ lies on line ℓ_1 |
| 9 : $P_{296} = (6, 1, 0, 1)$ lies on line ℓ_0 | 27 : $P_{682} = (9, 9, 1, 1)$ lies on line ℓ_1 |
| 10 : $P_{297} = (7, 1, 0, 1)$ lies on line ℓ_0 | 28 : $P_{699} = (10, 10, 1, 1)$ lies on line ℓ_1 |
| 11 : $P_{298} = (8, 1, 0, 1)$ lies on line ℓ_0 | 29 : $P_{716} = (11, 11, 1, 1)$ lies on line ℓ_1 |
| 12 : $P_{299} = (9, 1, 0, 1)$ lies on line ℓ_0 | 30 : $P_{733} = (12, 12, 1, 1)$ lies on line ℓ_1 |
| 13 : $P_{300} = (10, 1, 0, 1)$ lies on line ℓ_0 | 31 : $P_{750} = (13, 13, 1, 1)$ lies on line ℓ_1 |
| 14 : $P_{301} = (11, 1, 0, 1)$ lies on line ℓ_0 | 32 : $P_{767} = (14, 14, 1, 1)$ lies on line ℓ_1 |
| 15 : $P_{302} = (12, 1, 0, 1)$ lies on line ℓ_0 | 33 : $P_{784} = (15, 15, 1, 1)$ lies on line ℓ_1 |
| 16 : $P_{303} = (13, 1, 0, 1)$ lies on line ℓ_0 | |
| 17 : $P_{304} = (14, 1, 0, 1)$ lies on line ℓ_0 | |

The single points on the surface are:

Points on surface but on no line

The surface has 255 points not on any line:
The points on the surface but not on lines are:

- | | |
|------------------------------|-------------------------------|
| 0 : $P_{35} = (0, 1, 1, 0)$ | 5 : $P_{108} = (9, 5, 1, 0)$ |
| 1 : $P_{36} = (1, 1, 1, 0)$ | 6 : $P_{161} = (14, 8, 1, 0)$ |
| 2 : $P_{71} = (4, 3, 1, 0)$ | 7 : $P_{162} = (15, 8, 1, 0)$ |
| 3 : $P_{72} = (5, 3, 1, 0)$ | 8 : $P_{179} = (0, 10, 1, 0)$ |
| 4 : $P_{107} = (8, 5, 1, 0)$ | 9 : $P_{180} = (1, 10, 1, 0)$ |

10 : $P_{195} = (0, 11, 1, 0)$	64 : $P_{1162} = (9, 7, 3, 1)$
11 : $P_{196} = (1, 11, 1, 0)$	65 : $P_{1243} = (10, 12, 3, 1)$
12 : $P_{261} = (2, 15, 1, 0)$	66 : $P_{1244} = (11, 12, 3, 1)$
13 : $P_{262} = (3, 15, 1, 0)$	67 : $P_{1257} = (8, 13, 3, 1)$
14 : $P_{275} = (1, 0, 0, 1)$	68 : $P_{1262} = (13, 13, 3, 1)$
15 : $P_{319} = (13, 2, 0, 1)$	69 : $P_{1282} = (1, 15, 3, 1)$
16 : $P_{335} = (13, 3, 0, 1)$	70 : $P_{1292} = (11, 15, 3, 1)$
17 : $P_{345} = (7, 4, 0, 1)$	71 : $P_{1306} = (9, 0, 4, 1)$
18 : $P_{361} = (7, 5, 0, 1)$	72 : $P_{1322} = (9, 1, 4, 1)$
19 : $P_{381} = (11, 6, 0, 1)$	73 : $P_{1416} = (7, 7, 4, 1)$
20 : $P_{397} = (11, 7, 0, 1)$	74 : $P_{1419} = (10, 7, 4, 1)$
21 : $P_{414} = (12, 8, 0, 1)$	75 : $P_{1430} = (5, 8, 4, 1)$
22 : $P_{430} = (12, 9, 0, 1)$	76 : $P_{1432} = (7, 8, 4, 1)$
23 : $P_{434} = (0, 10, 0, 1)$	77 : $P_{1492} = (3, 12, 4, 1)$
24 : $P_{450} = (0, 11, 0, 1)$	78 : $P_{1497} = (8, 12, 4, 1)$
25 : $P_{476} = (10, 12, 0, 1)$	79 : $P_{1543} = (6, 15, 4, 1)$
26 : $P_{492} = (10, 13, 0, 1)$	80 : $P_{1544} = (7, 15, 4, 1)$
27 : $P_{504} = (6, 14, 0, 1)$	81 : $P_{1567} = (14, 0, 5, 1)$
28 : $P_{520} = (6, 15, 0, 1)$	82 : $P_{1577} = (8, 1, 5, 1)$
29 : $P_{572} = (11, 2, 1, 1)$	83 : $P_{1602} = (1, 3, 5, 1)$
30 : $P_{591} = (14, 3, 1, 1)$	84 : $P_{1611} = (10, 3, 5, 1)$
31 : $P_{603} = (10, 4, 1, 1)$	85 : $P_{1625} = (8, 4, 5, 1)$
32 : $P_{611} = (2, 5, 1, 1)$	86 : $P_{1629} = (12, 4, 5, 1)$
33 : $P_{634} = (9, 6, 1, 1)$	87 : $P_{1641} = (8, 5, 5, 1)$
34 : $P_{643} = (2, 7, 1, 1)$	88 : $P_{1643} = (10, 5, 5, 1)$
35 : $P_{661} = (4, 8, 1, 1)$	89 : $P_{1659} = (10, 6, 5, 1)$
36 : $P_{684} = (11, 9, 1, 1)$	90 : $P_{1660} = (11, 6, 5, 1)$
37 : $P_{690} = (1, 10, 1, 1)$	91 : $P_{1672} = (7, 7, 5, 1)$
38 : $P_{706} = (1, 11, 1, 1)$	92 : $P_{1680} = (15, 7, 5, 1)$
39 : $P_{725} = (4, 12, 1, 1)$	93 : $P_{1703} = (6, 9, 5, 1)$
40 : $P_{751} = (14, 13, 1, 1)$	94 : $P_{1709} = (12, 9, 5, 1)$
41 : $P_{763} = (10, 14, 1, 1)$	95 : $P_{1758} = (13, 12, 5, 1)$
42 : $P_{778} = (9, 15, 1, 1)$	96 : $P_{1759} = (14, 12, 5, 1)$
43 : $P_{789} = (4, 0, 2, 1)$	97 : $P_{1764} = (3, 13, 5, 1)$
44 : $P_{805} = (4, 1, 2, 1)$	98 : $P_{1773} = (12, 13, 5, 1)$
45 : $P_{868} = (3, 5, 2, 1)$	99 : $P_{1811} = (2, 0, 6, 1)$
46 : $P_{878} = (13, 5, 2, 1)$	100 : $P_{1838} = (13, 1, 6, 1)$
47 : $P_{902} = (5, 7, 2, 1)$	101 : $P_{1849} = (8, 2, 6, 1)$
48 : $P_{912} = (15, 7, 2, 1)$	102 : $P_{1853} = (12, 2, 6, 1)$
49 : $P_{925} = (12, 8, 2, 1)$	103 : $P_{1876} = (3, 4, 6, 1)$
50 : $P_{926} = (13, 8, 2, 1)$	104 : $P_{1885} = (12, 4, 6, 1)$
51 : $P_{1004} = (11, 13, 2, 1)$	105 : $P_{1891} = (2, 5, 6, 1)$
52 : $P_{1006} = (13, 13, 2, 1)$	106 : $P_{1898} = (9, 5, 6, 1)$
53 : $P_{1050} = (9, 0, 3, 1)$	107 : $P_{1910} = (5, 6, 6, 1)$
54 : $P_{1062} = (5, 1, 3, 1)$	108 : $P_{1917} = (12, 6, 6, 1)$
55 : $P_{1078} = (5, 2, 3, 1)$	109 : $P_{1970} = (1, 10, 6, 1)$
56 : $P_{1080} = (7, 2, 3, 1)$	110 : $P_{1978} = (9, 10, 6, 1)$
57 : $P_{1094} = (5, 3, 3, 1)$	111 : $P_{1990} = (5, 11, 6, 1)$
58 : $P_{1100} = (11, 3, 3, 1)$	112 : $P_{1996} = (11, 11, 6, 1)$
59 : $P_{1112} = (7, 4, 3, 1)$	113 : $P_{2022} = (5, 13, 6, 1)$
60 : $P_{1117} = (12, 4, 3, 1)$	114 : $P_{2032} = (15, 13, 6, 1)$
61 : $P_{1144} = (7, 6, 3, 1)$	115 : $P_{2053} = (4, 15, 6, 1)$
62 : $P_{1152} = (15, 6, 3, 1)$	116 : $P_{2058} = (9, 15, 6, 1)$
63 : $P_{1159} = (6, 7, 3, 1)$	117 : $P_{2074} = (9, 0, 7, 1)$

118 : $P_{2093} = (12, 1, 7, 1)$	172 : $P_{3018} = (9, 11, 10, 1)$
119 : $P_{2147} = (2, 5, 7, 1)$	173 : $P_{3036} = (11, 12, 10, 1)$
120 : $P_{2159} = (14, 5, 7, 1)$	174 : $P_{3038} = (13, 12, 10, 1)$
121 : $P_{2190} = (13, 7, 7, 1)$	175 : $P_{3052} = (11, 13, 10, 1)$
122 : $P_{2192} = (15, 7, 7, 1)$	176 : $P_{3053} = (12, 13, 10, 1)$
123 : $P_{2212} = (3, 9, 7, 1)$	177 : $P_{3089} = (0, 0, 11, 1)$
124 : $P_{2222} = (13, 9, 7, 1)$	178 : $P_{3115} = (10, 1, 11, 1)$
125 : $P_{2226} = (1, 10, 7, 1)$	179 : $P_{3192} = (7, 6, 11, 1)$
126 : $P_{2227} = (2, 10, 7, 1)$	180 : $P_{3195} = (10, 6, 11, 1)$
127 : $P_{2252} = (11, 11, 7, 1)$	181 : $P_{3207} = (6, 7, 11, 1)$
128 : $P_{2256} = (15, 11, 7, 1)$	182 : $P_{3211} = (10, 7, 11, 1)$
129 : $P_{2262} = (5, 12, 7, 1)$	183 : $P_{3253} = (4, 10, 11, 1)$
130 : $P_{2272} = (15, 12, 7, 1)$	184 : $P_{3263} = (14, 10, 11, 1)$
131 : $P_{2297} = (8, 14, 7, 1)$	185 : $P_{3271} = (6, 11, 11, 1)$
132 : $P_{2302} = (13, 14, 7, 1)$	186 : $P_{3272} = (7, 11, 11, 1)$
133 : $P_{2307} = (2, 15, 7, 1)$	187 : $P_{3287} = (6, 12, 11, 1)$
134 : $P_{2314} = (9, 15, 7, 1)$	188 : $P_{3289} = (8, 12, 11, 1)$
135 : $P_{2323} = (2, 0, 8, 1)$	189 : $P_{3300} = (3, 13, 11, 1)$
136 : $P_{2352} = (15, 1, 8, 1)$	190 : $P_{3304} = (7, 13, 11, 1)$
137 : $P_{2402} = (1, 5, 8, 1)$	191 : $P_{3359} = (14, 0, 12, 1)$
138 : $P_{2412} = (11, 5, 8, 1)$	192 : $P_{3367} = (6, 1, 12, 1)$
139 : $P_{2419} = (2, 6, 8, 1)$	193 : $P_{3384} = (7, 2, 12, 1)$
140 : $P_{2424} = (7, 6, 8, 1)$	194 : $P_{3392} = (15, 2, 12, 1)$
141 : $P_{2438} = (5, 7, 8, 1)$	195 : $P_{3397} = (4, 3, 12, 1)$
142 : $P_{2439} = (6, 7, 8, 1)$	196 : $P_{3407} = (14, 3, 12, 1)$
143 : $P_{2460} = (11, 8, 8, 1)$	197 : $P_{3444} = (3, 6, 12, 1)$
144 : $P_{2464} = (15, 8, 8, 1)$	198 : $P_{3449} = (8, 6, 12, 1)$
145 : $P_{2471} = (6, 9, 8, 1)$	199 : $P_{3475} = (2, 8, 12, 1)$
146 : $P_{2480} = (15, 9, 8, 1)$	200 : $P_{3477} = (4, 8, 12, 1)$
147 : $P_{2516} = (3, 12, 8, 1)$	201 : $P_{3508} = (3, 10, 12, 1)$
148 : $P_{2525} = (12, 12, 8, 1)$	202 : $P_{3515} = (10, 10, 12, 1)$
149 : $P_{2539} = (10, 13, 8, 1)$	203 : $P_{3522} = (1, 11, 12, 1)$
150 : $P_{2540} = (11, 13, 8, 1)$	204 : $P_{3525} = (4, 11, 12, 1)$
151 : $P_{2551} = (6, 14, 8, 1)$	205 : $P_{3540} = (3, 12, 12, 1)$
152 : $P_{2558} = (13, 14, 8, 1)$	206 : $P_{3544} = (7, 12, 12, 1)$
153 : $P_{2591} = (14, 0, 9, 1)$	207 : $P_{3574} = (5, 14, 12, 1)$
154 : $P_{2607} = (14, 1, 9, 1)$	208 : $P_{3576} = (7, 14, 12, 1)$
155 : $P_{2637} = (12, 3, 9, 1)$	209 : $P_{3605} = (4, 0, 13, 1)$
156 : $P_{2638} = (13, 3, 9, 1)$	210 : $P_{3624} = (7, 1, 13, 1)$
157 : $P_{2678} = (5, 6, 9, 1)$	211 : $P_{3658} = (9, 3, 13, 1)$
158 : $P_{2688} = (15, 6, 9, 1)$	212 : $P_{3663} = (14, 3, 13, 1)$
159 : $P_{2780} = (11, 12, 9, 1)$	213 : $P_{3671} = (6, 4, 13, 1)$
160 : $P_{2781} = (12, 12, 9, 1)$	214 : $P_{3680} = (15, 4, 13, 1)$
161 : $P_{2825} = (8, 15, 9, 1)$	215 : $P_{3716} = (3, 7, 13, 1)$
162 : $P_{2829} = (12, 15, 9, 1)$	216 : $P_{3721} = (8, 7, 13, 1)$
163 : $P_{2833} = (0, 0, 10, 1)$	217 : $P_{3733} = (4, 8, 13, 1)$
164 : $P_{2860} = (11, 1, 10, 1)$	218 : $P_{3743} = (14, 8, 13, 1)$
165 : $P_{2942} = (13, 6, 10, 1)$	219 : $P_{3750} = (5, 9, 13, 1)$
166 : $P_{2944} = (15, 6, 10, 1)$	220 : $P_{3751} = (6, 9, 13, 1)$
167 : $P_{2950} = (5, 7, 10, 1)$	221 : $P_{3769} = (8, 10, 13, 1)$
168 : $P_{2957} = (12, 7, 10, 1)$	222 : $P_{3771} = (10, 10, 13, 1)$
169 : $P_{3005} = (12, 10, 10, 1)$	223 : $P_{3778} = (1, 11, 13, 1)$
170 : $P_{3006} = (13, 10, 10, 1)$	224 : $P_{3791} = (14, 11, 13, 1)$
171 : $P_{3011} = (2, 11, 10, 1)$	225 : $P_{3815} = (6, 13, 13, 1)$

226 : $P_{3817} = (8, 13, 13, 1)$
 227 : $P_{3859} = (2, 0, 14, 1)$
 228 : $P_{3875} = (2, 1, 14, 1)$
 229 : $P_{3911} = (6, 3, 14, 1)$
 230 : $P_{3920} = (15, 3, 14, 1)$
 231 : $P_{3943} = (6, 5, 14, 1)$
 232 : $P_{3944} = (7, 5, 14, 1)$
 233 : $P_{3959} = (6, 6, 14, 1)$
 234 : $P_{3963} = (10, 6, 14, 1)$
 235 : $P_{4068} = (3, 13, 14, 1)$
 236 : $P_{4073} = (8, 13, 14, 1)$
 237 : $P_{4117} = (4, 0, 15, 1)$
 238 : $P_{4132} = (3, 1, 15, 1)$
 239 : $P_{4152} = (7, 2, 15, 1)$
 240 : $P_{4158} = (13, 2, 15, 1)$

241 : $P_{4214} = (5, 6, 15, 1)$
 242 : $P_{4215} = (6, 6, 15, 1)$
 243 : $P_{4235} = (10, 7, 15, 1)$
 244 : $P_{4236} = (11, 7, 15, 1)$
 245 : $P_{4242} = (1, 8, 15, 1)$
 246 : $P_{4251} = (10, 8, 15, 1)$
 247 : $P_{4313} = (8, 12, 15, 1)$
 248 : $P_{4318} = (13, 12, 15, 1)$
 249 : $P_{4325} = (4, 13, 15, 1)$
 250 : $P_{4333} = (12, 13, 15, 1)$
 251 : $P_{4340} = (3, 14, 15, 1)$
 252 : $P_{4350} = (13, 14, 15, 1)$
 253 : $P_{4356} = (3, 15, 15, 1)$
 254 : $P_{4363} = (10, 15, 15, 1)$

Line Intersection Graph

	0 1
0	0 0
1	0 0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line
in point

Line 1 intersects

Line
in point

The surface has 289 points:

The points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$	21 : $P_{293} = (3, 1, 0, 1)$	42 : $P_{434} = (0, 10, 0, 1)$
1 : $P_4 = (1, 1, 1, 1)$	22 : $P_{294} = (4, 1, 0, 1)$	43 : $P_{450} = (0, 11, 0, 1)$
2 : $P_5 = (1, 1, 0, 0)$	23 : $P_{295} = (5, 1, 0, 1)$	44 : $P_{476} = (10, 12, 0, 1)$
3 : $P_{35} = (0, 1, 1, 0)$	24 : $P_{296} = (6, 1, 0, 1)$	45 : $P_{492} = (10, 13, 0, 1)$
4 : $P_{36} = (1, 1, 1, 0)$	25 : $P_{297} = (7, 1, 0, 1)$	46 : $P_{504} = (6, 14, 0, 1)$
5 : $P_{71} = (4, 3, 1, 0)$	26 : $P_{298} = (8, 1, 0, 1)$	47 : $P_{520} = (6, 15, 0, 1)$
6 : $P_{72} = (5, 3, 1, 0)$	27 : $P_{299} = (9, 1, 0, 1)$	48 : $P_{530} = (0, 0, 1, 1)$
7 : $P_{107} = (8, 5, 1, 0)$	28 : $P_{300} = (10, 1, 0, 1)$	49 : $P_{563} = (2, 2, 1, 1)$
8 : $P_{108} = (9, 5, 1, 0)$	29 : $P_{301} = (11, 1, 0, 1)$	50 : $P_{572} = (11, 2, 1, 1)$
9 : $P_{161} = (14, 8, 1, 0)$	30 : $P_{302} = (12, 1, 0, 1)$	51 : $P_{580} = (3, 3, 1, 1)$
10 : $P_{162} = (15, 8, 1, 0)$	31 : $P_{303} = (13, 1, 0, 1)$	52 : $P_{591} = (14, 3, 1, 1)$
11 : $P_{179} = (0, 10, 1, 0)$	32 : $P_{304} = (14, 1, 0, 1)$	53 : $P_{597} = (4, 4, 1, 1)$
12 : $P_{180} = (1, 10, 1, 0)$	33 : $P_{305} = (15, 1, 0, 1)$	54 : $P_{603} = (10, 4, 1, 1)$
13 : $P_{195} = (0, 11, 1, 0)$	34 : $P_{319} = (13, 2, 0, 1)$	55 : $P_{611} = (2, 5, 1, 1)$
14 : $P_{196} = (1, 11, 1, 0)$	35 : $P_{335} = (13, 3, 0, 1)$	56 : $P_{614} = (5, 5, 1, 1)$
15 : $P_{261} = (2, 15, 1, 0)$	36 : $P_{345} = (7, 4, 0, 1)$	57 : $P_{631} = (6, 6, 1, 1)$
16 : $P_{262} = (3, 15, 1, 0)$	37 : $P_{361} = (7, 5, 0, 1)$	58 : $P_{634} = (9, 6, 1, 1)$
17 : $P_{275} = (1, 0, 0, 1)$	38 : $P_{381} = (11, 6, 0, 1)$	59 : $P_{643} = (2, 7, 1, 1)$
18 : $P_{290} = (0, 1, 0, 1)$	39 : $P_{397} = (11, 7, 0, 1)$	60 : $P_{648} = (7, 7, 1, 1)$
19 : $P_{291} = (1, 1, 0, 1)$	40 : $P_{414} = (12, 8, 0, 1)$	61 : $P_{661} = (4, 8, 1, 1)$
20 : $P_{292} = (2, 1, 0, 1)$	41 : $P_{430} = (12, 9, 0, 1)$	62 : $P_{665} = (8, 8, 1, 1)$

63 : $P_{682} = (9, 9, 1, 1)$	117 : $P_{1602} = (1, 3, 5, 1)$	171 : $P_{2402} = (1, 5, 8, 1)$
64 : $P_{684} = (11, 9, 1, 1)$	118 : $P_{1611} = (10, 3, 5, 1)$	172 : $P_{2412} = (11, 5, 8, 1)$
65 : $P_{690} = (1, 10, 1, 1)$	119 : $P_{1625} = (8, 4, 5, 1)$	173 : $P_{2419} = (2, 6, 8, 1)$
66 : $P_{699} = (10, 10, 1, 1)$	120 : $P_{1629} = (12, 4, 5, 1)$	174 : $P_{2424} = (7, 6, 8, 1)$
67 : $P_{706} = (1, 11, 1, 1)$	121 : $P_{1641} = (8, 5, 5, 1)$	175 : $P_{2438} = (5, 7, 8, 1)$
68 : $P_{716} = (11, 11, 1, 1)$	122 : $P_{1643} = (10, 5, 5, 1)$	176 : $P_{2439} = (6, 7, 8, 1)$
69 : $P_{725} = (4, 12, 1, 1)$	123 : $P_{1659} = (10, 6, 5, 1)$	177 : $P_{2460} = (11, 8, 8, 1)$
70 : $P_{733} = (12, 12, 1, 1)$	124 : $P_{1660} = (11, 6, 5, 1)$	178 : $P_{2464} = (15, 8, 8, 1)$
71 : $P_{750} = (13, 13, 1, 1)$	125 : $P_{1672} = (7, 7, 5, 1)$	179 : $P_{2471} = (6, 9, 8, 1)$
72 : $P_{751} = (14, 13, 1, 1)$	126 : $P_{1680} = (15, 7, 5, 1)$	180 : $P_{2480} = (15, 9, 8, 1)$
73 : $P_{763} = (10, 14, 1, 1)$	127 : $P_{1703} = (6, 9, 5, 1)$	181 : $P_{2516} = (3, 12, 8, 1)$
74 : $P_{767} = (14, 14, 1, 1)$	128 : $P_{1709} = (12, 9, 5, 1)$	182 : $P_{2525} = (12, 12, 8, 1)$
75 : $P_{778} = (9, 15, 1, 1)$	129 : $P_{1758} = (13, 12, 5, 1)$	183 : $P_{2539} = (10, 13, 8, 1)$
76 : $P_{784} = (15, 15, 1, 1)$	130 : $P_{1759} = (14, 12, 5, 1)$	184 : $P_{2540} = (11, 13, 8, 1)$
77 : $P_{789} = (4, 0, 2, 1)$	131 : $P_{1764} = (3, 13, 5, 1)$	185 : $P_{2551} = (6, 14, 8, 1)$
78 : $P_{805} = (4, 1, 2, 1)$	132 : $P_{1773} = (12, 13, 5, 1)$	186 : $P_{2558} = (13, 14, 8, 1)$
79 : $P_{868} = (3, 5, 2, 1)$	133 : $P_{1811} = (2, 0, 6, 1)$	187 : $P_{2591} = (14, 0, 9, 1)$
80 : $P_{878} = (13, 5, 2, 1)$	134 : $P_{1838} = (13, 1, 6, 1)$	188 : $P_{2607} = (14, 1, 9, 1)$
81 : $P_{902} = (5, 7, 2, 1)$	135 : $P_{1849} = (8, 2, 6, 1)$	189 : $P_{2637} = (12, 3, 9, 1)$
82 : $P_{912} = (15, 7, 2, 1)$	136 : $P_{1853} = (12, 2, 6, 1)$	190 : $P_{2638} = (13, 3, 9, 1)$
83 : $P_{925} = (12, 8, 2, 1)$	137 : $P_{1876} = (3, 4, 6, 1)$	191 : $P_{2678} = (5, 6, 9, 1)$
84 : $P_{926} = (13, 8, 2, 1)$	138 : $P_{1885} = (12, 4, 6, 1)$	192 : $P_{2688} = (15, 6, 9, 1)$
85 : $P_{1004} = (11, 13, 2, 1)$	139 : $P_{1891} = (2, 5, 6, 1)$	193 : $P_{2780} = (11, 12, 9, 1)$
86 : $P_{1006} = (13, 13, 2, 1)$	140 : $P_{1898} = (9, 5, 6, 1)$	194 : $P_{2781} = (12, 12, 9, 1)$
87 : $P_{1050} = (9, 0, 3, 1)$	141 : $P_{1910} = (5, 6, 6, 1)$	195 : $P_{2825} = (8, 15, 9, 1)$
88 : $P_{1062} = (5, 1, 3, 1)$	142 : $P_{1917} = (12, 6, 6, 1)$	196 : $P_{2829} = (12, 15, 9, 1)$
89 : $P_{1078} = (5, 2, 3, 1)$	143 : $P_{1970} = (1, 10, 6, 1)$	197 : $P_{2833} = (0, 0, 10, 1)$
90 : $P_{1080} = (7, 2, 3, 1)$	144 : $P_{1978} = (9, 10, 6, 1)$	198 : $P_{2860} = (11, 1, 10, 1)$
91 : $P_{1094} = (5, 3, 3, 1)$	145 : $P_{1990} = (5, 11, 6, 1)$	199 : $P_{2942} = (13, 6, 10, 1)$
92 : $P_{1100} = (11, 3, 3, 1)$	146 : $P_{1996} = (11, 11, 6, 1)$	200 : $P_{2944} = (15, 6, 10, 1)$
93 : $P_{1112} = (7, 4, 3, 1)$	147 : $P_{2022} = (5, 13, 6, 1)$	201 : $P_{2950} = (5, 7, 10, 1)$
94 : $P_{1117} = (12, 4, 3, 1)$	148 : $P_{2032} = (15, 13, 6, 1)$	202 : $P_{2957} = (12, 7, 10, 1)$
95 : $P_{1144} = (7, 6, 3, 1)$	149 : $P_{2053} = (4, 15, 6, 1)$	203 : $P_{3005} = (12, 10, 10, 1)$
96 : $P_{1152} = (15, 6, 3, 1)$	150 : $P_{2058} = (9, 15, 6, 1)$	204 : $P_{3006} = (13, 10, 10, 1)$
97 : $P_{1159} = (6, 7, 3, 1)$	151 : $P_{2074} = (9, 0, 7, 1)$	205 : $P_{3011} = (2, 11, 10, 1)$
98 : $P_{1162} = (9, 7, 3, 1)$	152 : $P_{2093} = (12, 1, 7, 1)$	206 : $P_{3018} = (9, 11, 10, 1)$
99 : $P_{1243} = (10, 12, 3, 1)$	153 : $P_{2147} = (2, 5, 7, 1)$	207 : $P_{3036} = (11, 12, 10, 1)$
100 : $P_{1244} = (11, 12, 3, 1)$	154 : $P_{2159} = (14, 5, 7, 1)$	208 : $P_{3038} = (13, 12, 10, 1)$
101 : $P_{1257} = (8, 13, 3, 1)$	155 : $P_{2190} = (13, 7, 7, 1)$	209 : $P_{3052} = (11, 13, 10, 1)$
102 : $P_{1262} = (13, 13, 3, 1)$	156 : $P_{2192} = (15, 7, 7, 1)$	210 : $P_{3053} = (12, 13, 10, 1)$
103 : $P_{1282} = (1, 15, 3, 1)$	157 : $P_{2212} = (3, 9, 7, 1)$	211 : $P_{3089} = (0, 0, 11, 1)$
104 : $P_{1292} = (11, 15, 3, 1)$	158 : $P_{2222} = (13, 9, 7, 1)$	212 : $P_{3115} = (10, 1, 11, 1)$
105 : $P_{1306} = (9, 0, 4, 1)$	159 : $P_{2226} = (1, 10, 7, 1)$	213 : $P_{3192} = (7, 6, 11, 1)$
106 : $P_{1322} = (9, 1, 4, 1)$	160 : $P_{2227} = (2, 10, 7, 1)$	214 : $P_{3195} = (10, 6, 11, 1)$
107 : $P_{1416} = (7, 7, 4, 1)$	161 : $P_{2252} = (11, 11, 7, 1)$	215 : $P_{3207} = (6, 7, 11, 1)$
108 : $P_{1419} = (10, 7, 4, 1)$	162 : $P_{2256} = (15, 11, 7, 1)$	216 : $P_{3211} = (10, 7, 11, 1)$
109 : $P_{1430} = (5, 8, 4, 1)$	163 : $P_{2262} = (5, 12, 7, 1)$	217 : $P_{3253} = (4, 10, 11, 1)$
110 : $P_{1432} = (7, 8, 4, 1)$	164 : $P_{2272} = (15, 12, 7, 1)$	218 : $P_{3263} = (14, 10, 11, 1)$
111 : $P_{1492} = (3, 12, 4, 1)$	165 : $P_{2297} = (8, 14, 7, 1)$	219 : $P_{3271} = (6, 11, 11, 1)$
112 : $P_{1497} = (8, 12, 4, 1)$	166 : $P_{2302} = (13, 14, 7, 1)$	220 : $P_{3272} = (7, 11, 11, 1)$
113 : $P_{1543} = (6, 15, 4, 1)$	167 : $P_{2307} = (2, 15, 7, 1)$	221 : $P_{3287} = (6, 12, 11, 1)$
114 : $P_{1544} = (7, 15, 4, 1)$	168 : $P_{2314} = (9, 15, 7, 1)$	222 : $P_{3289} = (8, 12, 11, 1)$
115 : $P_{1567} = (14, 0, 5, 1)$	169 : $P_{2323} = (2, 0, 8, 1)$	223 : $P_{3300} = (3, 13, 11, 1)$
116 : $P_{1577} = (8, 1, 5, 1)$	170 : $P_{2352} = (15, 1, 8, 1)$	224 : $P_{3304} = (7, 13, 11, 1)$

225 : $P_{3359} = (14, 0, 12, 1)$	247 : $P_{3671} = (6, 4, 13, 1)$	269 : $P_{4068} = (3, 13, 14, 1)$
226 : $P_{3367} = (6, 1, 12, 1)$	248 : $P_{3680} = (15, 4, 13, 1)$	270 : $P_{4073} = (8, 13, 14, 1)$
227 : $P_{3384} = (7, 2, 12, 1)$	249 : $P_{3716} = (3, 7, 13, 1)$	271 : $P_{4117} = (4, 0, 15, 1)$
228 : $P_{3392} = (15, 2, 12, 1)$	250 : $P_{3721} = (8, 7, 13, 1)$	272 : $P_{4132} = (3, 1, 15, 1)$
229 : $P_{3397} = (4, 3, 12, 1)$	251 : $P_{3733} = (4, 8, 13, 1)$	273 : $P_{4152} = (7, 2, 15, 1)$
230 : $P_{3407} = (14, 3, 12, 1)$	252 : $P_{3743} = (14, 8, 13, 1)$	274 : $P_{4158} = (13, 2, 15, 1)$
231 : $P_{3444} = (3, 6, 12, 1)$	253 : $P_{3750} = (5, 9, 13, 1)$	275 : $P_{4214} = (5, 6, 15, 1)$
232 : $P_{3449} = (8, 6, 12, 1)$	254 : $P_{3751} = (6, 9, 13, 1)$	276 : $P_{4215} = (6, 6, 15, 1)$
233 : $P_{3475} = (2, 8, 12, 1)$	255 : $P_{3769} = (8, 10, 13, 1)$	277 : $P_{4235} = (10, 7, 15, 1)$
234 : $P_{3477} = (4, 8, 12, 1)$	256 : $P_{3771} = (10, 10, 13, 1)$	278 : $P_{4236} = (11, 7, 15, 1)$
235 : $P_{3508} = (3, 10, 12, 1)$	257 : $P_{3778} = (1, 11, 13, 1)$	279 : $P_{4242} = (1, 8, 15, 1)$
236 : $P_{3515} = (10, 10, 12, 1)$	258 : $P_{3791} = (14, 11, 13, 1)$	280 : $P_{4251} = (10, 8, 15, 1)$
237 : $P_{3522} = (1, 11, 12, 1)$	259 : $P_{3815} = (6, 13, 13, 1)$	281 : $P_{4313} = (8, 12, 15, 1)$
238 : $P_{3525} = (4, 11, 12, 1)$	260 : $P_{3817} = (8, 13, 13, 1)$	282 : $P_{4318} = (13, 12, 15, 1)$
239 : $P_{3540} = (3, 12, 12, 1)$	261 : $P_{3859} = (2, 0, 14, 1)$	283 : $P_{4325} = (4, 13, 15, 1)$
240 : $P_{3544} = (7, 12, 12, 1)$	262 : $P_{3875} = (2, 1, 14, 1)$	284 : $P_{4333} = (12, 13, 15, 1)$
241 : $P_{3574} = (5, 14, 12, 1)$	263 : $P_{3911} = (6, 3, 14, 1)$	285 : $P_{4340} = (3, 14, 15, 1)$
242 : $P_{3576} = (7, 14, 12, 1)$	264 : $P_{3920} = (15, 3, 14, 1)$	286 : $P_{4350} = (13, 14, 15, 1)$
243 : $P_{3605} = (4, 0, 13, 1)$	265 : $P_{3943} = (6, 5, 14, 1)$	287 : $P_{4356} = (3, 15, 15, 1)$
244 : $P_{3624} = (7, 1, 13, 1)$	266 : $P_{3944} = (7, 5, 14, 1)$	288 : $P_{4363} = (10, 15, 15, 1)$
245 : $P_{3658} = (9, 3, 13, 1)$	267 : $P_{3959} = (6, 6, 14, 1)$	
246 : $P_{3663} = (14, 3, 13, 1)$	268 : $P_{3963} = (10, 6, 14, 1)$	