

# Rank-65612 over GF(32)

January 15, 2021

## The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(32) is -2112814042

## General information

Number of lines	1
Number of points	1025
Number of singular points	2
Number of Eckardt points	0
Number of double points	0
Number of single points	33
Number of points off lines	992
Number of Hesse planes	0
Number of axes	0
Type of points on lines	33
Type of lines on points	$1^{33}, 0^{992}$

## Singular Points

The surface has 2 singular points:

$$0 : P_1 = \mathbf{P}(0, 1, 0, 0) = \mathbf{P}(0, 1, 0, 0)$$

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

## The 1 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1082368} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1082368} = \mathbf{Pl}(0, 0, 0, 0, 0, 1)_{34849}$$

Rank of lines: ( 1082368 )  
Rank of points on Klein quadric: ( 34849 )

### 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 33 single points:  
The single points on the surface are:

- |  |   |
|--|---|
| 0 : $P_1 = (0, 1, 0, 0)$ lies on line $\ell_0$       | 17 : $P_{547} = (0, 16, 1, 0)$ lies on line $\ell_0$  |
| 1 : $P_2 = (0, 0, 1, 0)$ lies on line $\ell_0$       | 18 : $P_{579} = (0, 17, 1, 0)$ lies on line $\ell_0$  |
| 2 : $P_{67} = (0, 1, 1, 0)$ lies on line $\ell_0$    | 19 : $P_{611} = (0, 18, 1, 0)$ lies on line $\ell_0$  |
| 3 : $P_{99} = (0, 2, 1, 0)$ lies on line $\ell_0$    | 20 : $P_{643} = (0, 19, 1, 0)$ lies on line $\ell_0$  |
| 4 : $P_{131} = (0, 3, 1, 0)$ lies on line $\ell_0$   | 21 : $P_{675} = (0, 20, 1, 0)$ lies on line $\ell_0$  |
| 5 : $P_{163} = (0, 4, 1, 0)$ lies on line $\ell_0$   | 22 : $P_{707} = (0, 21, 1, 0)$ lies on line $\ell_0$  |
| 6 : $P_{195} = (0, 5, 1, 0)$ lies on line $\ell_0$   | 23 : $P_{739} = (0, 22, 1, 0)$ lies on line $\ell_0$  |
| 7 : $P_{227} = (0, 6, 1, 0)$ lies on line $\ell_0$   | 24 : $P_{771} = (0, 23, 1, 0)$ lies on line $\ell_0$  |
| 8 : $P_{259} = (0, 7, 1, 0)$ lies on line $\ell_0$   | 25 : $P_{803} = (0, 24, 1, 0)$ lies on line $\ell_0$  |
| 9 : $P_{291} = (0, 8, 1, 0)$ lies on line $\ell_0$   | 26 : $P_{835} = (0, 25, 1, 0)$ lies on line $\ell_0$  |
| 10 : $P_{323} = (0, 9, 1, 0)$ lies on line $\ell_0$  | 27 : $P_{867} = (0, 26, 1, 0)$ lies on line $\ell_0$  |
| 11 : $P_{355} = (0, 10, 1, 0)$ lies on line $\ell_0$ | 28 : $P_{899} = (0, 27, 1, 0)$ lies on line $\ell_0$  |
| 12 : $P_{387} = (0, 11, 1, 0)$ lies on line $\ell_0$ | 29 : $P_{931} = (0, 28, 1, 0)$ lies on line $\ell_0$  |
| 13 : $P_{419} = (0, 12, 1, 0)$ lies on line $\ell_0$ | 30 : $P_{963} = (0, 29, 1, 0)$ lies on line $\ell_0$  |
| 14 : $P_{451} = (0, 13, 1, 0)$ lies on line $\ell_0$ | 31 : $P_{995} = (0, 30, 1, 0)$ lies on line $\ell_0$  |
| 15 : $P_{483} = (0, 14, 1, 0)$ lies on line $\ell_0$ | 32 : $P_{1027} = (0, 31, 1, 0)$ lies on line $\ell_0$ |
| 16 : $P_{515} = (0, 15, 1, 0)$ lies on line $\ell_0$ |   |

The single points on the surface are:

### Points on surface but on no line

The surface has 992 points not on any line:  
The points on the surface but not on lines are:

- |                               |                                |
|-------------------------------|--------------------------------|
| 0 : $P_4 = (1, 1, 1, 1)$      | 6 : $P_{252} = (25, 6, 1, 0)$  |
| 1 : $P_{68} = (1, 1, 1, 0)$   | 7 : $P_{283} = (24, 7, 1, 0)$  |
| 2 : $P_{126} = (27, 2, 1, 0)$ | 8 : $P_{310} = (19, 8, 1, 0)$  |
| 3 : $P_{157} = (26, 3, 1, 0)$ | 9 : $P_{341} = (18, 9, 1, 0)$  |
| 4 : $P_{165} = (2, 4, 1, 0)$  | 10 : $P_{363} = (8, 10, 1, 0)$ |
| 5 : $P_{198} = (3, 5, 1, 0)$  | 11 : $P_{396} = (9, 11, 1, 0)$ |

12 : $P_{436} = (17, 12, 1, 0)$	66 : $P_{3288} = (23, 5, 2, 1)$
13 : $P_{467} = (16, 13, 1, 0)$	67 : $P_{3323} = (26, 6, 2, 1)$
14 : $P_{493} = (10, 14, 1, 0)$	68 : $P_{3353} = (24, 7, 2, 1)$
15 : $P_{526} = (11, 15, 1, 0)$	69 : $P_{3427} = (2, 10, 2, 1)$
16 : $P_{551} = (4, 16, 1, 0)$	70 : $P_{3433} = (8, 10, 2, 1)$
17 : $P_{584} = (5, 17, 1, 0)$	71 : $P_{3436} = (11, 10, 2, 1)$
18 : $P_{642} = (31, 18, 1, 0)$	72 : $P_{3471} = (14, 11, 2, 1)$
19 : $P_{673} = (30, 19, 1, 0)$	73 : $P_{3473} = (16, 11, 2, 1)$
20 : $P_{681} = (6, 20, 1, 0)$	74 : $P_{3488} = (31, 11, 2, 1)$
21 : $P_{714} = (7, 21, 1, 0)$	75 : $P_{3518} = (29, 12, 2, 1)$
22 : $P_{768} = (29, 22, 1, 0)$	76 : $P_{3524} = (3, 13, 2, 1)$
23 : $P_{799} = (28, 23, 1, 0)$	77 : $P_{3559} = (6, 14, 2, 1)$
24 : $P_{826} = (23, 24, 1, 0)$	78 : $P_{3592} = (7, 15, 2, 1)$
25 : $P_{857} = (22, 25, 1, 0)$	79 : $P_{3634} = (17, 16, 2, 1)$
26 : $P_{879} = (12, 26, 1, 0)$	80 : $P_{3671} = (22, 17, 2, 1)$
27 : $P_{912} = (13, 27, 1, 0)$	81 : $P_{3682} = (1, 18, 2, 1)$
28 : $P_{952} = (21, 28, 1, 0)$	82 : $P_{3718} = (5, 19, 2, 1)$
29 : $P_{983} = (20, 29, 1, 0)$	83 : $P_{3898} = (25, 24, 2, 1)$
30 : $P_{1009} = (14, 30, 1, 0)$	84 : $P_{3925} = (20, 25, 2, 1)$
31 : $P_{1042} = (15, 31, 1, 0)$	85 : $P_{3949} = (12, 26, 2, 1)$
32 : $P_{2182} = (5, 3, 1, 1)$	86 : $P_{3990} = (21, 27, 2, 1)$
33 : $P_{2258} = (17, 5, 1, 1)$	87 : $P_{4005} = (4, 28, 2, 1)$
34 : $P_{2282} = (9, 6, 1, 1)$	88 : $P_{4011} = (10, 28, 2, 1)$
35 : $P_{2292} = (19, 6, 1, 1)$	89 : $P_{4016} = (15, 28, 2, 1)$
36 : $P_{2300} = (27, 6, 1, 1)$	90 : $P_{4078} = (13, 30, 2, 1)$
37 : $P_{2327} = (22, 7, 1, 1)$	91 : $P_{4083} = (18, 30, 2, 1)$
38 : $P_{2365} = (28, 8, 1, 1)$	92 : $P_{4095} = (30, 30, 2, 1)$
39 : $P_{2424} = (23, 10, 1, 1)$	93 : $P_{4166} = (5, 1, 3, 1)$
40 : $P_{2491} = (26, 12, 1, 1)$	94 : $P_{4202} = (9, 2, 3, 1)$
41 : $P_{2553} = (24, 14, 1, 1)$	95 : $P_{4212} = (19, 2, 3, 1)$
42 : $P_{2637} = (12, 17, 1, 1)$	96 : $P_{4220} = (27, 2, 3, 1)$
43 : $P_{2710} = (21, 19, 1, 1)$	97 : $P_{4242} = (17, 3, 3, 1)$
44 : $P_{2723} = (2, 20, 1, 1)$	98 : $P_{4283} = (26, 4, 3, 1)$
45 : $P_{2729} = (8, 20, 1, 1)$	99 : $P_{4344} = (23, 6, 3, 1)$
46 : $P_{2732} = (11, 20, 1, 1)$	100 : $P_{4414} = (29, 8, 3, 1)$
47 : $P_{2778} = (25, 21, 1, 1)$	101 : $P_{4456} = (7, 10, 3, 1)$
48 : $P_{2799} = (14, 22, 1, 1)$	102 : $P_{4485} = (4, 11, 3, 1)$
49 : $P_{2801} = (16, 22, 1, 1)$	103 : $P_{4491} = (10, 11, 3, 1)$
50 : $P_{2816} = (31, 22, 1, 1)$	104 : $P_{4496} = (15, 11, 3, 1)$
51 : $P_{2837} = (20, 23, 1, 1)$	105 : $P_{4515} = (2, 12, 3, 1)$
52 : $P_{2878} = (29, 24, 1, 1)$	106 : $P_{4521} = (8, 12, 3, 1)$
53 : $P_{2894} = (13, 25, 1, 1)$	107 : $P_{4524} = (11, 12, 3, 1)$
54 : $P_{2899} = (18, 25, 1, 1)$	108 : $P_{4565} = (20, 13, 3, 1)$
55 : $P_{2911} = (30, 25, 1, 1)$	109 : $P_{4621} = (12, 15, 3, 1)$
56 : $P_{2916} = (3, 26, 1, 1)$	110 : $P_{4666} = (25, 16, 3, 1)$
57 : $P_{2983} = (6, 28, 1, 1)$	111 : $P_{4687} = (14, 17, 3, 1)$
58 : $P_{3013} = (4, 29, 1, 1)$	112 : $P_{4689} = (16, 17, 3, 1)$
59 : $P_{3019} = (10, 29, 1, 1)$	113 : $P_{4704} = (31, 17, 3, 1)$
60 : $P_{3024} = (15, 29, 1, 1)$	114 : $P_{4726} = (21, 18, 3, 1)$
61 : $P_{3048} = (7, 30, 1, 1)$	115 : $P_{4782} = (13, 20, 3, 1)$
62 : $P_{3210} = (9, 3, 2, 1)$	116 : $P_{4787} = (18, 20, 3, 1)$
63 : $P_{3220} = (19, 3, 2, 1)$	117 : $P_{4799} = (30, 20, 3, 1)$
64 : $P_{3228} = (27, 3, 2, 1)$	118 : $P_{4804} = (3, 21, 3, 1)$
65 : $P_{3261} = (28, 4, 2, 1)$	119 : $P_{4871} = (6, 23, 3, 1)$

120 : $P_{4953} = (24, 25, 3, 1)$	174 : $P_{6841} = (24, 20, 5, 1)$
121 : $P_{5021} = (28, 27, 3, 1)$	175 : $P_{6914} = (1, 23, 5, 1)$
122 : $P_{5026} = (1, 28, 3, 1)$	176 : $P_{6965} = (20, 24, 5, 1)$
123 : $P_{5111} = (22, 30, 3, 1)$	177 : $P_{7013} = (4, 26, 5, 1)$
124 : $P_{5245} = (28, 2, 4, 1)$	178 : $P_{7019} = (10, 26, 5, 1)$
125 : $P_{5275} = (26, 3, 4, 1)$	179 : $P_{7024} = (15, 26, 5, 1)$
126 : $P_{5315} = (2, 5, 4, 1)$	180 : $P_{7070} = (29, 27, 5, 1)$
127 : $P_{5321} = (8, 5, 4, 1)$	181 : $P_{7078} = (5, 28, 5, 1)$
128 : $P_{5324} = (11, 5, 4, 1)$	182 : $P_{7114} = (9, 29, 5, 1)$
129 : $P_{5374} = (29, 6, 4, 1)$	183 : $P_{7124} = (19, 29, 5, 1)$
130 : $P_{5383} = (6, 7, 4, 1)$	184 : $P_{7132} = (27, 29, 5, 1)$
131 : $P_{5426} = (17, 8, 4, 1)$	185 : $P_{7195} = (26, 31, 5, 1)$
132 : $P_{5442} = (1, 9, 4, 1)$	186 : $P_{7242} = (9, 1, 6, 1)$
133 : $P_{5562} = (25, 12, 4, 1)$	187 : $P_{7252} = (19, 1, 6, 1)$
134 : $P_{5581} = (12, 13, 4, 1)$	188 : $P_{7260} = (27, 1, 6, 1)$
135 : $P_{5605} = (4, 14, 4, 1)$	189 : $P_{7291} = (26, 2, 6, 1)$
136 : $P_{5611} = (10, 14, 4, 1)$	190 : $P_{7320} = (23, 3, 6, 1)$
137 : $P_{5616} = (15, 14, 4, 1)$	191 : $P_{7358} = (29, 4, 6, 1)$
138 : $P_{5646} = (13, 15, 4, 1)$	192 : $P_{7368} = (7, 5, 6, 1)$
139 : $P_{5651} = (18, 15, 4, 1)$	193 : $P_{7395} = (2, 6, 6, 1)$
140 : $P_{5663} = (30, 15, 4, 1)$	194 : $P_{7401} = (8, 6, 6, 1)$
141 : $P_{5688} = (23, 16, 4, 1)$	195 : $P_{7404} = (11, 6, 6, 1)$
142 : $P_{5721} = (24, 17, 4, 1)$	196 : $P_{7482} = (25, 8, 6, 1)$
143 : $P_{5770} = (9, 19, 4, 1)$	197 : $P_{7510} = (21, 9, 6, 1)$
144 : $P_{5780} = (19, 19, 4, 1)$	198 : $P_{7534} = (13, 10, 6, 1)$
145 : $P_{5788} = (27, 19, 4, 1)$	199 : $P_{7539} = (18, 10, 6, 1)$
146 : $P_{5796} = (3, 20, 4, 1)$	200 : $P_{7551} = (30, 10, 6, 1)$
147 : $P_{5832} = (7, 21, 4, 1)$	201 : $P_{7650} = (1, 14, 6, 1)$
148 : $P_{5903} = (14, 23, 4, 1)$	202 : $P_{7703} = (22, 15, 6, 1)$
149 : $P_{5905} = (16, 23, 4, 1)$	203 : $P_{7782} = (5, 18, 6, 1)$
150 : $P_{5920} = (31, 23, 4, 1)$	204 : $P_{7826} = (17, 19, 6, 1)$
151 : $P_{6007} = (22, 26, 4, 1)$	205 : $P_{7861} = (20, 20, 6, 1)$
152 : $P_{6022} = (5, 27, 4, 1)$	206 : $P_{7885} = (12, 21, 6, 1)$
153 : $P_{6133} = (20, 30, 4, 1)$	207 : $P_{7941} = (4, 23, 6, 1)$
154 : $P_{6166} = (21, 31, 4, 1)$	208 : $P_{7947} = (10, 23, 6, 1)$
155 : $P_{6226} = (17, 1, 5, 1)$	209 : $P_{7952} = (15, 23, 6, 1)$
156 : $P_{6264} = (23, 2, 5, 1)$	210 : $P_{7972} = (3, 24, 6, 1)$
157 : $P_{6307} = (2, 4, 5, 1)$	211 : $P_{8007} = (6, 25, 6, 1)$
158 : $P_{6313} = (8, 4, 5, 1)$	212 : $P_{8047} = (14, 26, 6, 1)$
159 : $P_{6316} = (11, 4, 5, 1)$	213 : $P_{8049} = (16, 26, 6, 1)$
160 : $P_{6349} = (12, 5, 5, 1)$	214 : $P_{8064} = (31, 26, 6, 1)$
161 : $P_{6376} = (7, 6, 5, 1)$	215 : $P_{8185} = (24, 30, 6, 1)$
162 : $P_{6493} = (28, 9, 5, 1)$	216 : $P_{8221} = (28, 31, 6, 1)$
163 : $P_{6519} = (22, 10, 5, 1)$	217 : $P_{8279} = (22, 1, 7, 1)$
164 : $P_{6574} = (13, 12, 5, 1)$	218 : $P_{8313} = (24, 2, 7, 1)$
165 : $P_{6579} = (18, 12, 5, 1)$	219 : $P_{8359} = (6, 4, 7, 1)$
166 : $P_{6591} = (30, 12, 5, 1)$	220 : $P_{8474} = (25, 7, 7, 1)$
167 : $P_{6599} = (6, 13, 5, 1)$	221 : $P_{8485} = (4, 8, 7, 1)$
168 : $P_{6646} = (21, 14, 5, 1)$	222 : $P_{8491} = (10, 8, 7, 1)$
169 : $P_{6671} = (14, 15, 5, 1)$	223 : $P_{8496} = (15, 8, 7, 1)$
170 : $P_{6673} = (16, 15, 5, 1)$	224 : $P_{8516} = (3, 9, 7, 1)$
171 : $P_{6688} = (31, 15, 5, 1)$	225 : $P_{8566} = (21, 10, 7, 1)$
172 : $P_{6692} = (3, 16, 5, 1)$	226 : $P_{8579} = (2, 11, 7, 1)$
173 : $P_{6810} = (25, 19, 5, 1)$	227 : $P_{8585} = (8, 11, 7, 1)$

228 :  $P_{8588} = (11, 11, 7, 1)$   
 229 :  $P_{8610} = (1, 12, 7, 1)$   
 230 :  $P_{8650} = (9, 13, 7, 1)$   
 231 :  $P_{8660} = (19, 13, 7, 1)$   
 232 :  $P_{8668} = (27, 13, 7, 1)$   
 233 :  $P_{8733} = (28, 15, 7, 1)$   
 234 :  $P_{8798} = (29, 17, 7, 1)$   
 235 :  $P_{8813} = (12, 18, 7, 1)$   
 236 :  $P_{8847} = (14, 19, 7, 1)$   
 237 :  $P_{8849} = (16, 19, 7, 1)$   
 238 :  $P_{8864} = (31, 19, 7, 1)$   
 239 :  $P_{8870} = (5, 20, 7, 1)$   
 240 :  $P_{8984} = (23, 23, 7, 1)$   
 241 :  $P_{9042} = (17, 25, 7, 1)$   
 242 :  $P_{9083} = (26, 26, 7, 1)$   
 243 :  $P_{9128} = (7, 28, 7, 1)$   
 244 :  $P_{9166} = (13, 29, 7, 1)$   
 245 :  $P_{9171} = (18, 29, 7, 1)$   
 246 :  $P_{9183} = (30, 29, 7, 1)$   
 247 :  $P_{9237} = (20, 31, 7, 1)$   
 248 :  $P_{9309} = (28, 1, 8, 1)$   
 249 :  $P_{9374} = (29, 3, 8, 1)$   
 250 :  $P_{9394} = (17, 4, 8, 1)$   
 251 :  $P_{9466} = (25, 6, 8, 1)$   
 252 :  $P_{9477} = (4, 7, 8, 1)$   
 253 :  $P_{9483} = (10, 7, 8, 1)$   
 254 :  $P_{9488} = (15, 7, 8, 1)$   
 255 :  $P_{9528} = (23, 8, 8, 1)$   
 256 :  $P_{9572} = (3, 10, 8, 1)$   
 257 :  $P_{9687} = (22, 13, 8, 1)$   
 258 :  $P_{9749} = (20, 15, 8, 1)$   
 259 :  $P_{9763} = (2, 16, 8, 1)$   
 260 :  $P_{9769} = (8, 16, 8, 1)$   
 261 :  $P_{9772} = (11, 16, 8, 1)$   
 262 :  $P_{9799} = (6, 17, 8, 1)$   
 263 :  $P_{9883} = (26, 19, 8, 1)$   
 264 :  $P_{9901} = (12, 20, 8, 1)$   
 265 :  $P_{9934} = (13, 21, 8, 1)$   
 266 :  $P_{9939} = (18, 21, 8, 1)$   
 267 :  $P_{9951} = (30, 21, 8, 1)$   
 268 :  $P_{9954} = (1, 22, 8, 1)$   
 269 :  $P_{10024} = (7, 24, 8, 1)$   
 270 :  $P_{10063} = (14, 25, 8, 1)$   
 271 :  $P_{10065} = (16, 25, 8, 1)$   
 272 :  $P_{10080} = (31, 25, 8, 1)$   
 273 :  $P_{10105} = (24, 26, 8, 1)$   
 274 :  $P_{10122} = (9, 27, 8, 1)$   
 275 :  $P_{10132} = (19, 27, 8, 1)$   
 276 :  $P_{10140} = (27, 27, 8, 1)$   
 277 :  $P_{10198} = (21, 29, 8, 1)$   
 278 :  $P_{10246} = (5, 31, 8, 1)$   
 279 :  $P_{10402} = (1, 4, 9, 1)$   
 280 :  $P_{10461} = (28, 5, 9, 1)$   
 281 :  $P_{10486} = (21, 6, 9, 1)$

282 :  $P_{10500} = (3, 7, 9, 1)$   
 283 :  $P_{10638} = (13, 11, 9, 1)$   
 284 :  $P_{10643} = (18, 11, 9, 1)$   
 285 :  $P_{10655} = (30, 11, 9, 1)$   
 286 :  $P_{10662} = (5, 12, 9, 1)$   
 287 :  $P_{10712} = (23, 13, 9, 1)$   
 288 :  $P_{10733} = (12, 14, 9, 1)$   
 289 :  $P_{10782} = (29, 15, 9, 1)$   
 290 :  $P_{10863} = (14, 18, 9, 1)$   
 291 :  $P_{10865} = (16, 18, 9, 1)$   
 292 :  $P_{10880} = (31, 18, 9, 1)$   
 293 :  $P_{10930} = (17, 20, 9, 1)$   
 294 :  $P_{10971} = (26, 21, 9, 1)$   
 295 :  $P_{10997} = (20, 22, 9, 1)$   
 296 :  $P_{11016} = (7, 23, 9, 1)$   
 297 :  $P_{11050} = (9, 24, 9, 1)$   
 298 :  $P_{11060} = (19, 24, 9, 1)$   
 299 :  $P_{11068} = (27, 24, 9, 1)$   
 300 :  $P_{11107} = (2, 26, 9, 1)$   
 301 :  $P_{11113} = (8, 26, 9, 1)$   
 302 :  $P_{11116} = (11, 26, 9, 1)$   
 303 :  $P_{11141} = (4, 27, 9, 1)$   
 304 :  $P_{11147} = (10, 27, 9, 1)$   
 305 :  $P_{11152} = (15, 27, 9, 1)$   
 306 :  $P_{11191} = (22, 28, 9, 1)$   
 307 :  $P_{11225} = (24, 29, 9, 1)$   
 308 :  $P_{11258} = (25, 30, 9, 1)$   
 309 :  $P_{11271} = (6, 31, 9, 1)$   
 310 :  $P_{11352} = (23, 1, 10, 1)$   
 311 :  $P_{11363} = (2, 2, 10, 1)$   
 312 :  $P_{11369} = (8, 2, 10, 1)$   
 313 :  $P_{11372} = (11, 2, 10, 1)$   
 314 :  $P_{11400} = (7, 3, 10, 1)$   
 315 :  $P_{11479} = (22, 5, 10, 1)$   
 316 :  $P_{11502} = (13, 6, 10, 1)$   
 317 :  $P_{11507} = (18, 6, 10, 1)$   
 318 :  $P_{11519} = (30, 6, 10, 1)$   
 319 :  $P_{11542} = (21, 7, 10, 1)$   
 320 :  $P_{11556} = (3, 8, 10, 1)$   
 321 :  $P_{11641} = (24, 10, 10, 1)$   
 322 :  $P_{11701} = (20, 12, 10, 1)$   
 323 :  $P_{11717} = (4, 13, 10, 1)$   
 324 :  $P_{11723} = (10, 13, 10, 1)$   
 325 :  $P_{11728} = (15, 13, 10, 1)$   
 326 :  $P_{11750} = (5, 14, 10, 1)$   
 327 :  $P_{11821} = (12, 16, 10, 1)$   
 328 :  $P_{11890} = (17, 18, 10, 1)$   
 329 :  $P_{11943} = (6, 20, 10, 1)$   
 330 :  $P_{11983} = (14, 21, 10, 1)$   
 331 :  $P_{11985} = (16, 21, 10, 1)$   
 332 :  $P_{12000} = (31, 21, 10, 1)$   
 333 :  $P_{12029} = (28, 22, 10, 1)$   
 334 :  $P_{12098} = (1, 25, 10, 1)$   
 335 :  $P_{12186} = (25, 27, 10, 1)$

336 :  $P_{12202} = (9, 28, 10, 1)$   
 337 :  $P_{12212} = (19, 28, 10, 1)$   
 338 :  $P_{12220} = (27, 28, 10, 1)$   
 339 :  $P_{12251} = (26, 29, 10, 1)$   
 340 :  $P_{12318} = (29, 31, 10, 1)$   
 341 :  $P_{12399} = (14, 2, 11, 1)$   
 342 :  $P_{12401} = (16, 2, 11, 1)$   
 343 :  $P_{12416} = (31, 2, 11, 1)$   
 344 :  $P_{12421} = (4, 3, 11, 1)$   
 345 :  $P_{12427} = (10, 3, 11, 1)$   
 346 :  $P_{12432} = (15, 3, 11, 1)$   
 347 :  $P_{12547} = (2, 7, 11, 1)$   
 348 :  $P_{12553} = (8, 7, 11, 1)$   
 349 :  $P_{12556} = (11, 7, 11, 1)$   
 350 :  $P_{12622} = (13, 9, 11, 1)$   
 351 :  $P_{12627} = (18, 9, 11, 1)$   
 352 :  $P_{12639} = (30, 9, 11, 1)$   
 353 :  $P_{12810} = (9, 15, 11, 1)$   
 354 :  $P_{12820} = (19, 15, 11, 1)$   
 355 :  $P_{12828} = (27, 15, 11, 1)$   
 356 :  $P_{12834} = (1, 16, 11, 1)$   
 357 :  $P_{12888} = (23, 17, 11, 1)$   
 358 :  $P_{12917} = (20, 18, 11, 1)$   
 359 :  $P_{12935} = (6, 19, 11, 1)$   
 360 :  $P_{12989} = (28, 20, 11, 1)$   
 361 :  $P_{12998} = (5, 21, 11, 1)$   
 362 :  $P_{13032} = (7, 22, 11, 1)$   
 363 :  $P_{13082} = (25, 23, 11, 1)$   
 364 :  $P_{13110} = (21, 24, 11, 1)$   
 365 :  $P_{13150} = (29, 25, 11, 1)$   
 366 :  $P_{13170} = (17, 26, 11, 1)$   
 367 :  $P_{13209} = (24, 27, 11, 1)$   
 368 :  $P_{13220} = (3, 28, 11, 1)$   
 369 :  $P_{13261} = (12, 29, 11, 1)$   
 370 :  $P_{13307} = (26, 30, 11, 1)$   
 371 :  $P_{13335} = (22, 31, 11, 1)$   
 372 :  $P_{13403} = (26, 1, 12, 1)$   
 373 :  $P_{13438} = (29, 2, 12, 1)$   
 374 :  $P_{13443} = (2, 3, 12, 1)$   
 375 :  $P_{13449} = (8, 3, 12, 1)$   
 376 :  $P_{13452} = (11, 3, 12, 1)$   
 377 :  $P_{13498} = (25, 4, 12, 1)$   
 378 :  $P_{13518} = (13, 5, 12, 1)$   
 379 :  $P_{13523} = (18, 5, 12, 1)$   
 380 :  $P_{13535} = (30, 5, 12, 1)$   
 381 :  $P_{13570} = (1, 7, 12, 1)$   
 382 :  $P_{13638} = (5, 9, 12, 1)$   
 383 :  $P_{13685} = (20, 10, 12, 1)$   
 384 :  $P_{13732} = (3, 12, 12, 1)$   
 385 :  $P_{13775} = (14, 13, 12, 1)$   
 386 :  $P_{13777} = (16, 13, 12, 1)$   
 387 :  $P_{13792} = (31, 13, 12, 1)$   
 388 :  $P_{13849} = (24, 15, 12, 1)$   
 389 :  $P_{13864} = (7, 16, 12, 1)$

390 :  $P_{13930} = (9, 18, 12, 1)$   
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 392 :  $P_{13948} = (27, 18, 12, 1)$   
 393 :  $P_{13976} = (23, 19, 12, 1)$   
 394 :  $P_{14039} = (22, 21, 12, 1)$   
 395 :  $P_{14070} = (21, 22, 12, 1)$   
 396 :  $P_{14125} = (12, 24, 12, 1)$   
 397 :  $P_{14149} = (4, 25, 12, 1)$   
 398 :  $P_{14155} = (10, 25, 12, 1)$   
 399 :  $P_{14160} = (15, 25, 12, 1)$   
 400 :  $P_{14226} = (17, 27, 12, 1)$   
 401 :  $P_{14301} = (28, 29, 12, 1)$   
 402 :  $P_{14311} = (6, 30, 12, 1)$   
 403 :  $P_{14436} = (3, 2, 13, 1)$   
 404 :  $P_{14485} = (20, 3, 13, 1)$   
 405 :  $P_{14509} = (12, 4, 13, 1)$   
 406 :  $P_{14535} = (6, 5, 13, 1)$   
 407 :  $P_{14602} = (9, 7, 13, 1)$   
 408 :  $P_{14612} = (19, 7, 13, 1)$   
 409 :  $P_{14620} = (27, 7, 13, 1)$   
 410 :  $P_{14647} = (22, 8, 13, 1)$   
 411 :  $P_{14680} = (23, 9, 13, 1)$   
 412 :  $P_{14693} = (4, 10, 13, 1)$   
 413 :  $P_{14699} = (10, 10, 13, 1)$   
 414 :  $P_{14704} = (15, 10, 13, 1)$   
 415 :  $P_{14767} = (14, 12, 13, 1)$   
 416 :  $P_{14769} = (16, 12, 13, 1)$   
 417 :  $P_{14784} = (31, 12, 13, 1)$   
 418 :  $P_{14843} = (26, 14, 13, 1)$   
 419 :  $P_{14850} = (1, 15, 13, 1)$   
 420 :  $P_{14905} = (24, 16, 13, 1)$   
 421 :  $P_{14918} = (5, 17, 13, 1)$   
 422 :  $P_{14947} = (2, 18, 13, 1)$   
 423 :  $P_{14953} = (8, 18, 13, 1)$   
 424 :  $P_{14956} = (11, 18, 13, 1)$   
 425 :  $P_{14990} = (13, 19, 13, 1)$   
 426 :  $P_{14995} = (18, 19, 13, 1)$   
 427 :  $P_{15007} = (30, 19, 13, 1)$   
 428 :  $P_{15090} = (17, 22, 13, 1)$   
 429 :  $P_{15133} = (28, 23, 13, 1)$   
 430 :  $P_{15222} = (21, 26, 13, 1)$   
 431 :  $P_{15240} = (7, 27, 13, 1)$   
 432 :  $P_{15294} = (29, 28, 13, 1)$   
 433 :  $P_{15322} = (25, 29, 13, 1)$   
 434 :  $P_{15449} = (24, 1, 14, 1)$   
 435 :  $P_{15463} = (6, 2, 14, 1)$   
 436 :  $P_{15525} = (4, 4, 14, 1)$   
 437 :  $P_{15531} = (10, 4, 14, 1)$   
 438 :  $P_{15536} = (15, 4, 14, 1)$   
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 440 :  $P_{15586} = (1, 6, 14, 1)$   
 441 :  $P_{15693} = (12, 9, 14, 1)$   
 442 :  $P_{15718} = (5, 10, 14, 1)$   
 443 :  $P_{15835} = (26, 13, 14, 1)$

444 :  $P_{15848} = (7, 14, 14, 1)$   
 445 :  $P_{15962} = (25, 17, 14, 1)$   
 446 :  $P_{15991} = (22, 18, 14, 1)$   
 447 :  $P_{16042} = (9, 20, 14, 1)$   
 448 :  $P_{16052} = (19, 20, 14, 1)$   
 449 :  $P_{16060} = (27, 20, 14, 1)$   
 450 :  $P_{16093} = (28, 21, 14, 1)$   
 451 :  $P_{16100} = (3, 22, 14, 1)$   
 452 :  $P_{16131} = (2, 23, 14, 1)$   
 453 :  $P_{16137} = (8, 23, 14, 1)$   
 454 :  $P_{16140} = (11, 23, 14, 1)$   
 455 :  $P_{16216} = (23, 25, 14, 1)$   
 456 :  $P_{16254} = (29, 26, 14, 1)$   
 457 :  $P_{16271} = (14, 27, 14, 1)$   
 458 :  $P_{16273} = (16, 27, 14, 1)$   
 459 :  $P_{16288} = (31, 27, 14, 1)$   
 460 :  $P_{16302} = (13, 28, 14, 1)$   
 461 :  $P_{16307} = (18, 28, 14, 1)$   
 462 :  $P_{16319} = (30, 28, 14, 1)$   
 463 :  $P_{16341} = (20, 29, 14, 1)$   
 464 :  $P_{16370} = (17, 30, 14, 1)$   
 465 :  $P_{16488} = (7, 2, 15, 1)$   
 466 :  $P_{16525} = (12, 3, 15, 1)$   
 467 :  $P_{16558} = (13, 4, 15, 1)$   
 468 :  $P_{16563} = (18, 4, 15, 1)$   
 469 :  $P_{16575} = (30, 4, 15, 1)$   
 470 :  $P_{16591} = (14, 5, 15, 1)$   
 471 :  $P_{16593} = (16, 5, 15, 1)$   
 472 :  $P_{16608} = (31, 5, 15, 1)$   
 473 :  $P_{16631} = (22, 6, 15, 1)$   
 474 :  $P_{16669} = (28, 7, 15, 1)$   
 475 :  $P_{16693} = (20, 8, 15, 1)$   
 476 :  $P_{16734} = (29, 9, 15, 1)$   
 477 :  $P_{16778} = (9, 11, 15, 1)$   
 478 :  $P_{16788} = (19, 11, 15, 1)$   
 479 :  $P_{16796} = (27, 11, 15, 1)$   
 480 :  $P_{16825} = (24, 12, 15, 1)$   
 481 :  $P_{16834} = (1, 13, 15, 1)$   
 482 :  $P_{17018} = (25, 18, 15, 1)$   
 483 :  $P_{17028} = (3, 19, 15, 1)$   
 484 :  $P_{17093} = (4, 21, 15, 1)$   
 485 :  $P_{17099} = (10, 21, 15, 1)$   
 486 :  $P_{17104} = (15, 21, 15, 1)$   
 487 :  $P_{17147} = (26, 22, 15, 1)$   
 488 :  $P_{17158} = (5, 23, 15, 1)$   
 489 :  $P_{17191} = (6, 24, 15, 1)$   
 490 :  $P_{17238} = (21, 25, 15, 1)$   
 491 :  $P_{17330} = (17, 28, 15, 1)$   
 492 :  $P_{17368} = (23, 29, 15, 1)$   
 493 :  $P_{17411} = (2, 31, 15, 1)$   
 494 :  $P_{17417} = (8, 31, 15, 1)$   
 495 :  $P_{17420} = (11, 31, 15, 1)$   
 496 :  $P_{17522} = (17, 2, 16, 1)$   
 497 :  $P_{17562} = (25, 3, 16, 1)$

498 :  $P_{17592} = (23, 4, 16, 1)$   
 499 :  $P_{17604} = (3, 5, 16, 1)$   
 500 :  $P_{17699} = (2, 8, 16, 1)$   
 501 :  $P_{17705} = (8, 8, 16, 1)$   
 502 :  $P_{17708} = (11, 8, 16, 1)$   
 503 :  $P_{17773} = (12, 10, 16, 1)$   
 504 :  $P_{17794} = (1, 11, 16, 1)$   
 505 :  $P_{17832} = (7, 12, 16, 1)$   
 506 :  $P_{17881} = (24, 13, 16, 1)$   
 507 :  $P_{17989} = (4, 17, 16, 1)$   
 508 :  $P_{17995} = (10, 17, 16, 1)$   
 509 :  $P_{18000} = (15, 17, 16, 1)$   
 510 :  $P_{18045} = (28, 18, 16, 1)$   
 511 :  $P_{18078} = (29, 19, 16, 1)$   
 512 :  $P_{18103} = (22, 20, 16, 1)$   
 513 :  $P_{18133} = (20, 21, 16, 1)$   
 514 :  $P_{18222} = (13, 24, 16, 1)$   
 515 :  $P_{18227} = (18, 24, 16, 1)$   
 516 :  $P_{18239} = (30, 24, 16, 1)$   
 517 :  $P_{18279} = (6, 26, 16, 1)$   
 518 :  $P_{18331} = (26, 27, 16, 1)$   
 519 :  $P_{18358} = (21, 28, 16, 1)$   
 520 :  $P_{18374} = (5, 29, 16, 1)$   
 521 :  $P_{18415} = (14, 30, 16, 1)$   
 522 :  $P_{18417} = (16, 30, 16, 1)$   
 523 :  $P_{18432} = (31, 30, 16, 1)$   
 524 :  $P_{18442} = (9, 31, 16, 1)$   
 525 :  $P_{18452} = (19, 31, 16, 1)$   
 526 :  $P_{18460} = (27, 31, 16, 1)$   
 527 :  $P_{18509} = (12, 1, 17, 1)$   
 528 :  $P_{18551} = (22, 2, 17, 1)$   
 529 :  $P_{18575} = (14, 3, 17, 1)$   
 530 :  $P_{18577} = (16, 3, 17, 1)$   
 531 :  $P_{18592} = (31, 3, 17, 1)$   
 532 :  $P_{18617} = (24, 4, 17, 1)$   
 533 :  $P_{18718} = (29, 7, 17, 1)$   
 534 :  $P_{18727} = (6, 8, 17, 1)$   
 535 :  $P_{18840} = (23, 11, 17, 1)$   
 536 :  $P_{18886} = (5, 13, 17, 1)$   
 537 :  $P_{18938} = (25, 14, 17, 1)$   
 538 :  $P_{18981} = (4, 16, 17, 1)$   
 539 :  $P_{18987} = (10, 16, 17, 1)$   
 540 :  $P_{18992} = (15, 16, 17, 1)$   
 541 :  $P_{19035} = (26, 17, 17, 1)$   
 542 :  $P_{19044} = (3, 18, 17, 1)$   
 543 :  $P_{19126} = (21, 20, 17, 1)$   
 544 :  $P_{19171} = (2, 22, 17, 1)$   
 545 :  $P_{19177} = (8, 22, 17, 1)$   
 546 :  $P_{19180} = (11, 22, 17, 1)$   
 547 :  $P_{19218} = (17, 23, 17, 1)$   
 548 :  $P_{19234} = (1, 24, 17, 1)$   
 549 :  $P_{19306} = (9, 26, 17, 1)$   
 550 :  $P_{19316} = (19, 26, 17, 1)$   
 551 :  $P_{19324} = (27, 26, 17, 1)$

552 :  $P_{19349} = (20, 27, 17, 1)$   
 553 :  $P_{19400} = (7, 29, 17, 1)$   
 554 :  $P_{19453} = (28, 30, 17, 1)$   
 555 :  $P_{19470} = (13, 31, 17, 1)$   
 556 :  $P_{19475} = (18, 31, 17, 1)$   
 557 :  $P_{19487} = (30, 31, 17, 1)$   
 558 :  $P_{19554} = (1, 2, 18, 1)$   
 559 :  $P_{19606} = (21, 3, 18, 1)$   
 560 :  $P_{19686} = (5, 6, 18, 1)$   
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 562 :  $P_{19791} = (14, 9, 18, 1)$   
 563 :  $P_{19793} = (16, 9, 18, 1)$   
 564 :  $P_{19808} = (31, 9, 18, 1)$   
 565 :  $P_{19826} = (17, 10, 18, 1)$   
 566 :  $P_{19861} = (20, 11, 18, 1)$   
 567 :  $P_{19882} = (9, 12, 18, 1)$   
 568 :  $P_{19892} = (19, 12, 18, 1)$   
 569 :  $P_{19900} = (27, 12, 18, 1)$   
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 571 :  $P_{19913} = (8, 13, 18, 1)$   
 572 :  $P_{19916} = (11, 13, 18, 1)$   
 573 :  $P_{19959} = (22, 14, 18, 1)$   
 574 :  $P_{19994} = (25, 15, 18, 1)$   
 575 :  $P_{20029} = (28, 16, 18, 1)$   
 576 :  $P_{20036} = (3, 17, 18, 1)$   
 577 :  $P_{20152} = (23, 20, 18, 1)$   
 578 :  $P_{20190} = (29, 21, 18, 1)$   
 579 :  $P_{20238} = (13, 23, 18, 1)$   
 580 :  $P_{20243} = (18, 23, 18, 1)$   
 581 :  $P_{20255} = (30, 23, 18, 1)$   
 582 :  $P_{20283} = (26, 24, 18, 1)$   
 583 :  $P_{20296} = (7, 25, 18, 1)$   
 584 :  $P_{20409} = (24, 28, 18, 1)$   
 585 :  $P_{20423} = (6, 29, 18, 1)$   
 586 :  $P_{20485} = (4, 31, 18, 1)$   
 587 :  $P_{20491} = (10, 31, 18, 1)$   
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 589 :  $P_{20566} = (21, 1, 19, 1)$   
 590 :  $P_{20582} = (5, 2, 19, 1)$   
 591 :  $P_{20650} = (9, 4, 19, 1)$   
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 593 :  $P_{20668} = (27, 4, 19, 1)$   
 594 :  $P_{20698} = (25, 5, 19, 1)$   
 595 :  $P_{20722} = (17, 6, 19, 1)$   
 596 :  $P_{20751} = (14, 7, 19, 1)$   
 597 :  $P_{20753} = (16, 7, 19, 1)$   
 598 :  $P_{20768} = (31, 7, 19, 1)$   
 599 :  $P_{20795} = (26, 8, 19, 1)$   
 600 :  $P_{20871} = (6, 11, 19, 1)$   
 601 :  $P_{20920} = (23, 12, 19, 1)$   
 602 :  $P_{20942} = (13, 13, 19, 1)$   
 603 :  $P_{20947} = (18, 13, 19, 1)$   
 604 :  $P_{20959} = (30, 13, 19, 1)$   
 605 :  $P_{20996} = (3, 15, 19, 1)$

606 :  $P_{21054} = (29, 16, 19, 1)$   
 607 :  $P_{21149} = (28, 19, 19, 1)$   
 608 :  $P_{21160} = (7, 20, 19, 1)$   
 609 :  $P_{21221} = (4, 22, 19, 1)$   
 610 :  $P_{21227} = (10, 22, 19, 1)$   
 611 :  $P_{21232} = (15, 22, 19, 1)$   
 612 :  $P_{21273} = (24, 23, 19, 1)$   
 613 :  $P_{21283} = (2, 24, 19, 1)$   
 614 :  $P_{21289} = (8, 24, 19, 1)$   
 615 :  $P_{21292} = (11, 24, 19, 1)$   
 616 :  $P_{21335} = (22, 25, 19, 1)$   
 617 :  $P_{21365} = (20, 26, 19, 1)$   
 618 :  $P_{21442} = (1, 29, 19, 1)$   
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 620 :  $P_{21571} = (2, 1, 20, 1)$   
 621 :  $P_{21577} = (8, 1, 20, 1)$   
 622 :  $P_{21580} = (11, 1, 20, 1)$   
 623 :  $P_{21646} = (13, 3, 20, 1)$   
 624 :  $P_{21651} = (18, 3, 20, 1)$   
 625 :  $P_{21663} = (30, 3, 20, 1)$   
 626 :  $P_{21668} = (3, 4, 20, 1)$   
 627 :  $P_{21721} = (24, 5, 20, 1)$   
 628 :  $P_{21749} = (20, 6, 20, 1)$   
 629 :  $P_{21766} = (5, 7, 20, 1)$   
 630 :  $P_{21805} = (12, 8, 20, 1)$   
 631 :  $P_{21842} = (17, 9, 20, 1)$   
 632 :  $P_{21863} = (6, 10, 20, 1)$   
 633 :  $P_{21917} = (28, 11, 20, 1)$   
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 635 :  $P_{22004} = (19, 14, 20, 1)$   
 636 :  $P_{22012} = (27, 14, 20, 1)$   
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 639 :  $P_{22136} = (23, 18, 20, 1)$   
 640 :  $P_{22152} = (7, 19, 20, 1)$   
 641 :  $P_{22181} = (4, 20, 20, 1)$   
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 645 :  $P_{22321} = (16, 24, 20, 1)$   
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 647 :  $P_{22459} = (26, 28, 20, 1)$   
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 649 :  $P_{22498} = (1, 30, 20, 1)$   
 650 :  $P_{22554} = (25, 31, 20, 1)$   
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 652 :  $P_{22660} = (3, 3, 21, 1)$   
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 657 :  $P_{22847} = (30, 8, 21, 1)$   
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 659 :  $P_{22895} = (14, 10, 21, 1)$



660 :  $P_{22897} = (16, 10, 21, 1)$   
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 663 :  $P_{22967} = (22, 12, 21, 1)$   
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 679 :  $P_{23436} = (11, 27, 21, 1)$   
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 684 :  $P_{23648} = (31, 1, 22, 1)$   
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 688 :  $P_{23944} = (7, 11, 22, 1)$   
 689 :  $P_{23990} = (21, 12, 22, 1)$   
 690 :  $P_{24018} = (17, 13, 22, 1)$   
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 692 :  $P_{24091} = (26, 15, 22, 1)$   
 693 :  $P_{24131} = (2, 17, 22, 1)$   
 694 :  $P_{24137} = (8, 17, 22, 1)$   
 695 :  $P_{24140} = (11, 17, 22, 1)$   
 696 :  $P_{24197} = (4, 19, 22, 1)$   
 697 :  $P_{24203} = (10, 19, 22, 1)$   
 698 :  $P_{24208} = (15, 19, 22, 1)$   
 699 :  $P_{24266} = (9, 21, 22, 1)$   
 700 :  $P_{24276} = (19, 21, 22, 1)$   
 701 :  $P_{24284} = (27, 21, 22, 1)$   
 702 :  $P_{24302} = (13, 22, 22, 1)$   
 703 :  $P_{24307} = (18, 22, 22, 1)$   
 704 :  $P_{24319} = (30, 22, 22, 1)$   
 705 :  $P_{24358} = (5, 24, 22, 1)$   
 706 :  $P_{24410} = (25, 25, 22, 1)$   
 707 :  $P_{24440} = (23, 26, 22, 1)$   
 708 :  $P_{24455} = (6, 27, 22, 1)$   
 709 :  $P_{24493} = (12, 28, 22, 1)$   
 710 :  $P_{24535} = (22, 29, 22, 1)$   
 711 :  $P_{24574} = (29, 30, 22, 1)$   
 712 :  $P_{24601} = (24, 31, 22, 1)$   
 713 :  $P_{24661} = (20, 1, 23, 1)$

714 :  $P_{24711} = (6, 3, 23, 1)$   
 715 :  $P_{24751} = (14, 4, 23, 1)$   
 716 :  $P_{24753} = (16, 4, 23, 1)$   
 717 :  $P_{24768} = (31, 4, 23, 1)$   
 718 :  $P_{24770} = (1, 5, 23, 1)$   
 719 :  $P_{24805} = (4, 6, 23, 1)$   
 720 :  $P_{24811} = (10, 6, 23, 1)$   
 721 :  $P_{24816} = (15, 6, 23, 1)$   
 722 :  $P_{24856} = (23, 7, 23, 1)$   
 723 :  $P_{24904} = (7, 9, 23, 1)$   
 724 :  $P_{24986} = (25, 11, 23, 1)$   
 725 :  $P_{25053} = (28, 13, 23, 1)$   
 726 :  $P_{25059} = (2, 14, 23, 1)$   
 727 :  $P_{25065} = (8, 14, 23, 1)$   
 728 :  $P_{25068} = (11, 14, 23, 1)$   
 729 :  $P_{25094} = (5, 15, 23, 1)$   
 730 :  $P_{25170} = (17, 17, 23, 1)$   
 731 :  $P_{25198} = (13, 18, 23, 1)$   
 732 :  $P_{25203} = (18, 18, 23, 1)$   
 733 :  $P_{25215} = (30, 18, 23, 1)$   
 734 :  $P_{25241} = (24, 19, 23, 1)$   
 735 :  $P_{25302} = (21, 21, 23, 1)$   
 736 :  $P_{25374} = (29, 23, 23, 1)$   
 737 :  $P_{25435} = (26, 25, 23, 1)$   
 738 :  $P_{25495} = (22, 27, 23, 1)$   
 739 :  $P_{25540} = (3, 29, 23, 1)$   
 740 :  $P_{25578} = (9, 30, 23, 1)$   
 741 :  $P_{25588} = (19, 30, 23, 1)$   
 742 :  $P_{25596} = (27, 30, 23, 1)$   
 743 :  $P_{25613} = (12, 31, 23, 1)$   
 744 :  $P_{25694} = (29, 1, 24, 1)$   
 745 :  $P_{25722} = (25, 2, 24, 1)$   
 746 :  $P_{25813} = (20, 5, 24, 1)$   
 747 :  $P_{25828} = (3, 6, 24, 1)$   
 748 :  $P_{25896} = (7, 8, 24, 1)$   
 749 :  $P_{25930} = (9, 9, 24, 1)$   
 750 :  $P_{25940} = (19, 9, 24, 1)$   
 751 :  $P_{25948} = (27, 9, 24, 1)$   
 752 :  $P_{26006} = (21, 11, 24, 1)$   
 753 :  $P_{26029} = (12, 12, 24, 1)$   
 754 :  $P_{26119} = (6, 15, 24, 1)$   
 755 :  $P_{26158} = (13, 16, 24, 1)$   
 756 :  $P_{26163} = (18, 16, 24, 1)$   
 757 :  $P_{26175} = (30, 16, 24, 1)$   
 758 :  $P_{26178} = (1, 17, 24, 1)$   
 759 :  $P_{26235} = (26, 18, 24, 1)$   
 760 :  $P_{26243} = (2, 19, 24, 1)$   
 761 :  $P_{26249} = (8, 19, 24, 1)$   
 762 :  $P_{26252} = (11, 19, 24, 1)$   
 763 :  $P_{26287} = (14, 20, 24, 1)$   
 764 :  $P_{26289} = (16, 20, 24, 1)$   
 765 :  $P_{26304} = (31, 20, 24, 1)$   
 766 :  $P_{26329} = (24, 21, 24, 1)$   
 767 :  $P_{26342} = (5, 22, 24, 1)$

768 :  $P_{26423} = (22, 24, 24, 1)$   
 769 :  $P_{26520} = (23, 27, 24, 1)$   
 770 :  $P_{26557} = (28, 28, 24, 1)$   
 771 :  $P_{26597} = (4, 30, 24, 1)$   
 772 :  $P_{26603} = (10, 30, 24, 1)$   
 773 :  $P_{26608} = (15, 30, 24, 1)$   
 774 :  $P_{26642} = (17, 31, 24, 1)$   
 775 :  $P_{26702} = (13, 1, 25, 1)$   
 776 :  $P_{26707} = (18, 1, 25, 1)$   
 777 :  $P_{26719} = (30, 1, 25, 1)$   
 778 :  $P_{26741} = (20, 2, 25, 1)$   
 779 :  $P_{26777} = (24, 3, 25, 1)$   
 780 :  $P_{26855} = (6, 6, 25, 1)$   
 781 :  $P_{26898} = (17, 7, 25, 1)$   
 782 :  $P_{26927} = (14, 8, 25, 1)$   
 783 :  $P_{26929} = (16, 8, 25, 1)$   
 784 :  $P_{26944} = (31, 8, 25, 1)$   
 785 :  $P_{26978} = (1, 10, 25, 1)$   
 786 :  $P_{27038} = (29, 11, 25, 1)$   
 787 :  $P_{27045} = (4, 12, 25, 1)$   
 788 :  $P_{27051} = (10, 12, 25, 1)$   
 789 :  $P_{27056} = (15, 12, 25, 1)$   
 790 :  $P_{27128} = (23, 14, 25, 1)$   
 791 :  $P_{27158} = (21, 15, 25, 1)$   
 792 :  $P_{27240} = (7, 18, 25, 1)$   
 793 :  $P_{27287} = (22, 19, 25, 1)$   
 794 :  $P_{27386} = (25, 22, 25, 1)$   
 795 :  $P_{27419} = (26, 23, 25, 1)$   
 796 :  $P_{27466} = (9, 25, 25, 1)$   
 797 :  $P_{27476} = (19, 25, 25, 1)$   
 798 :  $P_{27484} = (27, 25, 25, 1)$   
 799 :  $P_{27517} = (28, 26, 25, 1)$   
 800 :  $P_{27533} = (12, 27, 25, 1)$   
 801 :  $P_{27555} = (2, 28, 25, 1)$   
 802 :  $P_{27561} = (8, 28, 25, 1)$   
 803 :  $P_{27564} = (11, 28, 25, 1)$   
 804 :  $P_{27622} = (5, 30, 25, 1)$   
 805 :  $P_{27652} = (3, 31, 25, 1)$   
 806 :  $P_{27716} = (3, 1, 26, 1)$   
 807 :  $P_{27757} = (12, 2, 26, 1)$   
 808 :  $P_{27831} = (22, 4, 26, 1)$   
 809 :  $P_{27845} = (4, 5, 26, 1)$   
 810 :  $P_{27851} = (10, 5, 26, 1)$   
 811 :  $P_{27856} = (15, 5, 26, 1)$   
 812 :  $P_{27887} = (14, 6, 26, 1)$   
 813 :  $P_{27889} = (16, 6, 26, 1)$   
 814 :  $P_{27904} = (31, 6, 26, 1)$   
 815 :  $P_{27931} = (26, 7, 26, 1)$   
 816 :  $P_{27961} = (24, 8, 26, 1)$   
 817 :  $P_{27971} = (2, 9, 26, 1)$   
 818 :  $P_{27977} = (8, 9, 26, 1)$   
 819 :  $P_{27980} = (11, 9, 26, 1)$   
 820 :  $P_{28050} = (17, 11, 26, 1)$   
 821 :  $P_{28118} = (21, 13, 26, 1)$

822 :  $P_{28158} = (29, 14, 26, 1)$   
 823 :  $P_{28199} = (6, 16, 26, 1)$   
 824 :  $P_{28234} = (9, 17, 26, 1)$   
 825 :  $P_{28244} = (19, 17, 26, 1)$   
 826 :  $P_{28252} = (27, 17, 26, 1)$   
 827 :  $P_{28309} = (20, 19, 26, 1)$   
 828 :  $P_{28354} = (1, 21, 26, 1)$   
 829 :  $P_{28408} = (23, 22, 26, 1)$   
 830 :  $P_{28509} = (28, 25, 26, 1)$   
 831 :  $P_{28518} = (5, 26, 26, 1)$   
 832 :  $P_{28558} = (13, 27, 26, 1)$   
 833 :  $P_{28563} = (18, 27, 26, 1)$   
 834 :  $P_{28575} = (30, 27, 26, 1)$   
 835 :  $P_{28602} = (25, 28, 26, 1)$   
 836 :  $P_{28680} = (7, 31, 26, 1)$   
 837 :  $P_{28790} = (21, 2, 27, 1)$   
 838 :  $P_{28829} = (28, 3, 27, 1)$   
 839 :  $P_{28838} = (5, 4, 27, 1)$   
 840 :  $P_{28894} = (29, 5, 27, 1)$   
 841 :  $P_{28970} = (9, 8, 27, 1)$   
 842 :  $P_{28980} = (19, 8, 27, 1)$   
 843 :  $P_{28988} = (27, 8, 27, 1)$   
 844 :  $P_{28997} = (4, 9, 27, 1)$   
 845 :  $P_{29003} = (10, 9, 27, 1)$   
 846 :  $P_{29008} = (15, 9, 27, 1)$   
 847 :  $P_{29050} = (25, 10, 27, 1)$   
 848 :  $P_{29081} = (24, 11, 27, 1)$   
 849 :  $P_{29106} = (17, 12, 27, 1)$   
 850 :  $P_{29128} = (7, 13, 27, 1)$   
 851 :  $P_{29167} = (14, 14, 27, 1)$   
 852 :  $P_{29169} = (16, 14, 27, 1)$   
 853 :  $P_{29184} = (31, 14, 27, 1)$   
 854 :  $P_{29243} = (26, 16, 27, 1)$   
 855 :  $P_{29269} = (20, 17, 27, 1)$   
 856 :  $P_{29379} = (2, 21, 27, 1)$   
 857 :  $P_{29385} = (8, 21, 27, 1)$   
 858 :  $P_{29388} = (11, 21, 27, 1)$   
 859 :  $P_{29415} = (6, 22, 27, 1)$   
 860 :  $P_{29463} = (22, 23, 27, 1)$   
 861 :  $P_{29496} = (23, 24, 27, 1)$   
 862 :  $P_{29517} = (12, 25, 27, 1)$   
 863 :  $P_{29550} = (13, 26, 27, 1)$   
 864 :  $P_{29555} = (18, 26, 27, 1)$   
 865 :  $P_{29567} = (30, 26, 27, 1)$   
 866 :  $P_{29668} = (3, 30, 27, 1)$   
 867 :  $P_{29698} = (1, 31, 27, 1)$   
 868 :  $P_{29767} = (6, 1, 28, 1)$   
 869 :  $P_{29797} = (4, 2, 28, 1)$   
 870 :  $P_{29803} = (10, 2, 28, 1)$   
 871 :  $P_{29808} = (15, 2, 28, 1)$   
 872 :  $P_{29826} = (1, 3, 28, 1)$   
 873 :  $P_{29894} = (5, 5, 28, 1)$   
 874 :  $P_{29960} = (7, 7, 28, 1)$   
 875 :  $P_{30039} = (22, 9, 28, 1)$

876 :  $P_{30058} = (9, 10, 28, 1)$   
 877 :  $P_{30068} = (19, 10, 28, 1)$   
 878 :  $P_{30076} = (27, 10, 28, 1)$   
 879 :  $P_{30084} = (3, 11, 28, 1)$   
 880 :  $P_{30174} = (29, 13, 28, 1)$   
 881 :  $P_{30190} = (13, 14, 28, 1)$   
 882 :  $P_{30195} = (18, 14, 28, 1)$   
 883 :  $P_{30207} = (30, 14, 28, 1)$   
 884 :  $P_{30226} = (17, 15, 28, 1)$   
 885 :  $P_{30262} = (21, 16, 28, 1)$   
 886 :  $P_{30329} = (24, 18, 28, 1)$   
 887 :  $P_{30395} = (26, 20, 28, 1)$   
 888 :  $P_{30445} = (12, 22, 28, 1)$   
 889 :  $P_{30525} = (28, 24, 28, 1)$   
 890 :  $P_{30531} = (2, 25, 28, 1)$   
 891 :  $P_{30537} = (8, 25, 28, 1)$   
 892 :  $P_{30540} = (11, 25, 28, 1)$   
 893 :  $P_{30586} = (25, 26, 28, 1)$   
 894 :  $P_{30645} = (20, 28, 28, 1)$   
 895 :  $P_{30712} = (23, 30, 28, 1)$   
 896 :  $P_{30735} = (14, 31, 28, 1)$   
 897 :  $P_{30737} = (16, 31, 28, 1)$   
 898 :  $P_{30752} = (31, 31, 28, 1)$   
 899 :  $P_{30789} = (4, 1, 29, 1)$   
 900 :  $P_{30795} = (10, 1, 29, 1)$   
 901 :  $P_{30800} = (15, 1, 29, 1)$   
 902 :  $P_{30922} = (9, 5, 29, 1)$   
 903 :  $P_{30932} = (19, 5, 29, 1)$   
 904 :  $P_{30940} = (27, 5, 29, 1)$   
 905 :  $P_{30990} = (13, 7, 29, 1)$   
 906 :  $P_{30995} = (18, 7, 29, 1)$   
 907 :  $P_{31007} = (30, 7, 29, 1)$   
 908 :  $P_{31030} = (21, 8, 29, 1)$   
 909 :  $P_{31065} = (24, 9, 29, 1)$   
 910 :  $P_{31099} = (26, 10, 29, 1)$   
 911 :  $P_{31117} = (12, 11, 29, 1)$   
 912 :  $P_{31165} = (28, 12, 29, 1)$   
 913 :  $P_{31194} = (25, 13, 29, 1)$   
 914 :  $P_{31221} = (20, 14, 29, 1)$   
 915 :  $P_{31256} = (23, 15, 29, 1)$   
 916 :  $P_{31270} = (5, 16, 29, 1)$   
 917 :  $P_{31304} = (7, 17, 29, 1)$   
 918 :  $P_{31335} = (6, 18, 29, 1)$   
 919 :  $P_{31362} = (1, 19, 29, 1)$   
 920 :  $P_{31422} = (29, 20, 29, 1)$   
 921 :  $P_{31442} = (17, 21, 29, 1)$   
 922 :  $P_{31479} = (22, 22, 29, 1)$   
 923 :  $P_{31492} = (3, 23, 29, 1)$   
 924 :  $P_{31695} = (14, 29, 29, 1)$   
 925 :  $P_{31697} = (16, 29, 29, 1)$   
 926 :  $P_{31712} = (31, 29, 29, 1)$   
 927 :  $P_{31715} = (2, 30, 29, 1)$   
 928 :  $P_{31721} = (8, 30, 29, 1)$   
 929 :  $P_{31724} = (11, 30, 29, 1)$

930 :  $P_{31816} = (7, 1, 30, 1)$   
 931 :  $P_{31854} = (13, 2, 30, 1)$   
 932 :  $P_{31859} = (18, 2, 30, 1)$   
 933 :  $P_{31871} = (30, 2, 30, 1)$   
 934 :  $P_{31895} = (22, 3, 30, 1)$   
 935 :  $P_{31925} = (20, 4, 30, 1)$   
 936 :  $P_{31993} = (24, 6, 30, 1)$   
 937 :  $P_{32090} = (25, 9, 30, 1)$   
 938 :  $P_{32155} = (26, 11, 30, 1)$   
 939 :  $P_{32167} = (6, 12, 30, 1)$   
 940 :  $P_{32242} = (17, 14, 30, 1)$   
 941 :  $P_{32303} = (14, 16, 30, 1)$   
 942 :  $P_{32305} = (16, 16, 30, 1)$   
 943 :  $P_{32320} = (31, 16, 30, 1)$   
 944 :  $P_{32349} = (28, 17, 30, 1)$   
 945 :  $P_{32397} = (12, 19, 30, 1)$   
 946 :  $P_{32418} = (1, 20, 30, 1)$   
 947 :  $P_{32510} = (29, 22, 30, 1)$   
 948 :  $P_{32522} = (9, 23, 30, 1)$   
 949 :  $P_{32532} = (19, 23, 30, 1)$   
 950 :  $P_{32540} = (27, 23, 30, 1)$   
 951 :  $P_{32549} = (4, 24, 30, 1)$   
 952 :  $P_{32555} = (10, 24, 30, 1)$   
 953 :  $P_{32560} = (15, 24, 30, 1)$   
 954 :  $P_{32582} = (5, 25, 30, 1)$   
 955 :  $P_{32644} = (3, 27, 30, 1)$   
 956 :  $P_{32696} = (23, 28, 30, 1)$   
 957 :  $P_{32707} = (2, 29, 30, 1)$   
 958 :  $P_{32713} = (8, 29, 30, 1)$   
 959 :  $P_{32716} = (11, 29, 30, 1)$   
 960 :  $P_{32758} = (21, 30, 30, 1)$   
 961 :  $P_{32950} = (21, 4, 31, 1)$   
 962 :  $P_{32987} = (26, 5, 31, 1)$   
 963 :  $P_{33021} = (28, 6, 31, 1)$   
 964 :  $P_{33045} = (20, 7, 31, 1)$   
 965 :  $P_{33062} = (5, 8, 31, 1)$   
 966 :  $P_{33095} = (6, 9, 31, 1)$   
 967 :  $P_{33150} = (29, 10, 31, 1)$   
 968 :  $P_{33175} = (22, 11, 31, 1)$   
 969 :  $P_{33283} = (2, 15, 31, 1)$   
 970 :  $P_{33289} = (8, 15, 31, 1)$   
 971 :  $P_{33292} = (11, 15, 31, 1)$   
 972 :  $P_{33322} = (9, 16, 31, 1)$   
 973 :  $P_{33332} = (19, 16, 31, 1)$   
 974 :  $P_{33340} = (27, 16, 31, 1)$   
 975 :  $P_{33358} = (13, 17, 31, 1)$   
 976 :  $P_{33363} = (18, 17, 31, 1)$   
 977 :  $P_{33375} = (30, 17, 31, 1)$   
 978 :  $P_{33381} = (4, 18, 31, 1)$   
 979 :  $P_{33387} = (10, 18, 31, 1)$   
 980 :  $P_{33392} = (15, 18, 31, 1)$   
 981 :  $P_{33466} = (25, 20, 31, 1)$   
 982 :  $P_{33496} = (23, 21, 31, 1)$   
 983 :  $P_{33529} = (24, 22, 31, 1)$

984 :  $P_{33549} = (12, 23, 31, 1)$   
985 :  $P_{33586} = (17, 24, 31, 1)$   
986 :  $P_{33604} = (3, 25, 31, 1)$   
987 :  $P_{33640} = (7, 26, 31, 1)$   
988 :  $P_{33666} = (1, 27, 31, 1)$

989 :  $P_{33711} = (14, 28, 31, 1)$   
990 :  $P_{33713} = (16, 28, 31, 1)$   
991 :  $P_{33728} = (31, 28, 31, 1)$

**Line Intersection Graph**

$$\frac{\quad}{0}\bigg|\frac{0}{0}$$

Neighbor sets in the line intersection graph:  
Line 0 intersects

Line
in point

The surface has 1025 points:  
Too many to print.