

# Rank-67107 over GF(32)

January 15, 2021

## The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(32) is 1141933093

## General information

Number of lines	6
Number of points	1121
Number of singular points	1
Number of Eckardt points	1
Number of double points	6
Number of single points	183
Number of points off lines	931
Number of Hesse planes	0
Number of axes	0
Type of points on lines	$33^6$
Type of lines on points	$3, 2^6, 1^{183}, 0^{931}$

## Singular Points

The surface has 1 singular points:

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

## The 6 Lines

The lines and their Pluecker coordinates are:

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

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{1058} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{1058} = \mathbf{Pl}(1, 0, 1, 0, 0, 1)_{34913} \\
\ell_2 &= \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1082368} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{1082368} = \mathbf{Pl}(0, 0, 0, 0, 0, 1)_{34849} \\
\ell_3 &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1056} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1056} = \mathbf{Pl}(0, 0, 0, 0, 1, 0)_{1089} \\
\ell_4 &= \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1083424} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1083424} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1 \\
\ell_5 &= \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{34880} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{34880} = \mathbf{Pl}(0, 1, 0, 0, 1, 0)_{1121}
\end{aligned}$$

Rank of lines: ( 0, 1058, 1082368, 1056, 1083424, 34880 )

Rank of points on Klein quadric: ( 0, 34913, 34849, 1089, 1, 1121 )

### Eckardt Points

The surface has 1 Eckardt points:

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

### Double Points

The surface has 6 Double points:

The double points on the surface are:

$$\begin{aligned}
P_5 &= (1, 1, 0, 0) = \ell_0 \cap \ell_1 \\
P_1 &= (0, 1, 0, 0) = \ell_0 \cap \ell_2 \\
P_0 &= (1, 0, 0, 0) = \ell_0 \cap \ell_3 \\
P_{67} &= (0, 1, 1, 0) = \ell_1 \cap \ell_2
\end{aligned}$$

$$\begin{aligned}
P_{36} &= (1, 0, 1, 0) = \ell_1 \cap \ell_5 \\
P_2 &= (0, 0, 1, 0) = \ell_2 \cap \ell_4
\end{aligned}$$

### Single Points

The surface has 183 single points:

The single points on the surface are:

$$\begin{aligned}
0 : P_6 &= (2, 1, 0, 0) \text{ lies on line } \ell_0 \\
1 : P_7 &= (3, 1, 0, 0) \text{ lies on line } \ell_0 \\
2 : P_8 &= (4, 1, 0, 0) \text{ lies on line } \ell_0 \\
3 : P_9 &= (5, 1, 0, 0) \text{ lies on line } \ell_0 \\
4 : P_{10} &= (6, 1, 0, 0) \text{ lies on line } \ell_0 \\
5 : P_{11} &= (7, 1, 0, 0) \text{ lies on line } \ell_0 \\
6 : P_{12} &= (8, 1, 0, 0) \text{ lies on line } \ell_0 \\
7 : P_{13} &= (9, 1, 0, 0) \text{ lies on line } \ell_0 \\
8 : P_{14} &= (10, 1, 0, 0) \text{ lies on line } \ell_0 \\
9 : P_{15} &= (11, 1, 0, 0) \text{ lies on line } \ell_0 \\
10 : P_{16} &= (12, 1, 0, 0) \text{ lies on line } \ell_0 \\
11 : P_{17} &= (13, 1, 0, 0) \text{ lies on line } \ell_0 \\
12 : P_{18} &= (14, 1, 0, 0) \text{ lies on line } \ell_0 \\
13 : P_{19} &= (15, 1, 0, 0) \text{ lies on line } \ell_0 \\
14 : P_{20} &= (16, 1, 0, 0) \text{ lies on line } \ell_0
\end{aligned}$$

$$\begin{aligned}
15 : P_{21} &= (17, 1, 0, 0) \text{ lies on line } \ell_0 \\
16 : P_{22} &= (18, 1, 0, 0) \text{ lies on line } \ell_0 \\
17 : P_{23} &= (19, 1, 0, 0) \text{ lies on line } \ell_0 \\
18 : P_{24} &= (20, 1, 0, 0) \text{ lies on line } \ell_0 \\
19 : P_{25} &= (21, 1, 0, 0) \text{ lies on line } \ell_0 \\
20 : P_{26} &= (22, 1, 0, 0) \text{ lies on line } \ell_0 \\
21 : P_{27} &= (23, 1, 0, 0) \text{ lies on line } \ell_0 \\
22 : P_{28} &= (24, 1, 0, 0) \text{ lies on line } \ell_0 \\
23 : P_{29} &= (25, 1, 0, 0) \text{ lies on line } \ell_0 \\
24 : P_{30} &= (26, 1, 0, 0) \text{ lies on line } \ell_0 \\
25 : P_{31} &= (27, 1, 0, 0) \text{ lies on line } \ell_0 \\
26 : P_{32} &= (28, 1, 0, 0) \text{ lies on line } \ell_0 \\
27 : P_{33} &= (29, 1, 0, 0) \text{ lies on line } \ell_0 \\
28 : P_{34} &= (30, 1, 0, 0) \text{ lies on line } \ell_0 \\
29 : P_{35} &= (31, 1, 0, 0) \text{ lies on line } \ell_0
\end{aligned}$$

30 :  $P_{99} = (0, 2, 1, 0)$  lies on line  $\ell_2$   
 31 :  $P_{102} = (3, 2, 1, 0)$  lies on line  $\ell_1$   
 32 :  $P_{131} = (0, 3, 1, 0)$  lies on line  $\ell_2$   
 33 :  $P_{133} = (2, 3, 1, 0)$  lies on line  $\ell_1$   
 34 :  $P_{163} = (0, 4, 1, 0)$  lies on line  $\ell_2$   
 35 :  $P_{168} = (5, 4, 1, 0)$  lies on line  $\ell_1$   
 36 :  $P_{195} = (0, 5, 1, 0)$  lies on line  $\ell_2$   
 37 :  $P_{199} = (4, 5, 1, 0)$  lies on line  $\ell_1$   
 38 :  $P_{227} = (0, 6, 1, 0)$  lies on line  $\ell_2$   
 39 :  $P_{234} = (7, 6, 1, 0)$  lies on line  $\ell_1$   
 40 :  $P_{259} = (0, 7, 1, 0)$  lies on line  $\ell_2$   
 41 :  $P_{265} = (6, 7, 1, 0)$  lies on line  $\ell_1$   
 42 :  $P_{291} = (0, 8, 1, 0)$  lies on line  $\ell_2$   
 43 :  $P_{300} = (9, 8, 1, 0)$  lies on line  $\ell_1$   
 44 :  $P_{323} = (0, 9, 1, 0)$  lies on line  $\ell_2$   
 45 :  $P_{331} = (8, 9, 1, 0)$  lies on line  $\ell_1$   
 46 :  $P_{355} = (0, 10, 1, 0)$  lies on line  $\ell_2$   
 47 :  $P_{366} = (11, 10, 1, 0)$  lies on line  $\ell_1$   
 48 :  $P_{387} = (0, 11, 1, 0)$  lies on line  $\ell_2$   
 49 :  $P_{397} = (10, 11, 1, 0)$  lies on line  $\ell_1$   
 50 :  $P_{419} = (0, 12, 1, 0)$  lies on line  $\ell_2$   
 51 :  $P_{432} = (13, 12, 1, 0)$  lies on line  $\ell_1$   
 52 :  $P_{451} = (0, 13, 1, 0)$  lies on line  $\ell_2$   
 53 :  $P_{463} = (12, 13, 1, 0)$  lies on line  $\ell_1$   
 54 :  $P_{483} = (0, 14, 1, 0)$  lies on line  $\ell_2$   
 55 :  $P_{498} = (15, 14, 1, 0)$  lies on line  $\ell_1$   
 56 :  $P_{515} = (0, 15, 1, 0)$  lies on line  $\ell_2$   
 57 :  $P_{529} = (14, 15, 1, 0)$  lies on line  $\ell_1$   
 58 :  $P_{547} = (0, 16, 1, 0)$  lies on line  $\ell_2$   
 59 :  $P_{564} = (17, 16, 1, 0)$  lies on line  $\ell_1$   
 60 :  $P_{579} = (0, 17, 1, 0)$  lies on line  $\ell_2$   
 61 :  $P_{595} = (16, 17, 1, 0)$  lies on line  $\ell_1$   
 62 :  $P_{611} = (0, 18, 1, 0)$  lies on line  $\ell_2$   
 63 :  $P_{630} = (19, 18, 1, 0)$  lies on line  $\ell_1$   
 64 :  $P_{643} = (0, 19, 1, 0)$  lies on line  $\ell_2$   
 65 :  $P_{661} = (18, 19, 1, 0)$  lies on line  $\ell_1$   
 66 :  $P_{675} = (0, 20, 1, 0)$  lies on line  $\ell_2$   
 67 :  $P_{696} = (21, 20, 1, 0)$  lies on line  $\ell_1$   
 68 :  $P_{707} = (0, 21, 1, 0)$  lies on line  $\ell_2$   
 69 :  $P_{727} = (20, 21, 1, 0)$  lies on line  $\ell_1$   
 70 :  $P_{739} = (0, 22, 1, 0)$  lies on line  $\ell_2$   
 71 :  $P_{762} = (23, 22, 1, 0)$  lies on line  $\ell_1$   
 72 :  $P_{771} = (0, 23, 1, 0)$  lies on line  $\ell_2$   
 73 :  $P_{793} = (22, 23, 1, 0)$  lies on line  $\ell_1$   
 74 :  $P_{803} = (0, 24, 1, 0)$  lies on line  $\ell_2$   
 75 :  $P_{828} = (25, 24, 1, 0)$  lies on line  $\ell_1$   
 76 :  $P_{835} = (0, 25, 1, 0)$  lies on line  $\ell_2$   
 77 :  $P_{859} = (24, 25, 1, 0)$  lies on line  $\ell_1$   
 78 :  $P_{867} = (0, 26, 1, 0)$  lies on line  $\ell_2$   
 79 :  $P_{894} = (27, 26, 1, 0)$  lies on line  $\ell_1$   
 80 :  $P_{899} = (0, 27, 1, 0)$  lies on line  $\ell_2$   
 81 :  $P_{925} = (26, 27, 1, 0)$  lies on line  $\ell_1$   
 82 :  $P_{931} = (0, 28, 1, 0)$  lies on line  $\ell_2$   
 83 :  $P_{960} = (29, 28, 1, 0)$  lies on line  $\ell_1$

84 :  $P_{963} = (0, 29, 1, 0)$  lies on line  $\ell_2$   
 85 :  $P_{991} = (28, 29, 1, 0)$  lies on line  $\ell_1$   
 86 :  $P_{995} = (0, 30, 1, 0)$  lies on line  $\ell_2$   
 87 :  $P_{1026} = (31, 30, 1, 0)$  lies on line  $\ell_1$   
 88 :  $P_{1027} = (0, 31, 1, 0)$  lies on line  $\ell_2$   
 89 :  $P_{1057} = (30, 31, 1, 0)$  lies on line  $\ell_1$   
 90 :  $P_{1059} = (1, 0, 0, 1)$  lies on line  $\ell_3$   
 91 :  $P_{1060} = (2, 0, 0, 1)$  lies on line  $\ell_3$   
 92 :  $P_{1061} = (3, 0, 0, 1)$  lies on line  $\ell_3$   
 93 :  $P_{1062} = (4, 0, 0, 1)$  lies on line  $\ell_3$   
 94 :  $P_{1063} = (5, 0, 0, 1)$  lies on line  $\ell_3$   
 95 :  $P_{1064} = (6, 0, 0, 1)$  lies on line  $\ell_3$   
 96 :  $P_{1065} = (7, 0, 0, 1)$  lies on line  $\ell_3$   
 97 :  $P_{1066} = (8, 0, 0, 1)$  lies on line  $\ell_3$   
 98 :  $P_{1067} = (9, 0, 0, 1)$  lies on line  $\ell_3$   
 99 :  $P_{1068} = (10, 0, 0, 1)$  lies on line  $\ell_3$   
 100 :  $P_{1069} = (11, 0, 0, 1)$  lies on line  $\ell_3$   
 101 :  $P_{1070} = (12, 0, 0, 1)$  lies on line  $\ell_3$   
 102 :  $P_{1071} = (13, 0, 0, 1)$  lies on line  $\ell_3$   
 103 :  $P_{1072} = (14, 0, 0, 1)$  lies on line  $\ell_3$   
 104 :  $P_{1073} = (15, 0, 0, 1)$  lies on line  $\ell_3$   
 105 :  $P_{1074} = (16, 0, 0, 1)$  lies on line  $\ell_3$   
 106 :  $P_{1075} = (17, 0, 0, 1)$  lies on line  $\ell_3$   
 107 :  $P_{1076} = (18, 0, 0, 1)$  lies on line  $\ell_3$   
 108 :  $P_{1077} = (19, 0, 0, 1)$  lies on line  $\ell_3$   
 109 :  $P_{1078} = (20, 0, 0, 1)$  lies on line  $\ell_3$   
 110 :  $P_{1079} = (21, 0, 0, 1)$  lies on line  $\ell_3$   
 111 :  $P_{1080} = (22, 0, 0, 1)$  lies on line  $\ell_3$   
 112 :  $P_{1081} = (23, 0, 0, 1)$  lies on line  $\ell_3$   
 113 :  $P_{1082} = (24, 0, 0, 1)$  lies on line  $\ell_3$   
 114 :  $P_{1083} = (25, 0, 0, 1)$  lies on line  $\ell_3$   
 115 :  $P_{1084} = (26, 0, 0, 1)$  lies on line  $\ell_3$   
 116 :  $P_{1085} = (27, 0, 0, 1)$  lies on line  $\ell_3$   
 117 :  $P_{1086} = (28, 0, 0, 1)$  lies on line  $\ell_3$   
 118 :  $P_{1087} = (29, 0, 0, 1)$  lies on line  $\ell_3$   
 119 :  $P_{1088} = (30, 0, 0, 1)$  lies on line  $\ell_3$   
 120 :  $P_{1089} = (31, 0, 0, 1)$  lies on line  $\ell_3$   
 121 :  $P_{2082} = (0, 0, 1, 1)$  lies on line  $\ell_4$   
 122 :  $P_{2083} = (1, 0, 1, 1)$  lies on line  $\ell_5$   
 123 :  $P_{3105} = (0, 0, 2, 1)$  lies on line  $\ell_4$   
 124 :  $P_{3107} = (2, 0, 2, 1)$  lies on line  $\ell_5$   
 125 :  $P_{4129} = (0, 0, 3, 1)$  lies on line  $\ell_4$   
 126 :  $P_{4132} = (3, 0, 3, 1)$  lies on line  $\ell_5$   
 127 :  $P_{5153} = (0, 0, 4, 1)$  lies on line  $\ell_4$   
 128 :  $P_{5157} = (4, 0, 4, 1)$  lies on line  $\ell_5$   
 129 :  $P_{6177} = (0, 0, 5, 1)$  lies on line  $\ell_4$   
 130 :  $P_{6182} = (5, 0, 5, 1)$  lies on line  $\ell_5$   
 131 :  $P_{7201} = (0, 0, 6, 1)$  lies on line  $\ell_4$   
 132 :  $P_{7207} = (6, 0, 6, 1)$  lies on line  $\ell_5$   
 133 :  $P_{8225} = (0, 0, 7, 1)$  lies on line  $\ell_4$   
 134 :  $P_{8232} = (7, 0, 7, 1)$  lies on line  $\ell_5$   
 135 :  $P_{9249} = (0, 0, 8, 1)$  lies on line  $\ell_4$   
 136 :  $P_{9257} = (8, 0, 8, 1)$  lies on line  $\ell_5$   
 137 :  $P_{10273} = (0, 0, 9, 1)$  lies on line  $\ell_4$

138 :  $P_{10282} = (9, 0, 9, 1)$  lies on line  $\ell_5$   
 139 :  $P_{11297} = (0, 0, 10, 1)$  lies on line  $\ell_4$   
 140 :  $P_{11307} = (10, 0, 10, 1)$  lies on line  $\ell_5$   
 141 :  $P_{12321} = (0, 0, 11, 1)$  lies on line  $\ell_4$   
 142 :  $P_{12332} = (11, 0, 11, 1)$  lies on line  $\ell_5$   
 143 :  $P_{13345} = (0, 0, 12, 1)$  lies on line  $\ell_4$   
 144 :  $P_{13357} = (12, 0, 12, 1)$  lies on line  $\ell_5$   
 145 :  $P_{14369} = (0, 0, 13, 1)$  lies on line  $\ell_4$   
 146 :  $P_{14382} = (13, 0, 13, 1)$  lies on line  $\ell_5$   
 147 :  $P_{15393} = (0, 0, 14, 1)$  lies on line  $\ell_4$   
 148 :  $P_{15407} = (14, 0, 14, 1)$  lies on line  $\ell_5$   
 149 :  $P_{16417} = (0, 0, 15, 1)$  lies on line  $\ell_4$   
 150 :  $P_{16432} = (15, 0, 15, 1)$  lies on line  $\ell_5$   
 151 :  $P_{17441} = (0, 0, 16, 1)$  lies on line  $\ell_4$   
 152 :  $P_{17457} = (16, 0, 16, 1)$  lies on line  $\ell_5$   
 153 :  $P_{18465} = (0, 0, 17, 1)$  lies on line  $\ell_4$   
 154 :  $P_{18482} = (17, 0, 17, 1)$  lies on line  $\ell_5$   
 155 :  $P_{19489} = (0, 0, 18, 1)$  lies on line  $\ell_4$   
 156 :  $P_{19507} = (18, 0, 18, 1)$  lies on line  $\ell_5$   
 157 :  $P_{20513} = (0, 0, 19, 1)$  lies on line  $\ell_4$   
 158 :  $P_{20532} = (19, 0, 19, 1)$  lies on line  $\ell_5$   
 159 :  $P_{21537} = (0, 0, 20, 1)$  lies on line  $\ell_4$   
 160 :  $P_{21557} = (20, 0, 20, 1)$  lies on line  $\ell_5$

161 :  $P_{22561} = (0, 0, 21, 1)$  lies on line  $\ell_4$   
 162 :  $P_{22582} = (21, 0, 21, 1)$  lies on line  $\ell_5$   
 163 :  $P_{23585} = (0, 0, 22, 1)$  lies on line  $\ell_4$   
 164 :  $P_{23607} = (22, 0, 22, 1)$  lies on line  $\ell_5$   
 165 :  $P_{24609} = (0, 0, 23, 1)$  lies on line  $\ell_4$   
 166 :  $P_{24632} = (23, 0, 23, 1)$  lies on line  $\ell_5$   
 167 :  $P_{25633} = (0, 0, 24, 1)$  lies on line  $\ell_4$   
 168 :  $P_{25657} = (24, 0, 24, 1)$  lies on line  $\ell_5$   
 169 :  $P_{26657} = (0, 0, 25, 1)$  lies on line  $\ell_4$   
 170 :  $P_{26682} = (25, 0, 25, 1)$  lies on line  $\ell_5$   
 171 :  $P_{27681} = (0, 0, 26, 1)$  lies on line  $\ell_4$   
 172 :  $P_{27707} = (26, 0, 26, 1)$  lies on line  $\ell_5$   
 173 :  $P_{28705} = (0, 0, 27, 1)$  lies on line  $\ell_4$   
 174 :  $P_{28732} = (27, 0, 27, 1)$  lies on line  $\ell_5$   
 175 :  $P_{29729} = (0, 0, 28, 1)$  lies on line  $\ell_4$   
 176 :  $P_{29757} = (28, 0, 28, 1)$  lies on line  $\ell_5$   
 177 :  $P_{30753} = (0, 0, 29, 1)$  lies on line  $\ell_4$   
 178 :  $P_{30782} = (29, 0, 29, 1)$  lies on line  $\ell_5$   
 179 :  $P_{31777} = (0, 0, 30, 1)$  lies on line  $\ell_4$   
 180 :  $P_{31807} = (30, 0, 30, 1)$  lies on line  $\ell_5$   
 181 :  $P_{32801} = (0, 0, 31, 1)$  lies on line  $\ell_4$   
 182 :  $P_{32832} = (31, 0, 31, 1)$  lies on line  $\ell_5$

The single points on the surface are:

#### Points on surface but on no line

The surface has 931 points not on any line:

The points on the surface but not on lines are:

0 :  $P_4 = (1, 1, 1, 1)$   
 1 :  $P_{2165} = (20, 2, 1, 1)$   
 2 :  $P_{2168} = (23, 2, 1, 1)$   
 3 :  $P_{2233} = (24, 4, 1, 1)$   
 4 :  $P_{2238} = (29, 4, 1, 1)$   
 5 :  $P_{2290} = (17, 6, 1, 1)$   
 6 :  $P_{2295} = (22, 6, 1, 1)$   
 7 :  $P_{2331} = (26, 7, 1, 1)$   
 8 :  $P_{2333} = (28, 7, 1, 1)$   
 9 :  $P_{2518} = (21, 13, 1, 1)$   
 10 :  $P_{2522} = (25, 13, 1, 1)$   
 11 :  $P_{2600} = (7, 16, 1, 1)$   
 12 :  $P_{2615} = (22, 16, 1, 1)$   
 13 :  $P_{2733} = (12, 20, 1, 1)$   
 14 :  $P_{2746} = (25, 20, 1, 1)$   
 15 :  $P_{2756} = (3, 21, 1, 1)$   
 16 :  $P_{2776} = (23, 21, 1, 1)$   
 17 :  $P_{2788} = (3, 22, 1, 1)$   
 18 :  $P_{2805} = (20, 22, 1, 1)$   
 19 :  $P_{2824} = (7, 23, 1, 1)$   
 20 :  $P_{2834} = (17, 23, 1, 1)$

21 :  $P_{2861} = (12, 24, 1, 1)$   
 22 :  $P_{2870} = (21, 24, 1, 1)$   
 23 :  $P_{2886} = (5, 25, 1, 1)$   
 24 :  $P_{2910} = (29, 25, 1, 1)$   
 25 :  $P_{2951} = (6, 27, 1, 1)$   
 26 :  $P_{2973} = (28, 27, 1, 1)$   
 27 :  $P_{2982} = (5, 28, 1, 1)$   
 28 :  $P_{3001} = (24, 28, 1, 1)$   
 29 :  $P_{3015} = (6, 29, 1, 1)$   
 30 :  $P_{3035} = (26, 29, 1, 1)$   
 31 :  $P_{3145} = (8, 1, 2, 1)$   
 32 :  $P_{3148} = (11, 1, 2, 1)$   
 33 :  $P_{3196} = (27, 2, 2, 1)$   
 34 :  $P_{3215} = (14, 3, 2, 1)$   
 35 :  $P_{3216} = (15, 3, 2, 1)$   
 36 :  $P_{3235} = (2, 4, 2, 1)$   
 37 :  $P_{3237} = (4, 4, 2, 1)$   
 38 :  $P_{3306} = (9, 6, 2, 1)$   
 39 :  $P_{3310} = (13, 6, 2, 1)$   
 40 :  $P_{3493} = (4, 12, 2, 1)$   
 41 :  $P_{3499} = (10, 12, 2, 1)$

42 : $P_{3571} = (18, 14, 2, 1)$	96 : $P_{5390} = (13, 7, 4, 1)$
43 : $P_{3583} = (30, 14, 2, 1)$	97 : $P_{5391} = (14, 7, 4, 1)$
44 : $P_{3603} = (18, 15, 2, 1)$	98 : $P_{5539} = (2, 12, 4, 1)$
45 : $P_{3616} = (31, 15, 2, 1)$	99 : $P_{5547} = (10, 12, 4, 1)$
46 : $P_{3657} = (8, 17, 2, 1)$	100 : $P_{5669} = (4, 16, 4, 1)$
47 : $P_{3676} = (27, 17, 2, 1)$	101 : $P_{5681} = (16, 16, 4, 1)$
48 : $P_{3754} = (9, 20, 2, 1)$	102 : $P_{5737} = (8, 18, 4, 1)$
49 : $P_{3776} = (31, 20, 2, 1)$	103 : $P_{5759} = (30, 18, 4, 1)$
50 : $P_{3852} = (11, 23, 2, 1)$	104 : $P_{5804} = (11, 20, 4, 1)$
51 : $P_{3871} = (30, 23, 2, 1)$	105 : $P_{5820} = (27, 20, 4, 1)$
52 : $P_{3883} = (10, 24, 2, 1)$	106 : $P_{5870} = (13, 22, 4, 1)$
53 : $P_{3889} = (16, 24, 2, 1)$	107 : $P_{5888} = (31, 22, 4, 1)$
54 : $P_{4014} = (13, 28, 2, 1)$	108 : $P_{5897} = (8, 23, 4, 1)$
55 : $P_{4020} = (19, 28, 2, 1)$	109 : $P_{5916} = (27, 23, 4, 1)$
56 : $P_{4048} = (15, 29, 2, 1)$	110 : $P_{5936} = (15, 24, 4, 1)$
57 : $P_{4049} = (16, 29, 2, 1)$	111 : $P_{5940} = (19, 24, 4, 1)$
58 : $P_{4111} = (14, 31, 2, 1)$	112 : $P_{5999} = (14, 26, 4, 1)$
59 : $P_{4116} = (19, 31, 2, 1)$	113 : $P_{6001} = (16, 26, 4, 1)$
60 : $P_{4217} = (24, 2, 3, 1)$	114 : $P_{6092} = (11, 29, 4, 1)$
61 : $P_{4218} = (25, 2, 3, 1)$	115 : $P_{6099} = (18, 29, 4, 1)$
62 : $P_{4251} = (26, 3, 3, 1)$	116 : $P_{6122} = (9, 30, 4, 1)$
63 : $P_{4292} = (3, 5, 3, 1)$	117 : $P_{6132} = (19, 30, 4, 1)$
64 : $P_{4294} = (5, 5, 3, 1)$	118 : $P_{6154} = (9, 31, 4, 1)$
65 : $P_{4402} = (17, 8, 3, 1)$	119 : $P_{6163} = (18, 31, 4, 1)$
66 : $P_{4411} = (26, 8, 3, 1)$	120 : $P_{6311} = (6, 4, 5, 1)$
67 : $P_{4440} = (23, 9, 3, 1)$	121 : $P_{6312} = (7, 4, 5, 1)$
68 : $P_{4446} = (29, 9, 3, 1)$	122 : $P_{6340} = (3, 5, 5, 1)$
69 : $P_{4454} = (5, 10, 3, 1)$	123 : $P_{6389} = (20, 6, 5, 1)$
70 : $P_{4461} = (12, 10, 3, 1)$	124 : $P_{6392} = (23, 6, 5, 1)$
71 : $P_{4502} = (21, 11, 3, 1)$	125 : $P_{6422} = (21, 7, 5, 1)$
72 : $P_{4510} = (29, 11, 3, 1)$	126 : $P_{6424} = (23, 7, 5, 1)$
73 : $P_{4535} = (22, 12, 3, 1)$	127 : $P_{6453} = (20, 8, 5, 1)$
74 : $P_{4538} = (25, 12, 3, 1)$	128 : $P_{6458} = (25, 8, 5, 1)$
75 : $P_{4629} = (20, 15, 3, 1)$	129 : $P_{6500} = (3, 10, 5, 1)$
76 : $P_{4633} = (24, 15, 3, 1)$	130 : $P_{6509} = (12, 10, 5, 1)$
77 : $P_{4680} = (7, 17, 3, 1)$	131 : $P_{6551} = (22, 11, 5, 1)$
78 : $P_{4694} = (21, 17, 3, 1)$	132 : $P_{6553} = (24, 11, 5, 1)$
79 : $P_{4743} = (6, 19, 3, 1)$	133 : $P_{6582} = (21, 12, 5, 1)$
80 : $P_{4759} = (22, 19, 3, 1)$	134 : $P_{6589} = (28, 12, 5, 1)$
81 : $P_{4802} = (1, 21, 3, 1)$	135 : $P_{6642} = (17, 14, 5, 1)$
82 : $P_{4824} = (23, 21, 3, 1)$	136 : $P_{6651} = (26, 14, 5, 1)$
83 : $P_{4834} = (1, 22, 3, 1)$	137 : $P_{6679} = (22, 15, 5, 1)$
84 : $P_{4853} = (20, 22, 3, 1)$	138 : $P_{6685} = (28, 15, 5, 1)$
85 : $P_{4904} = (7, 24, 3, 1)$	139 : $P_{6726} = (5, 17, 5, 1)$
86 : $P_{4925} = (28, 24, 3, 1)$	140 : $P_{6738} = (17, 17, 5, 1)$
87 : $P_{4935} = (6, 25, 3, 1)$	141 : $P_{6797} = (12, 19, 5, 1)$
88 : $P_{4957} = (28, 25, 3, 1)$	142 : $P_{6811} = (26, 19, 5, 1)$
89 : $P_{5101} = (12, 30, 3, 1)$	143 : $P_{6978} = (1, 25, 5, 1)$
90 : $P_{5106} = (17, 30, 3, 1)$	144 : $P_{7006} = (29, 25, 5, 1)$
91 : $P_{5195} = (10, 1, 4, 1)$	145 : $P_{7015} = (6, 26, 5, 1)$
92 : $P_{5200} = (15, 1, 4, 1)$	146 : $P_{7034} = (25, 26, 5, 1)$
93 : $P_{5283} = (2, 4, 4, 1)$	147 : $P_{7074} = (1, 28, 5, 1)$
94 : $P_{5343} = (30, 5, 4, 1)$	148 : $P_{7097} = (24, 28, 5, 1)$
95 : $P_{5344} = (31, 5, 4, 1)$	149 : $P_{7176} = (7, 31, 5, 1)$

150 :  $P_{7198} = (29, 31, 5, 1)$   
 151 :  $P_{7314} = (17, 3, 6, 1)$   
 152 :  $P_{7317} = (20, 3, 6, 1)$   
 153 :  $P_{7334} = (5, 4, 6, 1)$   
 154 :  $P_{7336} = (7, 4, 6, 1)$   
 155 :  $P_{7418} = (25, 6, 6, 1)$   
 156 :  $P_{7479} = (22, 8, 6, 1)$   
 157 :  $P_{7481} = (24, 8, 6, 1)$   
 158 :  $P_{7538} = (17, 10, 6, 1)$   
 159 :  $P_{7550} = (29, 10, 6, 1)$   
 160 :  $P_{7576} = (23, 11, 6, 1)$   
 161 :  $P_{7579} = (26, 11, 6, 1)$   
 162 :  $P_{7670} = (21, 14, 6, 1)$   
 163 :  $P_{7678} = (29, 14, 6, 1)$   
 164 :  $P_{7789} = (12, 18, 6, 1)$   
 165 :  $P_{7801} = (24, 18, 6, 1)$   
 166 :  $P_{7812} = (3, 19, 6, 1)$   
 167 :  $P_{7831} = (22, 19, 6, 1)$   
 168 :  $P_{7847} = (6, 20, 6, 1)$   
 169 :  $P_{7861} = (20, 20, 6, 1)$   
 170 :  $P_{7912} = (7, 22, 6, 1)$   
 171 :  $P_{7928} = (23, 22, 6, 1)$   
 172 :  $P_{8004} = (3, 25, 6, 1)$   
 173 :  $P_{8029} = (28, 25, 6, 1)$   
 174 :  $P_{8038} = (5, 26, 6, 1)$   
 175 :  $P_{8058} = (25, 26, 6, 1)$   
 176 :  $P_{8066} = (1, 27, 6, 1)$   
 177 :  $P_{8093} = (28, 27, 6, 1)$   
 178 :  $P_{8130} = (1, 29, 6, 1)$   
 179 :  $P_{8155} = (26, 29, 6, 1)$   
 180 :  $P_{8205} = (12, 31, 6, 1)$   
 181 :  $P_{8214} = (21, 31, 6, 1)$   
 182 :  $P_{8358} = (5, 4, 7, 1)$   
 183 :  $P_{8359} = (6, 4, 7, 1)$   
 184 :  $P_{8409} = (24, 5, 7, 1)$   
 185 :  $P_{8411} = (26, 5, 7, 1)$   
 186 :  $P_{8445} = (28, 6, 7, 1)$   
 187 :  $P_{8446} = (29, 6, 7, 1)$   
 188 :  $P_{8473} = (24, 7, 7, 1)$   
 189 :  $P_{8533} = (20, 9, 7, 1)$   
 190 :  $P_{8539} = (26, 9, 7, 1)$   
 191 :  $P_{8565} = (20, 10, 7, 1)$   
 192 :  $P_{8570} = (25, 10, 7, 1)$   
 193 :  $P_{8722} = (17, 15, 7, 1)$   
 194 :  $P_{8730} = (25, 15, 7, 1)$   
 195 :  $P_{8738} = (1, 16, 7, 1)$   
 196 :  $P_{8759} = (22, 16, 7, 1)$   
 197 :  $P_{8772} = (3, 17, 7, 1)$   
 198 :  $P_{8790} = (21, 17, 7, 1)$   
 199 :  $P_{8904} = (7, 21, 7, 1)$   
 200 :  $P_{8918} = (21, 21, 7, 1)$   
 201 :  $P_{8935} = (6, 22, 7, 1)$   
 202 :  $P_{8952} = (23, 22, 7, 1)$   
 203 :  $P_{8962} = (1, 23, 7, 1)$

204 :  $P_{8978} = (17, 23, 7, 1)$   
 205 :  $P_{8996} = (3, 24, 7, 1)$   
 206 :  $P_{9021} = (28, 24, 7, 1)$   
 207 :  $P_{9133} = (12, 28, 7, 1)$   
 208 :  $P_{9144} = (23, 28, 7, 1)$   
 209 :  $P_{9165} = (12, 29, 7, 1)$   
 210 :  $P_{9175} = (22, 29, 7, 1)$   
 211 :  $P_{9222} = (5, 31, 7, 1)$   
 212 :  $P_{9246} = (29, 31, 7, 1)$   
 213 :  $P_{9283} = (2, 1, 8, 1)$   
 214 :  $P_{9292} = (11, 1, 8, 1)$   
 215 :  $P_{9396} = (19, 4, 8, 1)$   
 216 :  $P_{9408} = (31, 4, 8, 1)$   
 217 :  $P_{9489} = (16, 7, 8, 1)$   
 218 :  $P_{9504} = (31, 7, 8, 1)$   
 219 :  $P_{9524} = (19, 8, 8, 1)$   
 220 :  $P_{9577} = (8, 10, 8, 1)$   
 221 :  $P_{9579} = (10, 10, 8, 1)$   
 222 :  $P_{9614} = (13, 11, 8, 1)$   
 223 :  $P_{9615} = (14, 11, 8, 1)$   
 224 :  $P_{9642} = (9, 12, 8, 1)$   
 225 :  $P_{9646} = (13, 12, 8, 1)$   
 226 :  $P_{9706} = (9, 14, 8, 1)$   
 227 :  $P_{9712} = (15, 14, 8, 1)$   
 228 :  $P_{9771} = (10, 16, 8, 1)$   
 229 :  $P_{9779} = (18, 16, 8, 1)$   
 230 :  $P_{9795} = (2, 17, 8, 1)$   
 231 :  $P_{9820} = (27, 17, 8, 1)$   
 232 :  $P_{9829} = (4, 18, 8, 1)$   
 233 :  $P_{9855} = (30, 18, 8, 1)$   
 234 :  $P_{9868} = (11, 19, 8, 1)$   
 235 :  $P_{9873} = (16, 19, 8, 1)$   
 236 :  $P_{9903} = (14, 20, 8, 1)$   
 237 :  $P_{9907} = (18, 20, 8, 1)$   
 238 :  $P_{9989} = (4, 23, 8, 1)$   
 239 :  $P_{10012} = (27, 23, 8, 1)$   
 240 :  $P_{10064} = (15, 25, 8, 1)$   
 241 :  $P_{10079} = (30, 25, 8, 1)$   
 242 :  $P_{10324} = (19, 1, 9, 1)$   
 243 :  $P_{10332} = (27, 1, 9, 1)$   
 244 :  $P_{10467} = (2, 6, 9, 1)$   
 245 :  $P_{10478} = (13, 6, 9, 1)$   
 246 :  $P_{10559} = (30, 8, 9, 1)$   
 247 :  $P_{10560} = (31, 8, 9, 1)$   
 248 :  $P_{10579} = (18, 9, 9, 1)$   
 249 :  $P_{10634} = (9, 11, 9, 1)$   
 250 :  $P_{10636} = (11, 11, 9, 1)$   
 251 :  $P_{10665} = (8, 12, 9, 1)$   
 252 :  $P_{10670} = (13, 12, 9, 1)$   
 253 :  $P_{10699} = (10, 13, 9, 1)$   
 254 :  $P_{10703} = (14, 13, 9, 1)$   
 255 :  $P_{10729} = (8, 14, 9, 1)$   
 256 :  $P_{10736} = (15, 14, 9, 1)$   
 257 :  $P_{10860} = (11, 18, 9, 1)$

258 :  $P_{10865} = (16, 18, 9, 1)$   
 259 :  $P_{10915} = (2, 20, 9, 1)$   
 260 :  $P_{10944} = (31, 20, 9, 1)$   
 261 :  $P_{10992} = (15, 22, 9, 1)$   
 262 :  $P_{10993} = (16, 22, 9, 1)$   
 263 :  $P_{11183} = (14, 28, 9, 1)$   
 264 :  $P_{11196} = (27, 28, 9, 1)$   
 265 :  $P_{11211} = (10, 29, 9, 1)$   
 266 :  $P_{11231} = (30, 29, 9, 1)$   
 267 :  $P_{11237} = (4, 30, 9, 1)$   
 268 :  $P_{11252} = (19, 30, 9, 1)$   
 269 :  $P_{11269} = (4, 31, 9, 1)$   
 270 :  $P_{11283} = (18, 31, 9, 1)$   
 271 :  $P_{11333} = (4, 1, 10, 1)$   
 272 :  $P_{11344} = (15, 1, 10, 1)$   
 273 :  $P_{11508} = (19, 6, 10, 1)$   
 274 :  $P_{11520} = (31, 6, 10, 1)$   
 275 :  $P_{11566} = (13, 8, 10, 1)$   
 276 :  $P_{11568} = (15, 8, 10, 1)$   
 277 :  $P_{11601} = (16, 9, 10, 1)$   
 278 :  $P_{11604} = (19, 9, 10, 1)$   
 279 :  $P_{11625} = (8, 10, 10, 1)$   
 280 :  $P_{11683} = (2, 12, 10, 1)$   
 281 :  $P_{11685} = (4, 12, 10, 1)$   
 282 :  $P_{11722} = (9, 13, 10, 1)$   
 283 :  $P_{11727} = (14, 13, 10, 1)$   
 284 :  $P_{11755} = (10, 14, 10, 1)$   
 285 :  $P_{11759} = (14, 14, 10, 1)$   
 286 :  $P_{11804} = (27, 15, 10, 1)$   
 287 :  $P_{11807} = (30, 15, 10, 1)$   
 288 :  $P_{11817} = (8, 16, 10, 1)$   
 289 :  $P_{11827} = (18, 16, 10, 1)$   
 290 :  $P_{11982} = (13, 21, 10, 1)$   
 291 :  $P_{11987} = (18, 21, 10, 1)$   
 292 :  $P_{12067} = (2, 24, 10, 1)$   
 293 :  $P_{12081} = (16, 24, 10, 1)$   
 294 :  $P_{12140} = (11, 26, 10, 1)$   
 295 :  $P_{12156} = (27, 26, 10, 1)$   
 296 :  $P_{12234} = (9, 29, 10, 1)$   
 297 :  $P_{12255} = (30, 29, 10, 1)$   
 298 :  $P_{12268} = (11, 30, 10, 1)$   
 299 :  $P_{12288} = (31, 30, 10, 1)$   
 300 :  $P_{12355} = (2, 1, 11, 1)$   
 301 :  $P_{12361} = (8, 1, 11, 1)$   
 302 :  $P_{12622} = (13, 9, 11, 1)$   
 303 :  $P_{12624} = (15, 9, 11, 1)$   
 304 :  $P_{12659} = (18, 10, 11, 1)$   
 305 :  $P_{12660} = (19, 10, 11, 1)$   
 306 :  $P_{12682} = (9, 11, 11, 1)$   
 307 :  $P_{12812} = (11, 15, 11, 1)$   
 308 :  $P_{12816} = (15, 15, 11, 1)$   
 309 :  $P_{12906} = (9, 18, 11, 1)$   
 310 :  $P_{12913} = (16, 18, 11, 1)$   
 311 :  $P_{12937} = (8, 19, 11, 1)$

312 :  $P_{12945} = (16, 19, 11, 1)$   
 313 :  $P_{12965} = (4, 20, 11, 1)$   
 314 :  $P_{12988} = (27, 20, 11, 1)$   
 315 :  $P_{13039} = (14, 22, 11, 1)$   
 316 :  $P_{13044} = (19, 22, 11, 1)$   
 317 :  $P_{13059} = (2, 23, 11, 1)$   
 318 :  $P_{13087} = (30, 23, 11, 1)$   
 319 :  $P_{13134} = (13, 25, 11, 1)$   
 320 :  $P_{13152} = (31, 25, 11, 1)$   
 321 :  $P_{13163} = (10, 26, 11, 1)$   
 322 :  $P_{13180} = (27, 26, 11, 1)$   
 323 :  $P_{13199} = (14, 27, 11, 1)$   
 324 :  $P_{13215} = (30, 27, 11, 1)$   
 325 :  $P_{13253} = (4, 29, 11, 1)$   
 326 :  $P_{13267} = (18, 29, 11, 1)$   
 327 :  $P_{13291} = (10, 30, 11, 1)$   
 328 :  $P_{13312} = (31, 30, 11, 1)$   
 329 :  $P_{13464} = (23, 3, 12, 1)$   
 330 :  $P_{13465} = (24, 3, 12, 1)$   
 331 :  $P_{13525} = (20, 5, 12, 1)$   
 332 :  $P_{13534} = (29, 5, 12, 1)$   
 333 :  $P_{13658} = (25, 9, 12, 1)$   
 334 :  $P_{13661} = (28, 9, 12, 1)$   
 335 :  $P_{13668} = (3, 10, 12, 1)$   
 336 :  $P_{13670} = (5, 10, 12, 1)$   
 337 :  $P_{13746} = (17, 12, 12, 1)$   
 338 :  $P_{13789} = (28, 13, 12, 1)$   
 339 :  $P_{13790} = (29, 13, 12, 1)$   
 340 :  $P_{13813} = (20, 14, 12, 1)$   
 341 :  $P_{13815} = (22, 14, 12, 1)$   
 342 :  $P_{13927} = (6, 18, 12, 1)$   
 343 :  $P_{13945} = (24, 18, 12, 1)$   
 344 :  $P_{13958} = (5, 19, 12, 1)$   
 345 :  $P_{13979} = (26, 19, 12, 1)$   
 346 :  $P_{13986} = (1, 20, 12, 1)$   
 347 :  $P_{14010} = (25, 20, 12, 1)$   
 348 :  $P_{14114} = (1, 24, 12, 1)$   
 349 :  $P_{14134} = (21, 24, 12, 1)$   
 350 :  $P_{14189} = (12, 26, 12, 1)$   
 351 :  $P_{14203} = (26, 26, 12, 1)$   
 352 :  $P_{14248} = (7, 28, 12, 1)$   
 353 :  $P_{14264} = (23, 28, 12, 1)$   
 354 :  $P_{14280} = (7, 29, 12, 1)$   
 355 :  $P_{14295} = (22, 29, 12, 1)$   
 356 :  $P_{14308} = (3, 30, 12, 1)$   
 357 :  $P_{14322} = (17, 30, 12, 1)$   
 358 :  $P_{14343} = (6, 31, 12, 1)$   
 359 :  $P_{14358} = (21, 31, 12, 1)$   
 360 :  $P_{14419} = (18, 1, 13, 1)$   
 361 :  $P_{14431} = (30, 1, 13, 1)$   
 362 :  $P_{14481} = (16, 3, 13, 1)$   
 363 :  $P_{14495} = (30, 3, 13, 1)$   
 364 :  $P_{14548} = (19, 5, 13, 1)$   
 365 :  $P_{14556} = (27, 5, 13, 1)$

366 : $P_{14563} = (2, 6, 13, 1)$	420 : $P_{16500} = (19, 2, 15, 1)$
367 : $P_{14570} = (9, 6, 13, 1)$	421 : $P_{16511} = (30, 2, 15, 1)$
368 : $P_{14597} = (4, 7, 13, 1)$	422 : $P_{16515} = (2, 3, 15, 1)$
369 : $P_{14607} = (14, 7, 13, 1)$	423 : $P_{16527} = (14, 3, 15, 1)$
370 : $P_{14635} = (10, 8, 13, 1)$	424 : $P_{16627} = (18, 6, 15, 1)$
371 : $P_{14640} = (15, 8, 13, 1)$	425 : $P_{16636} = (27, 6, 15, 1)$
372 : $P_{14668} = (11, 9, 13, 1)$	426 : $P_{16683} = (10, 8, 15, 1)$
373 : $P_{14672} = (15, 9, 13, 1)$	427 : $P_{16686} = (13, 8, 15, 1)$
374 : $P_{14729} = (8, 11, 13, 1)$	428 : $P_{16716} = (11, 9, 15, 1)$
375 : $P_{14735} = (14, 11, 13, 1)$	429 : $P_{16718} = (13, 9, 15, 1)$
376 : $P_{14761} = (8, 12, 13, 1)$	430 : $P_{16796} = (27, 11, 15, 1)$
377 : $P_{14762} = (9, 12, 13, 1)$	431 : $P_{16800} = (31, 11, 15, 1)$
378 : $P_{14801} = (16, 13, 13, 1)$	432 : $P_{16873} = (8, 14, 15, 1)$
379 : $P_{15051} = (10, 21, 13, 1)$	433 : $P_{16874} = (9, 14, 15, 1)$
380 : $P_{15059} = (18, 21, 13, 1)$	434 : $P_{16908} = (11, 15, 15, 1)$
381 : $P_{15077} = (4, 22, 13, 1)$	435 : $P_{17039} = (14, 19, 15, 1)$
382 : $P_{15104} = (31, 22, 13, 1)$	436 : $P_{17043} = (18, 19, 15, 1)$
383 : $P_{15180} = (11, 25, 13, 1)$	437 : $P_{17130} = (9, 22, 15, 1)$
384 : $P_{15200} = (31, 25, 13, 1)$	438 : $P_{17137} = (16, 22, 15, 1)$
385 : $P_{15246} = (13, 27, 13, 1)$	439 : $P_{17189} = (4, 24, 15, 1)$
386 : $P_{15260} = (27, 27, 13, 1)$	440 : $P_{17204} = (19, 24, 15, 1)$
387 : $P_{15267} = (2, 28, 13, 1)$	441 : $P_{17225} = (8, 25, 15, 1)$
388 : $P_{15284} = (19, 28, 13, 1)$	442 : $P_{17247} = (30, 25, 15, 1)$
389 : $P_{15441} = (16, 1, 14, 1)$	443 : $P_{17347} = (2, 29, 15, 1)$
390 : $P_{15456} = (31, 1, 14, 1)$	444 : $P_{17361} = (16, 29, 15, 1)$
391 : $P_{15491} = (2, 3, 14, 1)$	445 : $P_{17424} = (15, 31, 15, 1)$
392 : $P_{15504} = (15, 3, 14, 1)$	446 : $P_{17440} = (31, 31, 15, 1)$
393 : $P_{15621} = (4, 7, 14, 1)$	447 : $P_{17487} = (14, 1, 16, 1)$
394 : $P_{15630} = (13, 7, 14, 1)$	448 : $P_{17504} = (31, 1, 16, 1)$
395 : $P_{15740} = (27, 10, 14, 1)$	449 : $P_{17550} = (13, 3, 16, 1)$
396 : $P_{15744} = (31, 10, 14, 1)$	450 : $P_{17567} = (30, 3, 16, 1)$
397 : $P_{15753} = (8, 11, 14, 1)$	451 : $P_{17673} = (8, 7, 16, 1)$
398 : $P_{15758} = (13, 11, 14, 1)$	452 : $P_{17696} = (31, 7, 16, 1)$
399 : $P_{15818} = (9, 13, 14, 1)$	453 : $P_{17739} = (10, 9, 16, 1)$
400 : $P_{15819} = (10, 13, 14, 1)$	454 : $P_{17748} = (19, 9, 16, 1)$
401 : $P_{15851} = (10, 14, 14, 1)$	455 : $P_{17870} = (13, 13, 16, 1)$
402 : $P_{16016} = (15, 19, 14, 1)$	456 : $P_{17873} = (16, 13, 16, 1)$
403 : $P_{16019} = (18, 19, 14, 1)$	457 : $P_{17957} = (4, 16, 16, 1)$
404 : $P_{16041} = (8, 20, 14, 1)$	458 : $P_{18003} = (18, 17, 16, 1)$
405 : $P_{16051} = (18, 20, 14, 1)$	459 : $P_{18004} = (19, 17, 16, 1)$
406 : $P_{16108} = (11, 22, 14, 1)$	460 : $P_{18026} = (9, 18, 16, 1)$
407 : $P_{16116} = (19, 22, 14, 1)$	461 : $P_{18028} = (11, 18, 16, 1)$
408 : $P_{16229} = (4, 26, 14, 1)$	462 : $P_{18057} = (8, 19, 16, 1)$
409 : $P_{16241} = (16, 26, 14, 1)$	463 : $P_{18060} = (11, 19, 16, 1)$
410 : $P_{16268} = (11, 27, 14, 1)$	464 : $P_{18140} = (27, 21, 16, 1)$
411 : $P_{16287} = (30, 27, 14, 1)$	465 : $P_{18143} = (30, 21, 16, 1)$
412 : $P_{16298} = (9, 28, 14, 1)$	466 : $P_{18154} = (9, 22, 16, 1)$
413 : $P_{16316} = (27, 28, 14, 1)$	467 : $P_{18160} = (15, 22, 16, 1)$
414 : $P_{16367} = (14, 30, 14, 1)$	468 : $P_{18211} = (2, 24, 16, 1)$
415 : $P_{16383} = (30, 30, 14, 1)$	469 : $P_{18219} = (10, 24, 16, 1)$
416 : $P_{16387} = (2, 31, 14, 1)$	470 : $P_{18259} = (18, 25, 16, 1)$
417 : $P_{16404} = (19, 31, 14, 1)$	471 : $P_{18268} = (27, 25, 16, 1)$
418 : $P_{16453} = (4, 1, 15, 1)$	472 : $P_{18277} = (4, 26, 16, 1)$
419 : $P_{16459} = (10, 1, 15, 1)$	473 : $P_{18287} = (14, 26, 16, 1)$



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475 : $P_{18384} = (15, 29, 16, 1)$	529 : $P_{20174} = (13, 21, 18, 1)$
476 : $P_{18567} = (6, 3, 17, 1)$	530 : $P_{20305} = (16, 25, 18, 1)$
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478 : $P_{18658} = (1, 6, 17, 1)$	532 : $P_{20421} = (4, 29, 18, 1)$
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482 : $P_{18791} = (6, 10, 17, 1)$	536 : $P_{20554} = (9, 1, 19, 1)$
483 : $P_{18814} = (29, 10, 17, 1)$	537 : $P_{20572} = (27, 1, 19, 1)$
484 : $P_{18861} = (12, 12, 17, 1)$	538 : $P_{20592} = (15, 2, 19, 1)$
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486 : $P_{18918} = (5, 14, 17, 1)$	540 : $P_{20649} = (8, 4, 19, 1)$
487 : $P_{18939} = (26, 14, 17, 1)$	541 : $P_{20672} = (31, 4, 19, 1)$
488 : $P_{18952} = (7, 15, 17, 1)$	542 : $P_{20686} = (13, 5, 19, 1)$
489 : $P_{18970} = (25, 15, 17, 1)$	543 : $P_{20700} = (27, 5, 19, 1)$
490 : $P_{18997} = (20, 16, 17, 1)$	544 : $P_{20715} = (10, 6, 19, 1)$
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498 : $P_{19165} = (28, 21, 17, 1)$	552 : $P_{21073} = (16, 17, 19, 1)$
499 : $P_{19202} = (1, 23, 17, 1)$	553 : $P_{21075} = (18, 17, 19, 1)$
500 : $P_{19208} = (7, 23, 17, 1)$	554 : $P_{21151} = (30, 19, 19, 1)$
501 : $P_{19320} = (23, 26, 17, 1)$	555 : $P_{21228} = (11, 22, 19, 1)$
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503 : $P_{19428} = (3, 30, 17, 1)$	557 : $P_{21285} = (4, 24, 19, 1)$
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505 : $P_{19480} = (23, 31, 17, 1)$	559 : $P_{21411} = (2, 28, 19, 1)$
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507 : $P_{19534} = (13, 1, 18, 1)$	561 : $P_{21477} = (4, 30, 19, 1)$
508 : $P_{19551} = (30, 1, 18, 1)$	562 : $P_{21482} = (9, 30, 19, 1)$
509 : $P_{19696} = (15, 6, 18, 1)$	563 : $P_{21507} = (2, 31, 19, 1)$
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511 : $P_{19786} = (9, 9, 18, 1)$	565 : $P_{21602} = (1, 2, 20, 1)$
512 : $P_{19795} = (18, 9, 18, 1)$	566 : $P_{21624} = (23, 2, 20, 1)$
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514 : $P_{19828} = (19, 10, 18, 1)$	568 : $P_{21650} = (17, 3, 20, 1)$
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516 : $P_{19967} = (30, 14, 18, 1)$	570 : $P_{21726} = (29, 5, 20, 1)$
517 : $P_{19971} = (2, 15, 18, 1)$	571 : $P_{21734} = (5, 6, 20, 1)$
518 : $P_{20000} = (31, 15, 18, 1)$	572 : $P_{21752} = (23, 6, 20, 1)$
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 609 :  $P_{23112} = (7, 17, 21, 1)$   
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 671 :  $P_{25246} = (29, 19, 23, 1)$   
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 816 :  $P_{30042} = (25, 9, 28, 1)$   
 817 :  $P_{30118} = (5, 12, 28, 1)$   
 818 :  $P_{30134} = (21, 12, 28, 1)$   
 819 :  $P_{30157} = (12, 13, 28, 1)$   
 820 :  $P_{30174} = (29, 13, 28, 1)$   
 821 :  $P_{30214} = (5, 15, 28, 1)$   
 822 :  $P_{30231} = (22, 15, 28, 1)$   
 823 :  $P_{30325} = (20, 18, 28, 1)$   
 824 :  $P_{30331} = (26, 18, 28, 1)$   
 825 :  $P_{30418} = (17, 21, 28, 1)$   
 826 :  $P_{30425} = (24, 21, 28, 1)$   
 827 :  $P_{30488} = (23, 23, 28, 1)$   
 828 :  $P_{30493} = (28, 23, 28, 1)$   
 829 :  $P_{30500} = (3, 24, 28, 1)$   
 830 :  $P_{30504} = (7, 24, 28, 1)$   
 831 :  $P_{30532} = (3, 25, 28, 1)$   
 832 :  $P_{30535} = (6, 25, 28, 1)$   
 833 :  $P_{30578} = (17, 26, 28, 1)$   
 834 :  $P_{30584} = (23, 26, 28, 1)$   
 835 :  $P_{30594} = (1, 27, 28, 1)$   
 836 :  $P_{30599} = (6, 27, 28, 1)$   
 837 :  $P_{30646} = (21, 28, 28, 1)$   
 838 :  $P_{30681} = (24, 29, 28, 1)$   
 839 :  $P_{30682} = (25, 29, 28, 1)$   
 840 :  $P_{30709} = (20, 30, 28, 1)$   
 841 :  $P_{30711} = (22, 30, 28, 1)$   
 842 :  $P_{30882} = (1, 4, 29, 1)$   
 843 :  $P_{30905} = (24, 4, 29, 1)$   
 844 :  $P_{30925} = (12, 5, 29, 1)$   
 845 :  $P_{30933} = (20, 5, 29, 1)$   
 846 :  $P_{30952} = (7, 6, 29, 1)$   
 847 :  $P_{30973} = (28, 6, 29, 1)$   
 848 :  $P_{31044} = (3, 9, 29, 1)$   
 849 :  $P_{31064} = (23, 9, 29, 1)$   
 850 :  $P_{31079} = (6, 10, 29, 1)$   
 851 :  $P_{31090} = (17, 10, 29, 1)$

852 :  $P_{31108} = (3, 11, 29, 1)$   
 853 :  $P_{31126} = (21, 11, 29, 1)$   
 854 :  $P_{31181} = (12, 13, 29, 1)$   
 855 :  $P_{31197} = (28, 13, 29, 1)$   
 856 :  $P_{31207} = (6, 14, 29, 1)$   
 857 :  $P_{31222} = (21, 14, 29, 1)$   
 858 :  $P_{31319} = (22, 17, 29, 1)$   
 859 :  $P_{31323} = (26, 17, 29, 1)$   
 860 :  $P_{31384} = (23, 19, 29, 1)$   
 861 :  $P_{31386} = (25, 19, 29, 1)$   
 862 :  $P_{31410} = (17, 20, 29, 1)$   
 863 :  $P_{31417} = (24, 20, 29, 1)$   
 864 :  $P_{31479} = (22, 22, 29, 1)$   
 865 :  $P_{31486} = (29, 22, 29, 1)$   
 866 :  $P_{31554} = (1, 25, 29, 1)$   
 867 :  $P_{31558} = (5, 25, 29, 1)$   
 868 :  $P_{31701} = (20, 29, 29, 1)$   
 869 :  $P_{31738} = (25, 30, 29, 1)$   
 870 :  $P_{31739} = (26, 30, 29, 1)$   
 871 :  $P_{31750} = (5, 31, 29, 1)$   
 872 :  $P_{31752} = (7, 31, 29, 1)$   
 873 :  $P_{31822} = (13, 1, 30, 1)$   
 874 :  $P_{31827} = (18, 1, 30, 1)$   
 875 :  $P_{31856} = (15, 2, 30, 1)$   
 876 :  $P_{31860} = (19, 2, 30, 1)$   
 877 :  $P_{31886} = (13, 3, 30, 1)$   
 878 :  $P_{31889} = (16, 3, 30, 1)$   
 879 :  $P_{31941} = (4, 5, 30, 1)$   
 880 :  $P_{31968} = (31, 5, 30, 1)$   
 881 :  $P_{32042} = (9, 8, 30, 1)$   
 882 :  $P_{32064} = (31, 8, 30, 1)$   
 883 :  $P_{32227} = (2, 14, 30, 1)$   
 884 :  $P_{32243} = (18, 14, 30, 1)$   
 885 :  $P_{32267} = (10, 15, 30, 1)$   
 886 :  $P_{32284} = (27, 15, 30, 1)$   
 887 :  $P_{32357} = (4, 18, 30, 1)$   
 888 :  $P_{32361} = (8, 18, 30, 1)$   
 889 :  $P_{32404} = (19, 19, 30, 1)$   
 890 :  $P_{32415} = (30, 19, 30, 1)$   
 891 :  $P_{32465} = (16, 21, 30, 1)$   
 892 :  $P_{32476} = (27, 21, 30, 1)$   
 893 :  $P_{32515} = (2, 23, 30, 1)$   
 894 :  $P_{32524} = (11, 23, 30, 1)$   
 895 :  $P_{32585} = (8, 25, 30, 1)$   
 896 :  $P_{32592} = (15, 25, 30, 1)$   
 897 :  $P_{32652} = (11, 27, 30, 1)$   
 898 :  $P_{32655} = (14, 27, 30, 1)$   
 899 :  $P_{32714} = (9, 29, 30, 1)$   
 900 :  $P_{32715} = (10, 29, 30, 1)$   
 901 :  $P_{32751} = (14, 30, 30, 1)$   
 902 :  $P_{32847} = (14, 1, 31, 1)$   
 903 :  $P_{32849} = (16, 1, 31, 1)$   
 904 :  $P_{32937} = (8, 4, 31, 1)$   
 905 :  $P_{32948} = (19, 4, 31, 1)$

906 : $P_{32965} = (4, 5, 31, 1)$	919 : $P_{33299} = (18, 15, 31, 1)$
907 : $P_{32991} = (30, 5, 31, 1)$	920 : $P_{33395} = (18, 18, 31, 1)$
908 : $P_{33003} = (10, 6, 31, 1)$	921 : $P_{33408} = (31, 18, 31, 1)$
909 : $P_{33012} = (19, 6, 31, 1)$	922 : $P_{33443} = (2, 20, 31, 1)$
910 : $P_{33033} = (8, 7, 31, 1)$	923 : $P_{33450} = (9, 20, 31, 1)$
911 : $P_{33041} = (16, 7, 31, 1)$	924 : $P_{33509} = (4, 22, 31, 1)$
912 : $P_{33066} = (9, 8, 31, 1)$	925 : $P_{33518} = (13, 22, 31, 1)$
913 : $P_{33087} = (30, 8, 31, 1)$	926 : $P_{33612} = (11, 25, 31, 1)$
914 : $P_{33135} = (14, 10, 31, 1)$	927 : $P_{33614} = (13, 25, 31, 1)$
915 : $P_{33148} = (27, 10, 31, 1)$	928 : $P_{33771} = (10, 30, 31, 1)$
916 : $P_{33168} = (15, 11, 31, 1)$	929 : $P_{33772} = (11, 30, 31, 1)$
917 : $P_{33180} = (27, 11, 31, 1)$	930 : $P_{33808} = (15, 31, 31, 1)$
918 : $P_{33283} = (2, 15, 31, 1)$	

## Line Intersection Graph

	0	1	2	3	4	5
0	0	1	1	1	0	0
1	1	0	1	0	0	1
2	1	1	0	0	1	0
3	1	0	0	0	1	1
4	0	0	1	1	0	1
5	0	1	0	1	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	$\ell_1$	$\ell_2$	$\ell_3$
in point	$P_5$	$P_1$	$P_0$

Line 1 intersects

Line	$\ell_0$	$\ell_2$	$\ell_5$
in point	$P_5$	$P_{67}$	$P_{36}$

Line 2 intersects

Line	$\ell_0$	$\ell_1$	$\ell_4$
in point	$P_1$	$P_{67}$	$P_2$

Line 3 intersects

Line	$\ell_0$	$\ell_4$	$\ell_5$
in point	$P_0$	$P_3$	$P_3$

Line 4 intersects

Line	$\ell_2$	$\ell_3$	$\ell_5$
in point	$P_2$	$P_3$	$P_3$

Line 5 intersects

Line	$\ell_1$	$\ell_3$	$\ell_4$
in point	$P_{36}$	$P_3$	$P_3$

The surface has 1121 points:

Too many to print.