

# Rank-65919 over GF(32)

January 15, 2021

## The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(32) is -2078210011

## General information

Number of lines	21
Number of points	1217
Number of singular points	1
Number of Eckardt points	0
Number of double points	75
Number of single points	537
Number of points off lines	604
Number of Hesse planes	0
Number of axes	0
Type of points on lines	$33^{21}$
Type of lines on points	$6, 2^{75}, 1^{537}, 0^{604}$

## Singular Points

The surface has 1 singular points:

$$0 : P_{2083} = \mathbf{P}(1, 0, 1, 1) = \mathbf{P}(1, 0, 1, 1)$$

## The 21 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1025} = \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1025} = \mathbf{Pl}(0, 0, 1, 0, 1, 0)_{1152}$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 1 & 0 & \eta & \eta \\ 0 & 1 & \eta^{29} & \eta^{22} \end{bmatrix}_{70443} = \begin{bmatrix} 1 & 0 & 2 & 2 \\ 0 & 1 & 9 & 21 \end{bmatrix}_{70443} = \mathbf{Pl}(3, 28, 1, 1, 24, 1)_{826003} \\
\ell_2 &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{28} & \eta^6 \end{bmatrix}_{35223} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 22 & 10 \end{bmatrix}_{35223} = \mathbf{Pl}(3, 28, 1, 1, 10, 1)_{367730} \\
\ell_3 &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{25} & \eta^{12} \end{bmatrix}_{35354} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 25 & 14 \end{bmatrix}_{35354} = \mathbf{Pl}(5, 23, 1, 1, 14, 1)_{498893} \\
\ell_4 &= \begin{bmatrix} 1 & 0 & \eta^2 & \eta^2 \\ 0 & 1 & \eta^{27} & \eta^{13} \end{bmatrix}_{140431} = \begin{bmatrix} 1 & 0 & 4 & 4 \\ 0 & 1 & 11 & 28 \end{bmatrix}_{140431} = \mathbf{Pl}(5, 23, 1, 1, 7, 1)_{269772} \\
\ell_5 &= \begin{bmatrix} 1 & 0 & \eta^{19} & \eta^9 \\ 0 & 1 & \eta & \eta^2 \end{bmatrix}_{885896} = \begin{bmatrix} 1 & 0 & 6 & 26 \\ 0 & 1 & 2 & 4 \end{bmatrix}_{885896} = \mathbf{Pl}(24, 17, 17, 24, 29, 1)_{1004336} \\
\ell_6 &= \begin{bmatrix} 1 & 0 & \eta^{19} & \eta^{13} \\ 0 & 1 & \eta^{18} & \eta^{17} \end{bmatrix}_{954025} = \begin{bmatrix} 1 & 0 & 6 & 28 \\ 0 & 1 & 3 & 19 \end{bmatrix}_{954025} = \mathbf{Pl}(19, 29, 10, 25, 9, 1)_{343442} \\
\ell_7 &= \begin{bmatrix} 1 & 0 & \eta^8 & \eta^8 \\ 0 & 1 & \eta^{15} & \eta^{21} \end{bmatrix}_{454252} = \begin{bmatrix} 1 & 0 & 13 & 13 \\ 0 & 1 & 31 & 24 \end{bmatrix}_{454252} = \mathbf{Pl}(12, 7, 1, 1, 28, 1)_{957111} \\
\ell_8 &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^7 & \eta^{17} \end{bmatrix}_{35509} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 20 & 19 \end{bmatrix}_{35509} = \mathbf{Pl}(12, 7, 1, 1, 19, 1)_{662456} \\
\ell_9 &= \begin{bmatrix} 1 & 0 & \eta^4 & \eta^4 \\ 0 & 1 & \eta^{23} & \eta^{26} \end{bmatrix}_{558847} = \begin{bmatrix} 1 & 0 & 16 & 16 \\ 0 & 1 & 15 & 23 \end{bmatrix}_{558847} = \mathbf{Pl}(17, 24, 1, 1, 21, 1)_{727871} \\
\ell_{10} &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{19} & \eta^{24} \end{bmatrix}_{35847} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 6 & 30 \end{bmatrix}_{35847} = \mathbf{Pl}(17, 24, 1, 1, 30, 1)_{1022526} \\
\ell_{11} &= \begin{bmatrix} 1 & 0 & \eta^7 & \eta^{18} \\ 0 & 1 & \eta^2 & \eta^4 \end{bmatrix}_{123128} = \begin{bmatrix} 1 & 0 & 20 & 3 \\ 0 & 1 & 4 & 16 \end{bmatrix}_{123128} = \mathbf{Pl}(7, 12, 12, 7, 22, 1)_{770951} \\
\ell_{12} &= \begin{bmatrix} 1 & 0 & \eta^7 & \eta^{26} \\ 0 & 1 & \eta^5 & \eta^3 \end{bmatrix}_{799353} = \begin{bmatrix} 1 & 0 & 20 & 23 \\ 0 & 1 & 5 & 8 \end{bmatrix}_{799353} = \mathbf{Pl}(8, 22, 14, 6, 11, 1)_{412654} \\
\ell_{13} &= \begin{bmatrix} 1 & 0 & \eta^{28} & \eta^{10} \\ 0 & 1 & \eta^8 & \eta^{16} \end{bmatrix}_{599139} = \begin{bmatrix} 1 & 0 & 22 & 17 \\ 0 & 1 & 13 & 27 \end{bmatrix}_{599139} = \mathbf{Pl}(28, 3, 3, 28, 6, 1)_{238175} \\
\ell_{14} &= \begin{bmatrix} 1 & 0 & \eta^{28} & \eta^{11} \\ 0 & 1 & \eta^{20} & \eta^{12} \end{bmatrix}_{260482} = \begin{bmatrix} 1 & 0 & 22 & 7 \\ 0 & 1 & 12 & 14 \end{bmatrix}_{260482} = \mathbf{Pl}(14, 6, 19, 29, 31, 1)_{1071937} \\
\ell_{15} &= \begin{bmatrix} 1 & 0 & \eta^{25} & \eta^{20} \\ 0 & 1 & \eta^{16} & \eta \end{bmatrix}_{432404} = \begin{bmatrix} 1 & 0 & 25 & 12 \\ 0 & 1 & 27 & 2 \end{bmatrix}_{432404} = \mathbf{Pl}(23, 5, 5, 23, 20, 1)_{698706} \\
\ell_{16} &= \begin{bmatrix} 1 & 0 & \eta^{25} & \eta^{22} \\ 0 & 1 & \eta^9 & \eta^{24} \end{bmatrix}_{737715} = \begin{bmatrix} 1 & 0 & 25 & 21 \\ 0 & 1 & 26 & 30 \end{bmatrix}_{737715} = \mathbf{Pl}(30, 20, 8, 22, 18, 1)_{636372} \\
\ell_{17} &= \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{14} & \eta^3 \end{bmatrix}_{35166} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 29 & 8 \end{bmatrix}_{35166} = \mathbf{Pl}(26, 21, 1, 1, 8, 1)_{301847} \\
\ell_{18} &= \begin{bmatrix} 1 & 0 & \eta^{16} & \eta^{16} \\ 0 & 1 & \eta^{30} & \eta^{11} \end{bmatrix}_{942029} = \begin{bmatrix} 1 & 0 & 27 & 27 \\ 0 & 1 & 18 & 7 \end{bmatrix}_{942029} = \mathbf{Pl}(26, 21, 1, 1, 23, 1)_{792856} \\
\ell_{19} &= \begin{bmatrix} 1 & 0 & \eta^{14} & \eta^{21} \\ 0 & 1 & \eta^{10} & \eta^6 \end{bmatrix}_{842766} = \begin{bmatrix} 1 & 0 & 29 & 24 \\ 0 & 1 & 17 & 10 \end{bmatrix}_{842766} = \mathbf{Pl}(10, 25, 30, 20, 15, 1)_{557953} \\
\ell_{20} &= \begin{bmatrix} 1 & 0 & \eta^{14} & \eta^5 \\ 0 & 1 & \eta^4 & \eta^8 \end{bmatrix}_{200205} = \begin{bmatrix} 1 & 0 & 29 & 5 \\ 0 & 1 & 16 & 13 \end{bmatrix}_{200205} = \mathbf{Pl}(21, 26, 26, 21, 25, 1)_{881480}
\end{aligned}$$

Rank of lines: ( 1025, 70443, 35223, 35354, 140431, 885896, 954025, 454252, 35509, 558847, 35847, 123128, 799353, 599139, 260482, 432404, 737715, 35166, 942029, 842766, 200205 )

Rank of points on Klein quadric: ( 1152, 826003, 367730, 498893, 269772, 1004336, 343442, 957111, 662456, 727871, 1022526, 770951, 412654, 238175, 1071937, 698706, 636372, 301847, 792856, 557953, 881480 )

## Eckardt Points

The surface has 0 Eckardt points:

## Double Points

The surface has 75 Double points:

The double points on the surface are:

$$\begin{aligned} P_{2100} &= (18, 0, 1, 1) = \ell_0 \cap \ell_1 \\ P_{2091} &= (9, 0, 1, 1) = \ell_0 \cap \ell_4 \\ P_{2097} &= (15, 0, 1, 1) = \ell_0 \cap \ell_7 \\ P_{2093} &= (11, 0, 1, 1) = \ell_0 \cap \ell_9 \\ P_{2113} &= (31, 0, 1, 1) = \ell_0 \cap \ell_{18} \\ P_{1185} &= (31, 3, 0, 1) = \ell_1 \cap \ell_2 \\ P_{20012} &= (11, 16, 18, 1) = \ell_1 \cap \ell_{12} \\ P_{15013} &= (4, 20, 13, 1) = \ell_1 \cap \ell_{13} \\ P_{23374} &= (13, 25, 21, 1) = \ell_1 \cap \ell_{15} \\ P_{11062} &= (21, 24, 9, 1) = \ell_1 \cap \ell_{16} \\ P_{30795} &= (10, 1, 29, 1) = \ell_1 \cap \ell_{19} \\ P_{29800} &= (7, 2, 28, 1) = \ell_1 \cap \ell_{20} \\ P_{30796} &= (11, 1, 29, 1) = \ell_2 \cap \ell_5 \\ P_{5641} &= (8, 15, 4, 1) = \ell_2 \cap \ell_6 \\ P_{6583} &= (22, 12, 5, 1) = \ell_2 \cap \ell_{11} \\ P_{3271} &= (6, 5, 2, 1) = \ell_2 \cap \ell_{14} \\ P_{1236} &= (18, 5, 0, 1) = \ell_3 \cap \ell_4 \\ P_{23632} &= (15, 1, 22, 1) = \ell_3 \cap \ell_{11} \\ P_{18443} &= (10, 31, 16, 1) = \ell_3 \cap \ell_{12} \\ P_{5717} &= (20, 17, 4, 1) = \ell_3 \cap \ell_{16} \\ P_{19322} &= (25, 26, 17, 1) = \ell_3 \cap \ell_{20} \\ P_{29948} &= (27, 6, 28, 1) = \ell_4 \cap \ell_5 \\ P_{12573} &= (28, 7, 11, 1) = \ell_4 \cap \ell_6 \\ P_{24758} &= (21, 4, 23, 1) = \ell_4 \cap \ell_{13} \\ P_{23631} &= (14, 1, 22, 1) = \ell_4 \cap \ell_{14} \\ P_{29649} &= (16, 29, 27, 1) = \ell_4 \cap \ell_{15} \\ P_{10704} &= (15, 13, 9, 1) = \ell_4 \cap \ell_{19} \\ P_{8664} &= (23, 13, 7, 1) = \ell_5 \cap \ell_7 \\ P_{3822} &= (13, 22, 2, 1) = \ell_5 \cap \ell_9 \\ P_{6291} &= (18, 3, 5, 1) = \ell_5 \cap \ell_{12} \\ P_{10349} &= (12, 2, 9, 1) = \ell_5 \cap \ell_{13} \\ P_{4702} &= (29, 17, 3, 1) = \ell_5 \cap \ell_{17} \\ P_{16932} &= (3, 16, 15, 1) = \ell_5 \cap \ell_{20} \\ P_{7252} &= (19, 1, 6, 1) = \ell_6 \cap \ell_7 \\ P_{17854} &= (29, 12, 16, 1) = \ell_6 \cap \ell_{10} \\ P_{20698} &= (25, 5, 19, 1) = \ell_6 \cap \ell_{12} \\ P_{4992} &= (31, 26, 3, 1) = \ell_6 \cap \ell_{15} \\ P_{31895} &= (22, 3, 30, 1) = \ell_6 \cap \ell_{16} \end{aligned}$$

$$\begin{aligned} P_{32938} &= (9, 4, 31, 1) = \ell_6 \cap \ell_{18} \\ P_{1453} &= (11, 12, 0, 1) = \ell_7 \cap \ell_8 \\ P_{5980} &= (27, 25, 4, 1) = \ell_7 \cap \ell_{11} \\ P_{16499} &= (18, 2, 15, 1) = \ell_7 \cap \ell_{16} \\ P_{33721} &= (24, 28, 31, 1) = \ell_7 \cap \ell_{19} \\ P_{26565} &= (4, 29, 24, 1) = \ell_7 \cap \ell_{20} \\ P_{15223} &= (22, 26, 13, 1) = \ell_8 \cap \ell_{12} \\ P_{7251} &= (18, 1, 6, 1) = \ell_8 \cap \ell_{13} \\ P_{29023} &= (30, 9, 27, 1) = \ell_8 \cap \ell_{14} \\ P_{27861} &= (20, 5, 26, 1) = \ell_8 \cap \ell_{15} \\ P_{1611} &= (9, 17, 0, 1) = \ell_9 \cap \ell_{10} \\ P_{25251} &= (2, 20, 23, 1) = \ell_9 \cap \ell_{11} \\ P_{17112} &= (23, 21, 15, 1) = \ell_9 \cap \ell_{12} \\ P_{13216} &= (31, 27, 11, 1) = \ell_9 \cap \ell_{14} \\ P_{26173} &= (28, 16, 24, 1) = \ell_9 \cap \ell_{15} \\ P_{26719} &= (30, 1, 25, 1) = \ell_9 \cap \ell_{16} \\ P_{13447} &= (6, 3, 12, 1) = \ell_{10} \cap \ell_{13} \\ P_{14959} &= (14, 18, 13, 1) = \ell_{10} \cap \ell_{19} \\ P_{26720} &= (31, 1, 25, 1) = \ell_{10} \cap \ell_{20} \\ P_{33222} &= (5, 13, 31, 1) = \ell_{11} \cap \ell_{13} \\ P_{12475} &= (26, 4, 11, 1) = \ell_{11} \cap \ell_{15} \\ P_{23449} &= (24, 27, 21, 1) = \ell_{11} \cap \ell_{18} \\ P_{18634} &= (9, 5, 17, 1) = \ell_{11} \cap \ell_{19} \\ P_{21577} &= (8, 1, 20, 1) = \ell_{12} \cap \ell_{18} \\ P_{9799} &= (6, 17, 8, 1) = \ell_{12} \cap \ell_{19} \\ P_{28080} &= (15, 12, 26, 1) = \ell_{13} \cap \ell_{16} \\ P_{8945} &= (16, 22, 7, 1) = \ell_{13} \cap \ell_{18} \\ P_{16254} &= (29, 26, 14, 1) = \ell_{14} \cap \ell_{16} \\ P_{20232} &= (7, 23, 18, 1) = \ell_{14} \cap \ell_{18} \\ P_{11701} &= (20, 12, 10, 1) = \ell_{14} \cap \ell_{19} \\ P_{13900} &= (11, 17, 12, 1) = \ell_{14} \cap \ell_{20} \\ P_{21578} &= (9, 1, 20, 1) = \ell_{15} \cap \ell_{17} \\ P_{20370} &= (17, 27, 18, 1) = \ell_{15} \cap \ell_{20} \\ P_{3476} &= (19, 11, 2, 1) = \ell_{16} \cap \ell_{17} \\ P_{1905} &= (15, 26, 0, 1) = \ell_{17} \cap \ell_{18} \\ P_{28826} &= (25, 3, 27, 1) = \ell_{17} \cap \ell_{19} \\ P_{17635} &= (2, 6, 16, 1) = \ell_{18} \cap \ell_{20} \end{aligned}$$

## Single Points

The surface has 537 single points:

The single points on the surface are:

0 :  $P_0 = (1, 0, 0, 0)$  lies on line  $\ell_0$   
 1 :  $P_{144} = (13, 3, 1, 0)$  lies on line  $\ell_1$   
 2 :  $P_{161} = (30, 3, 1, 0)$  lies on line  $\ell_2$   
 3 :  $P_{214} = (19, 5, 1, 0)$  lies on line  $\ell_3$   
 4 :  $P_{222} = (27, 5, 1, 0)$  lies on line  $\ell_4$   
 5 :  $P_{275} = (16, 7, 1, 0)$  lies on line  $\ell_5$   
 6 :  $P_{290} = (31, 7, 1, 0)$  lies on line  $\ell_6$   
 7 :  $P_{423} = (4, 12, 1, 0)$  lies on line  $\ell_7$   
 8 :  $P_{429} = (10, 12, 1, 0)$  lies on line  $\ell_8$   
 9 :  $P_{581} = (2, 17, 1, 0)$  lies on line  $\ell_9$   
 10 :  $P_{587} = (8, 17, 1, 0)$  lies on line  $\ell_{10}$   
 11 :  $P_{720} = (13, 21, 1, 0)$  lies on line  $\ell_{11}$   
 12 :  $P_{725} = (18, 21, 1, 0)$  lies on line  $\ell_{12}$   
 13 :  $P_{773} = (2, 23, 1, 0)$  lies on line  $\ell_{13}$   
 14 :  $P_{782} = (11, 23, 1, 0)$  lies on line  $\ell_{14}$   
 15 :  $P_{807} = (4, 24, 1, 0)$  lies on line  $\ell_{15}$   
 16 :  $P_{818} = (15, 24, 1, 0)$  lies on line  $\ell_{16}$   
 17 :  $P_{881} = (14, 26, 1, 0)$  lies on line  $\ell_{17}$   
 18 :  $P_{883} = (16, 26, 1, 0)$  lies on line  $\ell_{18}$   
 19 :  $P_{940} = (9, 28, 1, 0)$  lies on line  $\ell_{19}$   
 20 :  $P_{958} = (27, 28, 1, 0)$  lies on line  $\ell_{20}$   
 21 :  $P_{1292} = (10, 7, 0, 1)$  lies on line  $\ell_{11}$   
 22 :  $P_{1316} = (2, 8, 0, 1)$  lies on line  $\ell_{12}$   
 23 :  $P_{1382} = (4, 10, 0, 1)$  lies on line  $\ell_{19}$   
 24 :  $P_{1522} = (16, 14, 0, 1)$  lies on line  $\ell_{14}$   
 25 :  $P_{1693} = (27, 19, 0, 1)$  lies on line  $\ell_6$   
 26 :  $P_{1744} = (14, 21, 0, 1)$  lies on line  $\ell_{20}$   
 27 :  $P_{1813} = (19, 23, 0, 1)$  lies on line  $\ell_{15}$   
 28 :  $P_{1834} = (8, 24, 0, 1)$  lies on line  $\ell_5$   
 29 :  $P_{1984} = (30, 28, 0, 1)$  lies on line  $\ell_{13}$   
 30 :  $P_{2031} = (13, 30, 0, 1)$  lies on line  $\ell_{16}$   
 31 :  $P_{2082} = (0, 0, 1, 1)$  lies on line  $\ell_0$   
 32 :  $P_{2084} = (2, 0, 1, 1)$  lies on line  $\ell_0$   
 33 :  $P_{2085} = (3, 0, 1, 1)$  lies on line  $\ell_0$   
 34 :  $P_{2086} = (4, 0, 1, 1)$  lies on line  $\ell_0$   
 35 :  $P_{2087} = (5, 0, 1, 1)$  lies on line  $\ell_0$   
 36 :  $P_{2088} = (6, 0, 1, 1)$  lies on line  $\ell_0$   
 37 :  $P_{2089} = (7, 0, 1, 1)$  lies on line  $\ell_0$   
 38 :  $P_{2090} = (8, 0, 1, 1)$  lies on line  $\ell_0$   
 39 :  $P_{2092} = (10, 0, 1, 1)$  lies on line  $\ell_0$   
 40 :  $P_{2094} = (12, 0, 1, 1)$  lies on line  $\ell_0$   
 41 :  $P_{2095} = (13, 0, 1, 1)$  lies on line  $\ell_0$   
 42 :  $P_{2096} = (14, 0, 1, 1)$  lies on line  $\ell_0$   
 43 :  $P_{2098} = (16, 0, 1, 1)$  lies on line  $\ell_0$   
 44 :  $P_{2099} = (17, 0, 1, 1)$  lies on line  $\ell_0$   
 45 :  $P_{2101} = (19, 0, 1, 1)$  lies on line  $\ell_0$   
 46 :  $P_{2102} = (20, 0, 1, 1)$  lies on line  $\ell_0$   
 47 :  $P_{2103} = (21, 0, 1, 1)$  lies on line  $\ell_0$   
 48 :  $P_{2104} = (22, 0, 1, 1)$  lies on line  $\ell_0$   
 49 :  $P_{2105} = (23, 0, 1, 1)$  lies on line  $\ell_0$   
 50 :  $P_{2106} = (24, 0, 1, 1)$  lies on line  $\ell_0$   
 51 :  $P_{2107} = (25, 0, 1, 1)$  lies on line  $\ell_0$   
 52 :  $P_{2108} = (26, 0, 1, 1)$  lies on line  $\ell_0$   
 53 :  $P_{2109} = (27, 0, 1, 1)$  lies on line  $\ell_0$

54 :  $P_{2110} = (28, 0, 1, 1)$  lies on line  $\ell_0$   
 55 :  $P_{2111} = (29, 0, 1, 1)$  lies on line  $\ell_0$   
 56 :  $P_{2112} = (30, 0, 1, 1)$  lies on line  $\ell_0$   
 57 :  $P_{2275} = (2, 6, 1, 1)$  lies on line  $\ell_{16}$   
 58 :  $P_{2390} = (21, 9, 1, 1)$  lies on line  $\ell_{20}$   
 59 :  $P_{2461} = (28, 11, 1, 1)$  lies on line  $\ell_{13}$   
 60 :  $P_{2584} = (23, 15, 1, 1)$  lies on line  $\ell_{15}$   
 61 :  $P_{2664} = (7, 18, 1, 1)$  lies on line  $\ell_{11}$   
 62 :  $P_{2725} = (4, 20, 1, 1)$  lies on line  $\ell_6$   
 63 :  $P_{2798} = (13, 22, 1, 1)$  lies on line  $\ell_{19}$   
 64 :  $P_{2908} = (27, 25, 1, 1)$  lies on line  $\ell_{14}$   
 65 :  $P_{3025} = (16, 29, 1, 1)$  lies on line  $\ell_{12}$   
 66 :  $P_{3097} = (24, 31, 1, 1)$  lies on line  $\ell_5$   
 67 :  $P_{3196} = (27, 2, 2, 1)$  lies on line  $\ell_{15}$   
 68 :  $P_{3270} = (5, 5, 2, 1)$  lies on line  $\ell_1$   
 69 :  $P_{3332} = (3, 7, 2, 1)$  lies on line  $\ell_{12}$   
 70 :  $P_{3377} = (16, 8, 2, 1)$  lies on line  $\ell_{11}$   
 71 :  $P_{3390} = (29, 8, 2, 1)$  lies on line  $\ell_{20}$   
 72 :  $P_{3467} = (10, 11, 2, 1)$  lies on line  $\ell_{18}$   
 73 :  $P_{3586} = (1, 15, 2, 1)$  lies on line  $\ell_4$   
 74 :  $P_{3602} = (17, 15, 2, 1)$  lies on line  $\ell_3$   
 75 :  $P_{3748} = (3, 20, 2, 1)$  lies on line  $\ell_7$   
 76 :  $P_{3776} = (31, 20, 2, 1)$  lies on line  $\ell_8$   
 77 :  $P_{3834} = (25, 22, 2, 1)$  lies on line  $\ell_{10}$   
 78 :  $P_{3863} = (22, 23, 2, 1)$  lies on line  $\ell_{19}$   
 79 :  $P_{3867} = (26, 23, 2, 1)$  lies on line  $\ell_{13}$   
 80 :  $P_{4033} = (0, 29, 2, 1)$  lies on line  $\ell_6$   
 81 :  $P_{4153} = (24, 0, 3, 1)$  lies on line  $\ell_{13}$   
 82 :  $P_{4329} = (8, 6, 3, 1)$  lies on line  $\ell_1$   
 83 :  $P_{4345} = (24, 6, 3, 1)$  lies on line  $\ell_2$   
 84 :  $P_{4368} = (15, 7, 3, 1)$  lies on line  $\ell_9$   
 85 :  $P_{4370} = (17, 7, 3, 1)$  lies on line  $\ell_{10}$   
 86 :  $P_{4451} = (2, 10, 3, 1)$  lies on line  $\ell_3$   
 87 :  $P_{4475} = (26, 10, 3, 1)$  lies on line  $\ell_4$   
 88 :  $P_{4512} = (31, 11, 3, 1)$  lies on line  $\ell_{19}$   
 89 :  $P_{4699} = (26, 17, 3, 1)$  lies on line  $\ell_{18}$   
 90 :  $P_{4718} = (13, 18, 3, 1)$  lies on line  $\ell_{14}$   
 91 :  $P_{4722} = (17, 18, 3, 1)$  lies on line  $\ell_{12}$   
 92 :  $P_{4765} = (28, 19, 3, 1)$  lies on line  $\ell_{16}$   
 93 :  $P_{4775} = (6, 20, 3, 1)$  lies on line  $\ell_{20}$   
 94 :  $P_{4904} = (7, 24, 3, 1)$  lies on line  $\ell_7$   
 95 :  $P_{4918} = (21, 24, 3, 1)$  lies on line  $\ell_8$   
 96 :  $P_{5086} = (29, 29, 3, 1)$  lies on line  $\ell_{11}$   
 97 :  $P_{5283} = (2, 4, 4, 1)$  lies on line  $\ell_5$   
 98 :  $P_{5486} = (13, 10, 4, 1)$  lies on line  $\ell_{20}$   
 99 :  $P_{5495} = (22, 10, 4, 1)$  lies on line  $\ell_{13}$   
 100 :  $P_{5647} = (14, 15, 4, 1)$  lies on line  $\ell_1$   
 101 :  $P_{5714} = (17, 17, 4, 1)$  lies on line  $\ell_4$   
 102 :  $P_{5830} = (5, 21, 4, 1)$  lies on line  $\ell_{19}$   
 103 :  $P_{5857} = (0, 22, 4, 1)$  lies on line  $\ell_{12}$   
 104 :  $P_{5924} = (3, 24, 4, 1)$  lies on line  $\ell_{15}$   
 105 :  $P_{5946} = (25, 24, 4, 1)$  lies on line  $\ell_{14}$   
 106 :  $P_{5959} = (6, 25, 4, 1)$  lies on line  $\ell_8$   
 107 :  $P_{6086} = (5, 29, 4, 1)$  lies on line  $\ell_{18}$

108 :  $P_{6099} = (18, 29, 4, 1)$  lies on line  $\ell_{17}$   
 109 :  $P_{6146} = (1, 31, 4, 1)$  lies on line  $\ell_9$   
 110 :  $P_{6157} = (12, 31, 4, 1)$  lies on line  $\ell_{10}$   
 111 :  $P_{6184} = (7, 0, 5, 1)$  lies on line  $\ell_{15}$   
 112 :  $P_{6422} = (21, 7, 5, 1)$  lies on line  $\ell_{18}$   
 113 :  $P_{6429} = (28, 7, 5, 1)$  lies on line  $\ell_{17}$   
 114 :  $P_{6456} = (23, 8, 5, 1)$  lies on line  $\ell_6$   
 115 :  $P_{6477} = (12, 9, 5, 1)$  lies on line  $\ell_{19}$   
 116 :  $P_{6492} = (27, 9, 5, 1)$  lies on line  $\ell_{16}$   
 117 :  $P_{6564} = (3, 12, 5, 1)$  lies on line  $\ell_1$   
 118 :  $P_{6628} = (3, 14, 5, 1)$  lies on line  $\ell_9$   
 119 :  $P_{6629} = (4, 14, 5, 1)$  lies on line  $\ell_{10}$   
 120 :  $P_{6675} = (18, 15, 5, 1)$  lies on line  $\ell_{14}$   
 121 :  $P_{6824} = (7, 20, 5, 1)$  lies on line  $\ell_3$   
 122 :  $P_{6827} = (10, 20, 5, 1)$  lies on line  $\ell_4$   
 123 :  $P_{6861} = (12, 21, 5, 1)$  lies on line  $\ell_8$   
 124 :  $P_{6880} = (31, 21, 5, 1)$  lies on line  $\ell_7$   
 125 :  $P_{6903} = (22, 22, 5, 1)$  lies on line  $\ell_{20}$   
 126 :  $P_{7125} = (20, 29, 5, 1)$  lies on line  $\ell_{13}$   
 127 :  $P_{7339} = (10, 4, 6, 1)$  lies on line  $\ell_{16}$   
 128 :  $P_{7480} = (23, 8, 6, 1)$  lies on line  $\ell_{19}$   
 129 :  $P_{7506} = (17, 9, 6, 1)$  lies on line  $\ell_2$   
 130 :  $P_{7509} = (20, 9, 6, 1)$  lies on line  $\ell_1$   
 131 :  $P_{7528} = (7, 10, 6, 1)$  lies on line  $\ell_5$   
 132 :  $P_{7585} = (0, 12, 6, 1)$  lies on line  $\ell_{18}$   
 133 :  $P_{7599} = (14, 12, 6, 1)$  lies on line  $\ell_{17}$   
 134 :  $P_{7628} = (11, 13, 6, 1)$  lies on line  $\ell_{15}$   
 135 :  $P_{7824} = (15, 19, 6, 1)$  lies on line  $\ell_{14}$   
 136 :  $P_{7906} = (1, 22, 6, 1)$  lies on line  $\ell_{11}$   
 137 :  $P_{7967} = (30, 23, 6, 1)$  lies on line  $\ell_{20}$   
 138 :  $P_{7974} = (5, 24, 6, 1)$  lies on line  $\ell_9$   
 139 :  $P_{7997} = (28, 24, 6, 1)$  lies on line  $\ell_{10}$   
 140 :  $P_{8002} = (1, 25, 6, 1)$  lies on line  $\ell_{12}$   
 141 :  $P_{8067} = (2, 27, 6, 1)$  lies on line  $\ell_4$   
 142 :  $P_{8088} = (23, 27, 6, 1)$  lies on line  $\ell_3$   
 143 :  $P_{8333} = (12, 3, 7, 1)$  lies on line  $\ell_{11}$   
 144 :  $P_{8357} = (4, 4, 7, 1)$  lies on line  $\ell_{14}$   
 145 :  $P_{8429} = (12, 6, 7, 1)$  lies on line  $\ell_6$   
 146 :  $P_{8520} = (7, 9, 7, 1)$  lies on line  $\ell_9$   
 147 :  $P_{8533} = (20, 9, 7, 1)$  lies on line  $\ell_{10}$   
 148 :  $P_{8560} = (15, 10, 7, 1)$  lies on line  $\ell_2$   
 149 :  $P_{8570} = (25, 10, 7, 1)$  lies on line  $\ell_1$   
 150 :  $P_{8582} = (5, 11, 7, 1)$  lies on line  $\ell_{20}$   
 151 :  $P_{8628} = (19, 12, 7, 1)$  lies on line  $\ell_{12}$   
 152 :  $P_{8665} = (24, 13, 7, 1)$  lies on line  $\ell_8$   
 153 :  $P_{8895} = (30, 20, 7, 1)$  lies on line  $\ell_{19}$   
 154 :  $P_{8912} = (15, 21, 7, 1)$  lies on line  $\ell_{15}$   
 155 :  $P_{8929} = (0, 22, 7, 1)$  lies on line  $\ell_{17}$   
 156 :  $P_{9126} = (5, 28, 7, 1)$  lies on line  $\ell_{16}$   
 157 :  $P_{9189} = (4, 30, 7, 1)$  lies on line  $\ell_3$   
 158 :  $P_{9210} = (25, 30, 7, 1)$  lies on line  $\ell_4$   
 159 :  $P_{9275} = (26, 0, 8, 1)$  lies on line  $\ell_{16}$   
 160 :  $P_{9359} = (14, 3, 8, 1)$  lies on line  $\ell_7$   
 161 :  $P_{9362} = (17, 3, 8, 1)$  lies on line  $\ell_8$

162 :  $P_{9437} = (28, 5, 8, 1)$  lies on line  $\ell_5$   
 163 :  $P_{9475} = (2, 7, 8, 1)$  lies on line  $\ell_{14}$   
 164 :  $P_{9525} = (20, 8, 8, 1)$  lies on line  $\ell_4$   
 165 :  $P_{9535} = (30, 8, 8, 1)$  lies on line  $\ell_3$   
 166 :  $P_{9559} = (22, 9, 8, 1)$  lies on line  $\ell_{15}$   
 167 :  $P_{9668} = (3, 13, 8, 1)$  lies on line  $\ell_{10}$   
 168 :  $P_{9690} = (25, 13, 8, 1)$  lies on line  $\ell_9$   
 169 :  $P_{9705} = (8, 14, 8, 1)$  lies on line  $\ell_{20}$   
 170 :  $P_{9721} = (24, 14, 8, 1)$  lies on line  $\ell_6$   
 171 :  $P_{9905} = (16, 20, 8, 1)$  lies on line  $\ell_{17}$   
 172 :  $P_{9916} = (27, 20, 8, 1)$  lies on line  $\ell_{18}$   
 173 :  $P_{9935} = (14, 21, 8, 1)$  lies on line  $\ell_{13}$   
 174 :  $P_{10133} = (20, 27, 8, 1)$  lies on line  $\ell_2$   
 175 :  $P_{10137} = (24, 27, 8, 1)$  lies on line  $\ell_1$   
 176 :  $P_{10222} = (13, 30, 8, 1)$  lies on line  $\ell_{11}$   
 177 :  $P_{10421} = (20, 4, 9, 1)$  lies on line  $\ell_{12}$   
 178 :  $P_{10568} = (7, 9, 9, 1)$  lies on line  $\ell_6$   
 179 :  $P_{10625} = (0, 11, 9, 1)$  lies on line  $\ell_{11}$   
 180 :  $P_{10702} = (13, 13, 9, 1)$  lies on line  $\ell_3$   
 181 :  $P_{10732} = (11, 14, 9, 1)$  lies on line  $\ell_{18}$   
 182 :  $P_{10751} = (30, 14, 9, 1)$  lies on line  $\ell_{17}$   
 183 :  $P_{10763} = (10, 15, 9, 1)$  lies on line  $\ell_7$   
 184 :  $P_{10780} = (27, 15, 9, 1)$  lies on line  $\ell_8$   
 185 :  $P_{10794} = (9, 16, 9, 1)$  lies on line  $\ell_{14}$   
 186 :  $P_{10835} = (18, 17, 9, 1)$  lies on line  $\ell_{15}$   
 187 :  $P_{10868} = (19, 18, 9, 1)$  lies on line  $\ell_{20}$   
 188 :  $P_{11051} = (10, 24, 9, 1)$  lies on line  $\ell_2$   
 189 :  $P_{11180} = (11, 28, 9, 1)$  lies on line  $\ell_{10}$   
 190 :  $P_{11196} = (27, 28, 9, 1)$  lies on line  $\ell_9$   
 191 :  $P_{11300} = (3, 0, 10, 1)$  lies on line  $\ell_6$   
 192 :  $P_{11368} = (7, 2, 10, 1)$  lies on line  $\ell_4$   
 193 :  $P_{11390} = (29, 2, 10, 1)$  lies on line  $\ell_3$   
 194 :  $P_{11469} = (12, 5, 10, 1)$  lies on line  $\ell_{17}$   
 195 :  $P_{11487} = (30, 5, 10, 1)$  lies on line  $\ell_{18}$   
 196 :  $P_{11636} = (19, 10, 10, 1)$  lies on line  $\ell_{10}$   
 197 :  $P_{11646} = (29, 10, 10, 1)$  lies on line  $\ell_9$   
 198 :  $P_{11674} = (25, 11, 10, 1)$  lies on line  $\ell_5$   
 199 :  $P_{11864} = (23, 17, 10, 1)$  lies on line  $\ell_{11}$   
 200 :  $P_{11932} = (27, 19, 10, 1)$  lies on line  $\ell_{20}$   
 201 :  $P_{11973} = (4, 21, 10, 1)$  lies on line  $\ell_{16}$   
 202 :  $P_{12166} = (5, 27, 10, 1)$  lies on line  $\ell_8$   
 203 :  $P_{12167} = (6, 27, 10, 1)$  lies on line  $\ell_7$   
 204 :  $P_{12223} = (30, 28, 10, 1)$  lies on line  $\ell_{15}$   
 205 :  $P_{12227} = (2, 29, 10, 1)$  lies on line  $\ell_1$   
 206 :  $P_{12238} = (13, 29, 10, 1)$  lies on line  $\ell_2$   
 207 :  $P_{12264} = (7, 30, 10, 1)$  lies on line  $\ell_{12}$   
 208 :  $P_{12267} = (10, 30, 10, 1)$  lies on line  $\ell_{13}$   
 209 :  $P_{12559} = (14, 7, 11, 1)$  lies on line  $\ell_3$   
 210 :  $P_{12617} = (8, 9, 11, 1)$  lies on line  $\ell_{13}$   
 211 :  $P_{12694} = (21, 11, 11, 1)$  lies on line  $\ell_{12}$   
 212 :  $P_{12714} = (9, 12, 11, 1)$  lies on line  $\ell_5$   
 213 :  $P_{12748} = (11, 13, 11, 1)$  lies on line  $\ell_{16}$   
 214 :  $P_{12801} = (0, 15, 11, 1)$  lies on line  $\ell_{20}$   
 215 :  $P_{12862} = (29, 16, 11, 1)$  lies on line  $\ell_{19}$

216 :  $P_{13059} = (2, 23, 11, 1)$  lies on line  $\ell_7$   
 217 :  $P_{13072} = (15, 23, 11, 1)$  lies on line  $\ell_8$   
 218 :  $P_{13212} = (27, 27, 11, 1)$  lies on line  $\ell_{10}$   
 219 :  $P_{13296} = (15, 30, 11, 1)$  lies on line  $\ell_1$   
 220 :  $P_{13300} = (19, 30, 11, 1)$  lies on line  $\ell_2$   
 221 :  $P_{13315} = (2, 31, 11, 1)$  lies on line  $\ell_{17}$   
 222 :  $P_{13327} = (14, 31, 11, 1)$  lies on line  $\ell_{18}$   
 223 :  $P_{13373} = (28, 0, 12, 1)$  lies on line  $\ell_{11}$   
 224 :  $P_{13458} = (17, 3, 12, 1)$  lies on line  $\ell_9$   
 225 :  $P_{13543} = (6, 6, 12, 1)$  lies on line  $\ell_{15}$   
 226 :  $P_{13800} = (7, 14, 12, 1)$  lies on line  $\ell_{19}$   
 227 :  $P_{13828} = (3, 15, 12, 1)$  lies on line  $\ell_{16}$   
 228 :  $P_{13829} = (4, 15, 12, 1)$  lies on line  $\ell_{12}$   
 229 :  $P_{13932} = (11, 18, 12, 1)$  lies on line  $\ell_6$   
 230 :  $P_{13966} = (13, 19, 12, 1)$  lies on line  $\ell_{17}$   
 231 :  $P_{13970} = (17, 19, 12, 1)$  lies on line  $\ell_{18}$   
 232 :  $P_{14077} = (28, 22, 12, 1)$  lies on line  $\ell_8$   
 233 :  $P_{14079} = (30, 22, 12, 1)$  lies on line  $\ell_7$   
 234 :  $P_{14084} = (3, 23, 12, 1)$  lies on line  $\ell_2$   
 235 :  $P_{14090} = (9, 23, 12, 1)$  lies on line  $\ell_1$   
 236 :  $P_{14167} = (22, 25, 12, 1)$  lies on line  $\ell_5$   
 237 :  $P_{14264} = (23, 28, 12, 1)$  lies on line  $\ell_4$   
 238 :  $P_{14265} = (24, 28, 12, 1)$  lies on line  $\ell_3$   
 239 :  $P_{14561} = (0, 6, 13, 1)$  lies on line  $\ell_{14}$   
 240 :  $P_{14658} = (1, 9, 13, 1)$  lies on line  $\ell_{18}$   
 241 :  $P_{14660} = (3, 9, 13, 1)$  lies on line  $\ell_{17}$   
 242 :  $P_{14801} = (16, 13, 13, 1)$  lies on line  $\ell_{20}$   
 243 :  $P_{14964} = (19, 18, 13, 1)$  lies on line  $\ell_9$   
 244 :  $P_{15038} = (29, 20, 13, 1)$  lies on line  $\ell_2$   
 245 :  $P_{15058} = (17, 21, 13, 1)$  lies on line  $\ell_{11}$   
 246 :  $P_{15061} = (20, 21, 13, 1)$  lies on line  $\ell_6$   
 247 :  $P_{15117} = (12, 23, 13, 1)$  lies on line  $\ell_{16}$   
 248 :  $P_{15180} = (11, 25, 13, 1)$  lies on line  $\ell_3$   
 249 :  $P_{15181} = (12, 25, 13, 1)$  lies on line  $\ell_4$   
 250 :  $P_{15227} = (26, 26, 13, 1)$  lies on line  $\ell_7$   
 251 :  $P_{15331} = (2, 30, 13, 1)$  lies on line  $\ell_{15}$   
 252 :  $P_{15335} = (6, 30, 13, 1)$  lies on line  $\ell_5$   
 253 :  $P_{15398} = (5, 0, 14, 1)$  lies on line  $\ell_{12}$   
 254 :  $P_{15474} = (17, 2, 14, 1)$  lies on line  $\ell_{17}$   
 255 :  $P_{15477} = (20, 2, 14, 1)$  lies on line  $\ell_{18}$   
 256 :  $P_{15542} = (21, 4, 14, 1)$  lies on line  $\ell_9$   
 257 :  $P_{15543} = (22, 4, 14, 1)$  lies on line  $\ell_{10}$   
 258 :  $P_{15651} = (2, 8, 14, 1)$  lies on line  $\ell_{13}$   
 259 :  $P_{15801} = (24, 12, 14, 1)$  lies on line  $\ell_{20}$   
 260 :  $P_{15849} = (8, 14, 14, 1)$  lies on line  $\ell_8$   
 261 :  $P_{15863} = (22, 14, 14, 1)$  lies on line  $\ell_7$   
 262 :  $P_{15879} = (6, 15, 14, 1)$  lies on line  $\ell_{11}$   
 263 :  $P_{15956} = (19, 17, 14, 1)$  lies on line  $\ell_1$   
 264 :  $P_{15963} = (26, 17, 14, 1)$  lies on line  $\ell_2$   
 265 :  $P_{16015} = (14, 19, 14, 1)$  lies on line  $\ell_{15}$   
 266 :  $P_{16022} = (21, 19, 14, 1)$  lies on line  $\ell_{19}$   
 267 :  $P_{16101} = (4, 22, 14, 1)$  lies on line  $\ell_4$   
 268 :  $P_{16124} = (27, 22, 14, 1)$  lies on line  $\ell_3$   
 269 :  $P_{16148} = (19, 23, 14, 1)$  lies on line  $\ell_5$

270 :  $P_{16305} = (16, 28, 14, 1)$  lies on line  $\ell_6$   
 271 :  $P_{16483} = (2, 2, 15, 1)$  lies on line  $\ell_8$   
 272 :  $P_{16779} = (10, 11, 15, 1)$  lies on line  $\ell_{15}$   
 273 :  $P_{16855} = (22, 13, 15, 1)$  lies on line  $\ell_{14}$   
 274 :  $P_{16925} = (28, 15, 15, 1)$  lies on line  $\ell_{19}$   
 275 :  $P_{16997} = (4, 18, 15, 1)$  lies on line  $\ell_2$   
 276 :  $P_{17023} = (30, 18, 15, 1)$  lies on line  $\ell_1$   
 277 :  $P_{17033} = (8, 19, 15, 1)$  lies on line  $\ell_3$   
 278 :  $P_{17056} = (31, 19, 15, 1)$  lies on line  $\ell_4$   
 279 :  $P_{17119} = (30, 21, 15, 1)$  lies on line  $\ell_{10}$   
 280 :  $P_{17189} = (4, 24, 15, 1)$  lies on line  $\ell_{18}$   
 281 :  $P_{17216} = (31, 24, 15, 1)$  lies on line  $\ell_{17}$   
 282 :  $P_{17260} = (11, 26, 15, 1)$  lies on line  $\ell_{11}$   
 283 :  $P_{17296} = (15, 27, 15, 1)$  lies on line  $\ell_6$   
 284 :  $P_{17409} = (0, 31, 15, 1)$  lies on line  $\ell_{13}$   
 285 :  $P_{17653} = (20, 6, 16, 1)$  lies on line  $\ell_{17}$   
 286 :  $P_{17670} = (5, 7, 16, 1)$  lies on line  $\ell_5$   
 287 :  $P_{17671} = (6, 7, 16, 1)$  lies on line  $\ell_{16}$   
 288 :  $P_{17837} = (12, 12, 16, 1)$  lies on line  $\ell_9$   
 289 :  $P_{17914} = (25, 14, 16, 1)$  lies on line  $\ell_{15}$   
 290 :  $P_{17916} = (27, 14, 16, 1)$  lies on line  $\ell_{13}$   
 291 :  $P_{17957} = (4, 16, 16, 1)$  lies on line  $\ell_{11}$   
 292 :  $P_{18018} = (1, 18, 16, 1)$  lies on line  $\ell_7$   
 293 :  $P_{18043} = (26, 18, 16, 1)$  lies on line  $\ell_8$   
 294 :  $P_{18154} = (9, 22, 16, 1)$  lies on line  $\ell_2$   
 295 :  $P_{18162} = (17, 22, 16, 1)$  lies on line  $\ell_1$   
 296 :  $P_{18241} = (0, 25, 16, 1)$  lies on line  $\ell_{19}$   
 297 :  $P_{18354} = (17, 28, 16, 1)$  lies on line  $\ell_{14}$   
 298 :  $P_{18463} = (30, 31, 16, 1)$  lies on line  $\ell_4$   
 299 :  $P_{18486} = (21, 0, 17, 1)$  lies on line  $\ell_5$   
 300 :  $P_{18809} = (24, 10, 17, 1)$  lies on line  $\ell_{12}$   
 301 :  $P_{18819} = (2, 11, 17, 1)$  lies on line  $\ell_6$   
 302 :  $P_{18843} = (26, 11, 17, 1)$  lies on line  $\ell_{14}$   
 303 :  $P_{19160} = (23, 21, 17, 1)$  lies on line  $\ell_2$   
 304 :  $P_{19165} = (28, 21, 17, 1)$  lies on line  $\ell_1$   
 305 :  $P_{19198} = (29, 22, 17, 1)$  lies on line  $\ell_{15}$   
 306 :  $P_{19290} = (25, 25, 17, 1)$  lies on line  $\ell_{13}$   
 307 :  $P_{19302} = (5, 26, 17, 1)$  lies on line  $\ell_4$   
 308 :  $P_{19379} = (18, 28, 17, 1)$  lies on line  $\ell_{18}$   
 309 :  $P_{19387} = (26, 28, 17, 1)$  lies on line  $\ell_{17}$   
 310 :  $P_{19407} = (14, 29, 17, 1)$  lies on line  $\ell_9$   
 311 :  $P_{19414} = (21, 29, 17, 1)$  lies on line  $\ell_{10}$   
 312 :  $P_{19430} = (5, 30, 17, 1)$  lies on line  $\ell_7$   
 313 :  $P_{19441} = (16, 30, 17, 1)$  lies on line  $\ell_8$   
 314 :  $P_{19466} = (9, 31, 17, 1)$  lies on line  $\ell_{16}$   
 315 :  $P_{19559} = (6, 2, 18, 1)$  lies on line  $\ell_6$   
 316 :  $P_{19635} = (18, 4, 18, 1)$  lies on line  $\ell_{19}$   
 317 :  $P_{19680} = (31, 5, 18, 1)$  lies on line  $\ell_{13}$   
 318 :  $P_{19777} = (0, 9, 18, 1)$  lies on line  $\ell_5$   
 319 :  $P_{19818} = (9, 10, 18, 1)$  lies on line  $\ell_7$   
 320 :  $P_{19823} = (14, 10, 18, 1)$  lies on line  $\ell_8$   
 321 :  $P_{19849} = (8, 11, 18, 1)$  lies on line  $\ell_9$   
 322 :  $P_{19854} = (13, 11, 18, 1)$  lies on line  $\ell_{10}$   
 323 :  $P_{20017} = (16, 16, 18, 1)$  lies on line  $\ell_2$

324 :  $P_{20089} = (24, 18, 18, 1)$  lies on line  $\ell_{16}$   
 325 :  $P_{20170} = (9, 21, 18, 1)$  lies on line  $\ell_3$   
 326 :  $P_{20174} = (13, 21, 18, 1)$  lies on line  $\ell_4$   
 327 :  $P_{20233} = (8, 23, 18, 1)$  lies on line  $\ell_{17}$   
 328 :  $P_{20511} = (30, 31, 18, 1)$  lies on line  $\ell_{11}$   
 329 :  $P_{20525} = (12, 0, 19, 1)$  lies on line  $\ell_{14}$   
 330 :  $P_{20630} = (21, 3, 19, 1)$  lies on line  $\ell_{15}$   
 331 :  $P_{20709} = (4, 6, 19, 1)$  lies on line  $\ell_8$   
 332 :  $P_{20718} = (13, 6, 19, 1)$  lies on line  $\ell_7$   
 333 :  $P_{20747} = (10, 7, 19, 1)$  lies on line  $\ell_{20}$   
 334 :  $P_{20852} = (19, 10, 19, 1)$  lies on line  $\ell_{11}$   
 335 :  $P_{20856} = (23, 10, 19, 1)$  lies on line  $\ell_{16}$   
 336 :  $P_{20935} = (6, 13, 19, 1)$  lies on line  $\ell_{17}$   
 337 :  $P_{20952} = (23, 13, 19, 1)$  lies on line  $\ell_{18}$   
 338 :  $P_{20977} = (16, 14, 19, 1)$  lies on line  $\ell_5$   
 339 :  $P_{21047} = (22, 16, 19, 1)$  lies on line  $\ell_4$   
 340 :  $P_{21051} = (26, 16, 19, 1)$  lies on line  $\ell_3$   
 341 :  $P_{21118} = (29, 18, 19, 1)$  lies on line  $\ell_{13}$   
 342 :  $P_{21127} = (6, 19, 19, 1)$  lies on line  $\ell_1$   
 343 :  $P_{21135} = (14, 19, 19, 1)$  lies on line  $\ell_2$   
 344 :  $P_{21308} = (27, 24, 19, 1)$  lies on line  $\ell_{19}$   
 345 :  $P_{21350} = (5, 26, 19, 1)$  lies on line  $\ell_{10}$   
 346 :  $P_{21355} = (10, 26, 19, 1)$  lies on line  $\ell_9$   
 347 :  $P_{21605} = (4, 2, 20, 1)$  lies on line  $\ell_9$   
 348 :  $P_{21625} = (24, 2, 20, 1)$  lies on line  $\ell_{10}$   
 349 :  $P_{21730} = (1, 6, 20, 1)$  lies on line  $\ell_{19}$   
 350 :  $P_{21778} = (17, 7, 20, 1)$  lies on line  $\ell_7$   
 351 :  $P_{21784} = (23, 7, 20, 1)$  lies on line  $\ell_8$   
 352 :  $P_{21824} = (31, 8, 20, 1)$  lies on line  $\ell_{16}$   
 353 :  $P_{21881} = (24, 10, 20, 1)$  lies on line  $\ell_{14}$   
 354 :  $P_{21901} = (12, 11, 20, 1)$  lies on line  $\ell_3$   
 355 :  $P_{21918} = (29, 11, 20, 1)$  lies on line  $\ell_4$   
 356 :  $P_{22006} = (21, 14, 20, 1)$  lies on line  $\ell_{11}$   
 357 :  $P_{22063} = (14, 16, 20, 1)$  lies on line  $\ell_6$   
 358 :  $P_{22324} = (19, 24, 20, 1)$  lies on line  $\ell_{13}$   
 359 :  $P_{22338} = (1, 25, 20, 1)$  lies on line  $\ell_{20}$   
 360 :  $P_{22369} = (0, 26, 20, 1)$  lies on line  $\ell_1$   
 361 :  $P_{22399} = (30, 26, 20, 1)$  lies on line  $\ell_2$   
 362 :  $P_{22416} = (15, 27, 20, 1)$  lies on line  $\ell_5$   
 363 :  $P_{22747} = (26, 5, 21, 1)$  lies on line  $\ell_{20}$   
 364 :  $P_{22934} = (21, 11, 21, 1)$  lies on line  $\ell_7$   
 365 :  $P_{22942} = (29, 11, 21, 1)$  lies on line  $\ell_8$   
 366 :  $P_{23015} = (6, 14, 21, 1)$  lies on line  $\ell_4$   
 367 :  $P_{23040} = (31, 14, 21, 1)$  lies on line  $\ell_3$   
 368 :  $P_{23058} = (17, 15, 21, 1)$  lies on line  $\ell_{13}$   
 369 :  $P_{23089} = (16, 16, 21, 1)$  lies on line  $\ell_{16}$   
 370 :  $P_{23175} = (6, 19, 21, 1)$  lies on line  $\ell_9$   
 371 :  $P_{23185} = (16, 19, 21, 1)$  lies on line  $\ell_{10}$   
 372 :  $P_{23227} = (26, 20, 21, 1)$  lies on line  $\ell_{12}$   
 373 :  $P_{23314} = (17, 23, 21, 1)$  lies on line  $\ell_6$   
 374 :  $P_{23361} = (0, 25, 21, 1)$  lies on line  $\ell_2$   
 375 :  $P_{23401} = (8, 26, 21, 1)$  lies on line  $\ell_{19}$   
 376 :  $P_{23432} = (7, 27, 21, 1)$  lies on line  $\ell_{17}$   
 377 :  $P_{23488} = (31, 28, 21, 1)$  lies on line  $\ell_5$   
 378 :  $P_{23508} = (19, 29, 21, 1)$  lies on line  $\ell_{14}$   
 379 :  $P_{23731} = (18, 4, 22, 1)$  lies on line  $\ell_{20}$   
 380 :  $P_{23745} = (0, 5, 22, 1)$  lies on line  $\ell_9$   
 381 :  $P_{23753} = (8, 5, 22, 1)$  lies on line  $\ell_{10}$   
 382 :  $P_{24042} = (9, 14, 22, 1)$  lies on line  $\ell_{12}$   
 383 :  $P_{24110} = (13, 16, 22, 1)$  lies on line  $\ell_{18}$   
 384 :  $P_{24118} = (21, 16, 22, 1)$  lies on line  $\ell_{17}$   
 385 :  $P_{24216} = (23, 19, 22, 1)$  lies on line  $\ell_{13}$   
 386 :  $P_{24226} = (1, 20, 22, 1)$  lies on line  $\ell_{15}$   
 387 :  $P_{24267} = (10, 21, 22, 1)$  lies on line  $\ell_5$   
 388 :  $P_{24468} = (19, 27, 22, 1)$  lies on line  $\ell_{19}$   
 389 :  $P_{24488} = (7, 28, 22, 1)$  lies on line  $\ell_2$   
 390 :  $P_{24507} = (26, 28, 22, 1)$  lies on line  $\ell_1$   
 391 :  $P_{24514} = (1, 29, 22, 1)$  lies on line  $\ell_{16}$   
 392 :  $P_{24566} = (21, 30, 22, 1)$  lies on line  $\ell_6$   
 393 :  $P_{24580} = (3, 31, 22, 1)$  lies on line  $\ell_8$   
 394 :  $P_{24602} = (25, 31, 22, 1)$  lies on line  $\ell_7$   
 395 :  $P_{24765} = (28, 4, 23, 1)$  lies on line  $\ell_3$   
 396 :  $P_{24783} = (14, 5, 23, 1)$  lies on line  $\ell_{16}$   
 397 :  $P_{24859} = (26, 7, 23, 1)$  lies on line  $\ell_{19}$   
 398 :  $P_{24956} = (27, 10, 23, 1)$  lies on line  $\ell_{17}$   
 399 :  $P_{24958} = (29, 10, 23, 1)$  lies on line  $\ell_{18}$   
 400 :  $P_{24998} = (5, 12, 23, 1)$  lies on line  $\ell_{15}$   
 401 :  $P_{25211} = (26, 18, 23, 1)$  lies on line  $\ell_5$   
 402 :  $P_{25226} = (9, 19, 23, 1)$  lies on line  $\ell_8$   
 403 :  $P_{25246} = (29, 19, 23, 1)$  lies on line  $\ell_7$   
 404 :  $P_{25249} = (0, 20, 23, 1)$  lies on line  $\ell_{10}$   
 405 :  $P_{25318} = (5, 22, 23, 1)$  lies on line  $\ell_{14}$   
 406 :  $P_{25386} = (9, 24, 23, 1)$  lies on line  $\ell_{20}$   
 407 :  $P_{25419} = (10, 25, 23, 1)$  lies on line  $\ell_6$   
 408 :  $P_{25500} = (27, 27, 23, 1)$  lies on line  $\ell_{12}$   
 409 :  $P_{25624} = (23, 31, 23, 1)$  lies on line  $\ell_1$   
 410 :  $P_{25626} = (25, 31, 23, 1)$  lies on line  $\ell_2$   
 411 :  $P_{25699} = (2, 2, 24, 1)$  lies on line  $\ell_{19}$   
 412 :  $P_{25839} = (14, 6, 24, 1)$  lies on line  $\ell_{12}$   
 413 :  $P_{25868} = (11, 7, 24, 1)$  lies on line  $\ell_{13}$   
 414 :  $P_{25900} = (11, 8, 24, 1)$  lies on line  $\ell_{17}$   
 415 :  $P_{25911} = (22, 8, 24, 1)$  lies on line  $\ell_{18}$   
 416 :  $P_{25924} = (3, 9, 24, 1)$  lies on line  $\ell_{11}$   
 417 :  $P_{26083} = (2, 14, 24, 1)$  lies on line  $\ell_2$   
 418 :  $P_{26103} = (22, 14, 24, 1)$  lies on line  $\ell_1$   
 419 :  $P_{26168} = (23, 16, 24, 1)$  lies on line  $\ell_{10}$   
 420 :  $P_{26207} = (30, 17, 24, 1)$  lies on line  $\ell_6$   
 421 :  $P_{26215} = (6, 18, 24, 1)$  lies on line  $\ell_3$   
 422 :  $P_{26233} = (24, 18, 24, 1)$  lies on line  $\ell_4$   
 423 :  $P_{26308} = (3, 21, 24, 1)$  lies on line  $\ell_{14}$   
 424 :  $P_{26450} = (17, 25, 24, 1)$  lies on line  $\ell_{16}$   
 425 :  $P_{26482} = (17, 26, 24, 1)$  lies on line  $\ell_5$   
 426 :  $P_{26561} = (0, 29, 24, 1)$  lies on line  $\ell_8$   
 427 :  $P_{26729} = (8, 2, 25, 1)$  lies on line  $\ell_{14}$   
 428 :  $P_{26937} = (24, 8, 25, 1)$  lies on line  $\ell_{15}$   
 429 :  $P_{27100} = (27, 13, 25, 1)$  lies on line  $\ell_1$   
 430 :  $P_{27101} = (28, 13, 25, 1)$  lies on line  $\ell_2$   
 431 :  $P_{27178} = (9, 16, 25, 1)$  lies on line  $\ell_{13}$

432 :  $P_{27201} = (0, 17, 25, 1)$  lies on line  $\ell_7$   
 433 :  $P_{27211} = (10, 17, 25, 1)$  lies on line  $\ell_8$   
 434 :  $P_{27238} = (5, 18, 25, 1)$  lies on line  $\ell_{17}$   
 435 :  $P_{27239} = (6, 18, 25, 1)$  lies on line  $\ell_{18}$   
 436 :  $P_{27293} = (28, 19, 25, 1)$  lies on line  $\ell_{12}$   
 437 :  $P_{27362} = (1, 22, 25, 1)$  lies on line  $\ell_6$   
 438 :  $P_{27396} = (3, 23, 25, 1)$  lies on line  $\ell_4$   
 439 :  $P_{27414} = (21, 23, 25, 1)$  lies on line  $\ell_3$   
 440 :  $P_{27567} = (14, 28, 25, 1)$  lies on line  $\ell_{11}$   
 441 :  $P_{27586} = (1, 29, 25, 1)$  lies on line  $\ell_5$   
 442 :  $P_{27628} = (11, 30, 25, 1)$  lies on line  $\ell_{19}$   
 443 :  $P_{27704} = (23, 0, 26, 1)$  lies on line  $\ell_{20}$   
 444 :  $P_{27853} = (12, 5, 26, 1)$  lies on line  $\ell_7$   
 445 :  $P_{27898} = (25, 6, 26, 1)$  lies on line  $\ell_{11}$   
 446 :  $P_{27949} = (12, 8, 26, 1)$  lies on line  $\ell_1$   
 447 :  $P_{27964} = (27, 8, 26, 1)$  lies on line  $\ell_2$   
 448 :  $P_{27984} = (15, 9, 26, 1)$  lies on line  $\ell_{12}$   
 449 :  $P_{28341} = (20, 20, 26, 1)$  lies on line  $\ell_5$   
 450 :  $P_{28424} = (7, 23, 26, 1)$  lies on line  $\ell_{10}$   
 451 :  $P_{28441} = (24, 23, 26, 1)$  lies on line  $\ell_9$   
 452 :  $P_{28454} = (5, 24, 26, 1)$  lies on line  $\ell_3$   
 453 :  $P_{28460} = (11, 24, 26, 1)$  lies on line  $\ell_4$   
 454 :  $P_{28500} = (19, 25, 26, 1)$  lies on line  $\ell_{18}$   
 455 :  $P_{28504} = (23, 25, 26, 1)$  lies on line  $\ell_{17}$   
 456 :  $P_{28662} = (21, 30, 26, 1)$  lies on line  $\ell_{14}$   
 457 :  $P_{28678} = (5, 31, 26, 1)$  lies on line  $\ell_6$   
 458 :  $P_{28689} = (16, 31, 26, 1)$  lies on line  $\ell_{19}$   
 459 :  $P_{28804} = (3, 3, 27, 1)$  lies on line  $\ell_{18}$   
 460 :  $P_{28912} = (15, 6, 27, 1)$  lies on line  $\ell_{10}$   
 461 :  $P_{28923} = (26, 6, 27, 1)$  lies on line  $\ell_9$   
 462 :  $P_{29001} = (8, 9, 27, 1)$  lies on line  $\ell_7$   
 463 :  $P_{29058} = (1, 11, 27, 1)$  lies on line  $\ell_1$   
 464 :  $P_{29062} = (5, 11, 27, 1)$  lies on line  $\ell_2$   
 465 :  $P_{29317} = (4, 19, 27, 1)$  lies on line  $\ell_5$   
 466 :  $P_{29333} = (20, 19, 27, 1)$  lies on line  $\ell_{11}$   
 467 :  $P_{29345} = (0, 20, 27, 1)$  lies on line  $\ell_{16}$   
 468 :  $P_{29499} = (26, 24, 27, 1)$  lies on line  $\ell_6$   
 469 :  $P_{29582} = (13, 27, 27, 1)$  lies on line  $\ell_{13}$   
 470 :  $P_{29613} = (12, 28, 27, 1)$  lies on line  $\ell_{20}$   
 471 :  $P_{29630} = (29, 28, 27, 1)$  lies on line  $\ell_{12}$   
 472 :  $P_{29655} = (22, 29, 27, 1)$  lies on line  $\ell_3$   
 473 :  $P_{29814} = (21, 2, 28, 1)$  lies on line  $\ell_2$   
 474 :  $P_{29835} = (10, 3, 28, 1)$  lies on line  $\ell_{14}$   
 475 :  $P_{29921} = (0, 6, 28, 1)$  lies on line  $\ell_3$   
 476 :  $P_{29998} = (13, 8, 28, 1)$  lies on line  $\ell_8$   
 477 :  $P_{30005} = (20, 8, 28, 1)$  lies on line  $\ell_7$   
 478 :  $P_{30158} = (13, 13, 28, 1)$  lies on line  $\ell_6$   
 479 :  $P_{30231} = (22, 15, 28, 1)$  lies on line  $\ell_{17}$   
 480 :  $P_{30237} = (28, 15, 28, 1)$  lies on line  $\ell_{18}$   
 481 :  $P_{30276} = (3, 17, 28, 1)$  lies on line  $\ell_{13}$   
 482 :  $P_{30441} = (8, 22, 28, 1)$  lies on line  $\ell_{16}$   
 483 :  $P_{30483} = (18, 23, 28, 1)$  lies on line  $\ell_{11}$   
 484 :  $P_{30509} = (12, 24, 28, 1)$  lies on line  $\ell_{12}$   
 485 :  $P_{30660} = (3, 29, 28, 1)$  lies on line  $\ell_{19}$   
 486 :  $P_{30707} = (18, 30, 28, 1)$  lies on line  $\ell_{10}$   
 487 :  $P_{30709} = (20, 30, 28, 1)$  lies on line  $\ell_9$   
 488 :  $P_{30733} = (12, 31, 28, 1)$  lies on line  $\ell_{15}$   
 489 :  $P_{30848} = (31, 2, 29, 1)$  lies on line  $\ell_{11}$   
 490 :  $P_{30849} = (0, 3, 29, 1)$  lies on line  $\ell_4$   
 491 :  $P_{30868} = (19, 3, 29, 1)$  lies on line  $\ell_3$   
 492 :  $P_{30888} = (7, 4, 29, 1)$  lies on line  $\ell_8$   
 493 :  $P_{30897} = (16, 4, 29, 1)$  lies on line  $\ell_7$   
 494 :  $P_{30946} = (1, 6, 29, 1)$  lies on line  $\ell_{13}$   
 495 :  $P_{30985} = (8, 7, 29, 1)$  lies on line  $\ell_{15}$   
 496 :  $P_{31091} = (18, 10, 29, 1)$  lies on line  $\ell_6$   
 497 :  $P_{31199} = (30, 13, 29, 1)$  lies on line  $\ell_{12}$   
 498 :  $P_{31208} = (7, 14, 29, 1)$  lies on line  $\ell_{16}$   
 499 :  $P_{31255} = (22, 15, 29, 1)$  lies on line  $\ell_9$   
 500 :  $P_{31259} = (26, 15, 29, 1)$  lies on line  $\ell_{10}$   
 501 :  $P_{31394} = (1, 20, 29, 1)$  lies on line  $\ell_{14}$   
 502 :  $P_{31437} = (12, 21, 29, 1)$  lies on line  $\ell_{18}$   
 503 :  $P_{31449} = (24, 21, 29, 1)$  lies on line  $\ell_{17}$   
 504 :  $P_{31741} = (28, 30, 29, 1)$  lies on line  $\ell_{20}$   
 505 :  $P_{31794} = (17, 0, 30, 1)$  lies on line  $\ell_{19}$   
 506 :  $P_{31917} = (12, 4, 30, 1)$  lies on line  $\ell_2$   
 507 :  $P_{31934} = (29, 4, 30, 1)$  lies on line  $\ell_1$   
 508 :  $P_{32061} = (28, 8, 30, 1)$  lies on line  $\ell_{14}$   
 509 :  $P_{32063} = (30, 8, 30, 1)$  lies on line  $\ell_5$   
 510 :  $P_{32101} = (4, 10, 30, 1)$  lies on line  $\ell_{15}$   
 511 :  $P_{32164} = (3, 12, 30, 1)$  lies on line  $\ell_3$   
 512 :  $P_{32169} = (8, 12, 30, 1)$  lies on line  $\ell_4$   
 513 :  $P_{32314} = (25, 16, 30, 1)$  lies on line  $\ell_8$   
 514 :  $P_{32317} = (28, 16, 30, 1)$  lies on line  $\ell_7$   
 515 :  $P_{32526} = (13, 23, 30, 1)$  lies on line  $\ell_{12}$   
 516 :  $P_{32553} = (8, 24, 30, 1)$  lies on line  $\ell_{11}$   
 517 :  $P_{32579} = (2, 25, 30, 1)$  lies on line  $\ell_{10}$   
 518 :  $P_{32593} = (16, 25, 30, 1)$  lies on line  $\ell_9$   
 519 :  $P_{32616} = (7, 26, 30, 1)$  lies on line  $\ell_{13}$   
 520 :  $P_{32747} = (10, 30, 30, 1)$  lies on line  $\ell_{17}$   
 521 :  $P_{32762} = (25, 30, 30, 1)$  lies on line  $\ell_{18}$   
 522 :  $P_{32789} = (20, 31, 30, 1)$  lies on line  $\ell_{20}$   
 523 :  $P_{32896} = (31, 2, 31, 1)$  lies on line  $\ell_{12}$   
 524 :  $P_{32912} = (15, 3, 31, 1)$  lies on line  $\ell_{20}$   
 525 :  $P_{32933} = (4, 4, 31, 1)$  lies on line  $\ell_{17}$   
 526 :  $P_{33041} = (16, 7, 31, 1)$  lies on line  $\ell_1$   
 527 :  $P_{33043} = (18, 7, 31, 1)$  lies on line  $\ell_2$   
 528 :  $P_{33067} = (10, 8, 31, 1)$  lies on line  $\ell_{10}$   
 529 :  $P_{33075} = (18, 8, 31, 1)$  lies on line  $\ell_9$   
 530 :  $P_{33105} = (16, 9, 31, 1)$  lies on line  $\ell_3$   
 531 :  $P_{33108} = (19, 9, 31, 1)$  lies on line  $\ell_4$   
 532 :  $P_{33295} = (14, 15, 31, 1)$  lies on line  $\ell_5$   
 533 :  $P_{33377} = (0, 18, 31, 1)$  lies on line  $\ell_{15}$   
 534 :  $P_{33690} = (25, 27, 31, 1)$  lies on line  $\ell_{16}$   
 535 :  $P_{33716} = (19, 28, 31, 1)$  lies on line  $\ell_8$   
 536 :  $P_{33816} = (23, 31, 31, 1)$  lies on line  $\ell_{14}$



The single points on the surface are:

### Points on surface but on no line

The surface has 604 points not on any line:

The points on the surface but not on lines are:

0 : $P_1 = (0, 1, 0, 0)$	45 : $P_{2963} = (18, 27, 1, 1)$
1 : $P_{36} = (1, 0, 1, 0)$	46 : $P_{2964} = (19, 27, 1, 1)$
2 : $P_{67} = (0, 1, 1, 0)$	47 : $P_{3026} = (17, 29, 1, 1)$
3 : $P_{301} = (10, 8, 1, 0)$	48 : $P_{3098} = (25, 31, 1, 1)$
4 : $P_{306} = (15, 8, 1, 0)$	49 : $P_{3129} = (24, 0, 2, 1)$
5 : $P_{369} = (14, 10, 1, 0)$	50 : $P_{3200} = (31, 2, 2, 1)$
6 : $P_{386} = (31, 10, 1, 0)$	51 : $P_{3219} = (18, 3, 2, 1)$
7 : $P_{501} = (18, 14, 1, 0)$	52 : $P_{3235} = (2, 4, 2, 1)$
8 : $P_{513} = (30, 14, 1, 0)$	53 : $P_{3246} = (13, 4, 2, 1)$
9 : $P_{651} = (8, 19, 1, 0)$	54 : $P_{3307} = (10, 6, 2, 1)$
10 : $P_{654} = (11, 19, 1, 0)$	55 : $P_{3318} = (21, 6, 2, 1)$
11 : $P_{1004} = (9, 30, 1, 0)$	56 : $P_{3347} = (18, 7, 2, 1)$
12 : $P_{1014} = (19, 30, 1, 0)$	57 : $P_{3399} = (6, 9, 2, 1)$
13 : $P_{1059} = (1, 0, 0, 1)$	58 : $P_{3417} = (24, 9, 2, 1)$
14 : $P_{1143} = (21, 2, 0, 1)$	59 : $P_{3505} = (16, 12, 2, 1)$
15 : $P_{1214} = (28, 4, 0, 1)$	60 : $P_{3514} = (25, 12, 2, 1)$
16 : $P_{1267} = (17, 6, 0, 1)$	61 : $P_{3890} = (17, 24, 2, 1)$
17 : $P_{1375} = (29, 9, 0, 1)$	62 : $P_{3900} = (27, 24, 2, 1)$
18 : $P_{1432} = (22, 11, 0, 1)$	63 : $P_{3942} = (5, 26, 2, 1)$
19 : $P_{1498} = (24, 13, 0, 1)$	64 : $P_{3967} = (30, 26, 2, 1)$
20 : $P_{1563} = (25, 15, 0, 1)$	65 : $P_{4002} = (1, 28, 2, 1)$
21 : $P_{1593} = (23, 16, 0, 1)$	66 : $P_{4020} = (19, 28, 2, 1)$
22 : $P_{1654} = (20, 18, 0, 1)$	67 : $P_{4054} = (21, 29, 2, 1)$
23 : $P_{1710} = (12, 20, 0, 1)$	68 : $P_{4091} = (26, 30, 2, 1)$
24 : $P_{1765} = (3, 22, 0, 1)$	69 : $P_{4094} = (29, 30, 2, 1)$
25 : $P_{1863} = (5, 25, 0, 1)$	70 : $P_{4119} = (22, 31, 2, 1)$
26 : $P_{1929} = (7, 27, 0, 1)$	71 : $P_{4127} = (30, 31, 2, 1)$
27 : $P_{2012} = (26, 29, 0, 1)$	72 : $P_{4221} = (28, 2, 3, 1)$
28 : $P_{2056} = (6, 31, 0, 1)$	73 : $P_{4393} = (8, 8, 3, 1)$
29 : $P_{2153} = (8, 2, 1, 1)$	74 : $P_{4408} = (23, 8, 3, 1)$
30 : $P_{2154} = (9, 2, 1, 1)$	75 : $P_{4485} = (4, 11, 3, 1)$
31 : $P_{2219} = (10, 4, 1, 1)$	76 : $P_{4612} = (3, 15, 3, 1)$
32 : $P_{2220} = (11, 4, 1, 1)$	77 : $P_{4616} = (7, 15, 3, 1)$
33 : $P_{2276} = (3, 6, 1, 1)$	78 : $P_{4742} = (5, 19, 3, 1)$
34 : $P_{2389} = (20, 9, 1, 1)$	79 : $P_{4785} = (16, 20, 3, 1)$
35 : $P_{2462} = (29, 11, 1, 1)$	80 : $P_{4833} = (0, 22, 3, 1)$
36 : $P_{2527} = (30, 13, 1, 1)$	81 : $P_{4846} = (13, 22, 3, 1)$
37 : $P_{2528} = (31, 13, 1, 1)$	82 : $P_{4867} = (2, 23, 3, 1)$
38 : $P_{2583} = (22, 15, 1, 1)$	83 : $P_{4888} = (23, 23, 3, 1)$
39 : $P_{2607} = (14, 16, 1, 1)$	84 : $P_{4934} = (5, 25, 3, 1)$
40 : $P_{2608} = (15, 16, 1, 1)$	85 : $P_{4943} = (14, 25, 3, 1)$
41 : $P_{2663} = (6, 18, 1, 1)$	86 : $P_{4982} = (21, 26, 3, 1)$
42 : $P_{2726} = (5, 20, 1, 1)$	87 : $P_{5029} = (4, 28, 3, 1)$
43 : $P_{2797} = (12, 22, 1, 1)$	88 : $P_{5041} = (16, 28, 3, 1)$
44 : $P_{2907} = (26, 25, 1, 1)$	89 : $P_{5071} = (14, 29, 3, 1)$

90 : $P_{5095} = (6, 30, 3, 1)$	144 : $P_{7636} = (19, 13, 6, 1)$
91 : $P_{5104} = (15, 30, 3, 1)$	145 : $P_{7657} = (8, 14, 6, 1)$
92 : $P_{5160} = (7, 0, 4, 1)$	146 : $P_{7661} = (12, 14, 6, 1)$
93 : $P_{5266} = (17, 3, 4, 1)$	147 : $P_{7723} = (10, 16, 6, 1)$
94 : $P_{5268} = (19, 3, 4, 1)$	148 : $P_{7741} = (28, 16, 6, 1)$
95 : $P_{5299} = (18, 4, 4, 1)$	149 : $P_{7815} = (6, 19, 6, 1)$
96 : $P_{5322} = (9, 5, 4, 1)$	150 : $P_{7916} = (11, 22, 6, 1)$
97 : $P_{5379} = (2, 7, 4, 1)$	151 : $P_{7952} = (15, 23, 6, 1)$
98 : $P_{5389} = (12, 7, 4, 1)$	152 : $P_{8014} = (13, 25, 6, 1)$
99 : $P_{5512} = (7, 11, 4, 1)$	153 : $P_{8045} = (12, 26, 6, 1)$
100 : $P_{5525} = (20, 11, 4, 1)$	154 : $P_{8050} = (17, 26, 6, 1)$
101 : $P_{5669} = (4, 16, 4, 1)$	155 : $P_{8255} = (30, 0, 7, 1)$
102 : $P_{5692} = (27, 16, 4, 1)$	156 : $P_{8339} = (18, 3, 7, 1)$
103 : $P_{5748} = (19, 18, 4, 1)$	157 : $P_{8363} = (10, 4, 7, 1)$
104 : $P_{5754} = (25, 18, 4, 1)$	158 : $P_{8600} = (23, 11, 7, 1)$
105 : $P_{5764} = (3, 19, 4, 1)$	159 : $P_{8619} = (10, 12, 7, 1)$
106 : $P_{5783} = (22, 19, 4, 1)$	160 : $P_{8753} = (16, 16, 7, 1)$
107 : $P_{5807} = (14, 20, 4, 1)$	161 : $P_{8756} = (19, 16, 7, 1)$
108 : $P_{5821} = (28, 20, 4, 1)$	162 : $P_{8819} = (18, 18, 7, 1)$
109 : $P_{5834} = (9, 21, 4, 1)$	163 : $P_{8827} = (26, 18, 7, 1)$
110 : $P_{5885} = (28, 22, 4, 1)$	164 : $P_{8889} = (24, 20, 7, 1)$
111 : $P_{5890} = (1, 23, 4, 1)$	165 : $P_{8917} = (20, 21, 7, 1)$
112 : $P_{5897} = (8, 23, 4, 1)$	166 : $P_{9147} = (26, 28, 7, 1)$
113 : $P_{5991} = (6, 26, 4, 1)$	167 : $P_{9297} = (16, 1, 8, 1)$
114 : $P_{5998} = (13, 26, 4, 1)$	168 : $P_{9298} = (17, 1, 8, 1)$
115 : $P_{6301} = (28, 3, 5, 1)$	169 : $P_{9435} = (26, 5, 8, 1)$
116 : $P_{6328} = (23, 4, 5, 1)$	170 : $P_{9450} = (9, 6, 8, 1)$
117 : $P_{6386} = (17, 6, 5, 1)$	171 : $P_{9468} = (27, 6, 8, 1)$
118 : $P_{6399} = (30, 6, 5, 1)$	172 : $P_{9479} = (6, 7, 8, 1)$
119 : $P_{6450} = (17, 8, 5, 1)$	173 : $P_{9572} = (3, 10, 8, 1)$
120 : $P_{6507} = (10, 10, 5, 1)$	174 : $P_{9591} = (22, 10, 8, 1)$
121 : $P_{6521} = (24, 10, 5, 1)$	175 : $P_{9624} = (23, 11, 8, 1)$
122 : $P_{6673} = (16, 15, 5, 1)$	176 : $P_{9631} = (30, 11, 8, 1)$
123 : $P_{6805} = (20, 19, 5, 1)$	177 : $P_{9742} = (13, 15, 8, 1)$
124 : $P_{6816} = (31, 19, 5, 1)$	178 : $P_{9754} = (25, 15, 8, 1)$
125 : $P_{6911} = (30, 22, 5, 1)$	179 : $P_{9802} = (9, 17, 8, 1)$
126 : $P_{6926} = (13, 23, 5, 1)$	180 : $P_{9921} = (0, 21, 8, 1)$
127 : $P_{6929} = (16, 23, 5, 1)$	181 : $P_{9960} = (7, 22, 8, 1)$
128 : $P_{6949} = (4, 24, 5, 1)$	182 : $P_{9981} = (28, 22, 8, 1)$
129 : $P_{6969} = (24, 24, 5, 1)$	183 : $P_{9987} = (2, 23, 8, 1)$
130 : $P_{6977} = (0, 25, 5, 1)$	184 : $P_{9992} = (7, 23, 8, 1)$
131 : $P_{7004} = (27, 25, 5, 1)$	185 : $P_{10224} = (15, 30, 8, 1)$
132 : $P_{7118} = (13, 29, 5, 1)$	186 : $P_{10256} = (15, 31, 8, 1)$
133 : $P_{7174} = (5, 31, 5, 1)$	187 : $P_{10264} = (23, 31, 8, 1)$
134 : $P_{7190} = (21, 31, 5, 1)$	188 : $P_{10299} = (26, 0, 9, 1)$
135 : $P_{7231} = (30, 0, 6, 1)$	189 : $P_{10355} = (18, 2, 9, 1)$
136 : $P_{7278} = (13, 2, 6, 1)$	190 : $P_{10370} = (1, 3, 9, 1)$
137 : $P_{7283} = (18, 2, 6, 1)$	191 : $P_{10382} = (13, 3, 9, 1)$
138 : $P_{7331} = (2, 4, 6, 1)$	192 : $P_{10420} = (19, 4, 9, 1)$
139 : $P_{7368} = (7, 5, 6, 1)$	193 : $P_{10466} = (1, 6, 9, 1)$
140 : $P_{7369} = (8, 5, 6, 1)$	194 : $P_{10469} = (4, 6, 9, 1)$
141 : $P_{7439} = (14, 7, 6, 1)$	195 : $P_{10533} = (4, 8, 9, 1)$
142 : $P_{7462} = (5, 8, 6, 1)$	196 : $P_{10573} = (12, 9, 9, 1)$
143 : $P_{7541} = (20, 10, 6, 1)$	197 : $P_{10645} = (20, 11, 9, 1)$

198 : $P_{10792} = (7, 16, 9, 1)$	252 : $P_{14030} = (13, 21, 12, 1)$
199 : $P_{10832} = (15, 17, 9, 1)$	253 : $P_{14038} = (21, 21, 12, 1)$
200 : $P_{10870} = (21, 18, 9, 1)$	254 : $P_{14147} = (2, 25, 12, 1)$
201 : $P_{11003} = (26, 22, 9, 1)$	255 : $P_{14281} = (8, 29, 12, 1)$
202 : $P_{11007} = (30, 22, 9, 1)$	256 : $P_{14299} = (26, 29, 12, 1)$
203 : $P_{11341} = (12, 1, 10, 1)$	257 : $P_{14326} = (21, 30, 12, 1)$
204 : $P_{11342} = (13, 1, 10, 1)$	258 : $P_{14335} = (30, 30, 12, 1)$
205 : $P_{11692} = (11, 12, 10, 1)$	259 : $P_{14397} = (28, 0, 13, 1)$
206 : $P_{11750} = (5, 14, 10, 1)$	260 : $P_{14531} = (2, 5, 13, 1)$
207 : $P_{11770} = (25, 14, 10, 1)$	261 : $P_{14558} = (29, 5, 13, 1)$
208 : $P_{11796} = (19, 15, 10, 1)$	262 : $P_{14585} = (24, 6, 13, 1)$
209 : $P_{11801} = (24, 15, 10, 1)$	263 : $P_{14594} = (1, 7, 13, 1)$
210 : $P_{11844} = (3, 17, 10, 1)$	264 : $P_{14607} = (14, 7, 13, 1)$
211 : $P_{11897} = (24, 18, 10, 1)$	265 : $P_{14695} = (6, 10, 13, 1)$
212 : $P_{11904} = (31, 18, 10, 1)$	266 : $P_{14706} = (17, 10, 13, 1)$
213 : $P_{11936} = (31, 19, 10, 1)$	267 : $P_{14731} = (10, 11, 13, 1)$
214 : $P_{11939} = (2, 20, 10, 1)$	268 : $P_{14741} = (20, 11, 13, 1)$
215 : $P_{11948} = (11, 20, 10, 1)$	269 : $P_{14768} = (15, 12, 13, 1)$
216 : $P_{11989} = (20, 21, 10, 1)$	270 : $P_{14796} = (11, 13, 13, 1)$
217 : $P_{12069} = (4, 24, 10, 1)$	271 : $P_{14923} = (10, 17, 13, 1)$
218 : $P_{12086} = (21, 24, 10, 1)$	272 : $P_{14939} = (26, 17, 13, 1)$
219 : $P_{12118} = (21, 25, 10, 1)$	273 : $P_{15092} = (19, 22, 13, 1)$
220 : $P_{12120} = (23, 25, 10, 1)$	274 : $P_{15097} = (24, 22, 13, 1)$
221 : $P_{12193} = (0, 28, 10, 1)$	275 : $P_{15120} = (15, 23, 13, 1)$
222 : $P_{12295} = (6, 31, 10, 1)$	276 : $P_{15237} = (4, 27, 13, 1)$
223 : $P_{12316} = (27, 31, 10, 1)$	277 : $P_{15246} = (13, 27, 13, 1)$
224 : $P_{12324} = (3, 0, 11, 1)$	278 : $P_{15268} = (3, 28, 13, 1)$
225 : $P_{12458} = (9, 4, 11, 1)$	279 : $P_{15281} = (16, 28, 13, 1)$
226 : $P_{12482} = (1, 5, 11, 1)$	280 : $P_{15383} = (22, 31, 13, 1)$
227 : $P_{12508} = (27, 5, 11, 1)$	281 : $P_{15389} = (28, 31, 13, 1)$
228 : $P_{12637} = (28, 9, 11, 1)$	282 : $P_{15451} = (26, 1, 14, 1)$
229 : $P_{12657} = (16, 10, 11, 1)$	283 : $P_{15452} = (27, 1, 14, 1)$
230 : $P_{12699} = (26, 11, 11, 1)$	284 : $P_{15609} = (24, 6, 14, 1)$
231 : $P_{12736} = (31, 12, 11, 1)$	285 : $P_{15613} = (28, 6, 14, 1)$
232 : $P_{12758} = (21, 13, 11, 1)$	286 : $P_{15633} = (16, 7, 14, 1)$
233 : $P_{12830} = (29, 15, 11, 1)$	287 : $P_{15645} = (28, 7, 14, 1)$
234 : $P_{12841} = (8, 16, 11, 1)$	288 : $P_{15667} = (18, 8, 14, 1)$
235 : $P_{12962} = (1, 20, 11, 1)$	289 : $P_{15688} = (7, 9, 14, 1)$
236 : $P_{12977} = (16, 20, 11, 1)$	290 : $P_{15699} = (18, 9, 14, 1)$
237 : $P_{13124} = (3, 25, 11, 1)$	291 : $P_{15782} = (5, 12, 14, 1)$
238 : $P_{13140} = (19, 25, 11, 1)$	292 : $P_{15971} = (2, 18, 14, 1)$
239 : $P_{13545} = (8, 6, 12, 1)$	293 : $P_{15989} = (20, 18, 14, 1)$
240 : $P_{13571} = (2, 7, 12, 1)$	294 : $P_{16129} = (0, 23, 14, 1)$
241 : $P_{13596} = (27, 7, 12, 1)$	295 : $P_{16240} = (15, 26, 14, 1)$
242 : $P_{13645} = (12, 9, 12, 1)$	296 : $P_{16318} = (29, 28, 14, 1)$
243 : $P_{13656} = (23, 9, 12, 1)$	297 : $P_{16325} = (4, 29, 14, 1)$
244 : $P_{13674} = (9, 10, 12, 1)$	298 : $P_{16336} = (15, 29, 14, 1)$
245 : $P_{13687} = (22, 10, 12, 1)$	299 : $P_{16359} = (6, 30, 14, 1)$
246 : $P_{13768} = (7, 13, 12, 1)$	300 : $P_{16370} = (17, 30, 14, 1)$
247 : $P_{13819} = (26, 14, 12, 1)$	301 : $P_{16392} = (7, 31, 14, 1)$
248 : $P_{13913} = (24, 17, 12, 1)$	302 : $P_{16393} = (8, 31, 14, 1)$
249 : $P_{13948} = (27, 18, 12, 1)$	303 : $P_{16422} = (5, 0, 15, 1)$
250 : $P_{13985} = (0, 20, 12, 1)$	304 : $P_{16614} = (5, 6, 15, 1)$
251 : $P_{13989} = (4, 20, 12, 1)$	305 : $P_{16617} = (8, 6, 15, 1)$

306 :  $P_{16792} = (23, 11, 15, 1)$   
 307 :  $P_{16843} = (10, 13, 15, 1)$   
 308 :  $P_{16878} = (13, 14, 15, 1)$   
 309 :  $P_{16900} = (3, 15, 15, 1)$   
 310 :  $P_{16940} = (11, 16, 15, 1)$   
 311 :  $P_{16962} = (1, 17, 15, 1)$   
 312 :  $P_{16963} = (2, 17, 15, 1)$   
 313 :  $P_{17267} = (18, 26, 15, 1)$   
 314 :  $P_{17309} = (28, 27, 15, 1)$   
 315 :  $P_{17346} = (1, 29, 15, 1)$   
 316 :  $P_{17358} = (13, 29, 15, 1)$   
 317 :  $P_{17431} = (22, 31, 15, 1)$   
 318 :  $P_{17462} = (21, 0, 16, 1)$   
 319 :  $P_{17557} = (20, 3, 16, 1)$   
 320 :  $P_{17564} = (27, 3, 16, 1)$   
 321 :  $P_{17609} = (8, 5, 16, 1)$   
 322 :  $P_{17613} = (12, 5, 16, 1)$   
 323 :  $P_{17702} = (5, 8, 16, 1)$   
 324 :  $P_{17722} = (25, 8, 16, 1)$   
 325 :  $P_{17735} = (6, 9, 16, 1)$   
 326 :  $P_{17737} = (8, 9, 16, 1)$   
 327 :  $P_{17859} = (2, 13, 16, 1)$   
 328 :  $P_{17873} = (16, 13, 16, 1)$   
 329 :  $P_{17942} = (21, 15, 16, 1)$   
 330 :  $P_{17950} = (29, 15, 16, 1)$   
 331 :  $P_{17962} = (9, 16, 16, 1)$   
 332 :  $P_{17996} = (11, 17, 16, 1)$   
 333 :  $P_{18117} = (4, 21, 16, 1)$   
 334 :  $P_{18139} = (26, 21, 16, 1)$   
 335 :  $P_{18210} = (1, 24, 16, 1)$   
 336 :  $P_{18219} = (10, 24, 16, 1)$   
 337 :  $P_{18264} = (23, 25, 16, 1)$   
 338 :  $P_{18348} = (11, 28, 16, 1)$   
 339 :  $P_{18392} = (23, 29, 16, 1)$   
 340 :  $P_{18399} = (30, 29, 16, 1)$   
 341 :  $P_{18648} = (23, 5, 17, 1)$   
 342 :  $P_{18657} = (0, 6, 17, 1)$   
 343 :  $P_{18659} = (2, 6, 17, 1)$   
 344 :  $P_{18696} = (7, 7, 17, 1)$   
 345 :  $P_{18705} = (16, 7, 17, 1)$   
 346 :  $P_{18739} = (18, 8, 17, 1)$   
 347 :  $P_{18750} = (29, 8, 17, 1)$   
 348 :  $P_{18797} = (12, 10, 17, 1)$   
 349 :  $P_{18920} = (7, 14, 17, 1)$   
 350 :  $P_{18927} = (14, 14, 17, 1)$   
 351 :  $P_{19001} = (24, 16, 17, 1)$   
 352 :  $P_{19058} = (17, 18, 17, 1)$   
 353 :  $P_{19069} = (28, 18, 17, 1)$   
 354 :  $P_{19117} = (12, 20, 17, 1)$   
 355 :  $P_{19124} = (19, 20, 17, 1)$   
 356 :  $P_{19196} = (27, 22, 17, 1)$   
 357 :  $P_{19246} = (13, 24, 17, 1)$   
 358 :  $P_{19260} = (27, 24, 17, 1)$   
 359 :  $P_{19284} = (19, 25, 17, 1)$

360 :  $P_{19470} = (13, 31, 17, 1)$   
 361 :  $P_{19501} = (12, 0, 18, 1)$   
 362 :  $P_{19583} = (30, 2, 18, 1)$   
 363 :  $P_{19641} = (24, 4, 18, 1)$   
 364 :  $P_{19660} = (11, 5, 18, 1)$   
 365 :  $P_{19783} = (6, 9, 18, 1)$   
 366 :  $P_{20082} = (17, 18, 18, 1)$   
 367 :  $P_{20099} = (2, 19, 18, 1)$   
 368 :  $P_{20290} = (1, 25, 18, 1)$   
 369 :  $P_{20291} = (2, 25, 18, 1)$   
 370 :  $P_{20322} = (1, 26, 18, 1)$   
 371 :  $P_{20337} = (16, 26, 18, 1)$   
 372 :  $P_{20384} = (31, 27, 18, 1)$   
 373 :  $P_{20429} = (12, 29, 18, 1)$   
 374 :  $P_{20431} = (14, 29, 18, 1)$   
 375 :  $P_{20488} = (7, 31, 18, 1)$   
 376 :  $P_{20549} = (4, 1, 19, 1)$   
 377 :  $P_{20550} = (5, 1, 19, 1)$   
 378 :  $P_{20621} = (12, 3, 19, 1)$   
 379 :  $P_{20691} = (18, 5, 19, 1)$   
 380 :  $P_{20737} = (0, 7, 19, 1)$   
 381 :  $P_{20795} = (26, 8, 19, 1)$   
 382 :  $P_{20798} = (29, 8, 19, 1)$   
 383 :  $P_{20815} = (14, 9, 19, 1)$   
 384 :  $P_{20829} = (28, 9, 19, 1)$   
 385 :  $P_{20881} = (16, 11, 19, 1)$   
 386 :  $P_{20887} = (22, 11, 19, 1)$   
 387 :  $P_{20972} = (11, 14, 19, 1)$   
 388 :  $P_{21004} = (11, 15, 19, 1)$   
 389 :  $P_{21021} = (28, 15, 19, 1)$   
 390 :  $P_{21306} = (25, 24, 19, 1)$   
 391 :  $P_{21326} = (13, 25, 19, 1)$   
 392 :  $P_{21331} = (18, 25, 19, 1)$   
 393 :  $P_{21433} = (24, 28, 19, 1)$   
 394 :  $P_{21436} = (27, 28, 19, 1)$   
 395 :  $P_{21462} = (21, 29, 19, 1)$   
 396 :  $P_{21465} = (24, 29, 19, 1)$   
 397 :  $P_{21556} = (19, 0, 20, 1)$   
 398 :  $P_{21645} = (12, 3, 20, 1)$   
 399 :  $P_{21659} = (26, 3, 20, 1)$   
 400 :  $P_{21674} = (9, 4, 20, 1)$   
 401 :  $P_{21692} = (27, 4, 20, 1)$   
 402 :  $P_{21756} = (27, 6, 20, 1)$   
 403 :  $P_{21813} = (20, 8, 20, 1)$   
 404 :  $P_{21874} = (17, 10, 20, 1)$   
 405 :  $P_{21967} = (14, 13, 20, 1)$   
 406 :  $P_{21976} = (23, 13, 20, 1)$   
 407 :  $P_{22014} = (29, 14, 20, 1)$   
 408 :  $P_{22053} = (4, 16, 20, 1)$   
 409 :  $P_{22091} = (10, 17, 20, 1)$   
 410 :  $P_{22102} = (21, 17, 20, 1)$   
 411 :  $P_{22239} = (30, 21, 20, 1)$   
 412 :  $P_{22336} = (31, 24, 20, 1)$   
 413 :  $P_{22352} = (15, 25, 20, 1)$

414 :  $P_{22409} = (8, 27, 20, 1)$   
 415 :  $P_{22507} = (10, 30, 20, 1)$   
 416 :  $P_{22523} = (26, 30, 20, 1)$   
 417 :  $P_{22580} = (19, 0, 21, 1)$   
 418 :  $P_{22730} = (9, 5, 21, 1)$   
 419 :  $P_{22852} = (3, 9, 21, 1)$   
 420 :  $P_{22858} = (9, 9, 21, 1)$   
 421 :  $P_{22985} = (8, 13, 21, 1)$   
 422 :  $P_{22990} = (13, 13, 21, 1)$   
 423 :  $P_{23065} = (24, 15, 21, 1)$   
 424 :  $P_{23087} = (14, 16, 21, 1)$   
 425 :  $P_{23300} = (3, 23, 21, 1)$   
 426 :  $P_{23407} = (14, 26, 21, 1)$   
 427 :  $P_{23486} = (29, 28, 21, 1)$   
 428 :  $P_{23496} = (7, 29, 21, 1)$   
 429 :  $P_{23595} = (10, 0, 22, 1)$   
 430 :  $P_{23656} = (7, 2, 22, 1)$   
 431 :  $P_{23668} = (19, 2, 22, 1)$   
 432 :  $P_{23727} = (14, 4, 22, 1)$   
 433 :  $P_{23846} = (5, 8, 22, 1)$   
 434 :  $P_{23871} = (30, 8, 22, 1)$   
 435 :  $P_{24005} = (4, 13, 22, 1)$   
 436 :  $P_{24016} = (15, 13, 22, 1)$   
 437 :  $P_{24055} = (22, 14, 22, 1)$   
 438 :  $P_{24132} = (3, 17, 22, 1)$   
 439 :  $P_{24134} = (5, 17, 22, 1)$   
 440 :  $P_{24218} = (25, 19, 22, 1)$   
 441 :  $P_{24243} = (18, 20, 22, 1)$   
 442 :  $P_{24266} = (9, 21, 22, 1)$   
 443 :  $P_{24329} = (8, 23, 22, 1)$   
 444 :  $P_{24440} = (23, 26, 22, 1)$   
 445 :  $P_{24447} = (30, 26, 22, 1)$   
 446 :  $P_{24462} = (13, 27, 22, 1)$   
 447 :  $P_{24517} = (4, 29, 22, 1)$   
 448 :  $P_{24571} = (26, 30, 22, 1)$   
 449 :  $P_{24619} = (10, 0, 23, 1)$   
 450 :  $P_{24675} = (2, 2, 23, 1)$   
 451 :  $P_{24687} = (14, 2, 23, 1)$   
 452 :  $P_{24788} = (19, 5, 23, 1)$   
 453 :  $P_{24850} = (17, 7, 23, 1)$   
 454 :  $P_{25008} = (15, 12, 23, 1)$   
 455 :  $P_{25104} = (15, 15, 23, 1)$   
 456 :  $P_{25106} = (17, 15, 23, 1)$   
 457 :  $P_{25206} = (21, 18, 23, 1)$   
 458 :  $P_{25402} = (25, 24, 23, 1)$   
 459 :  $P_{25437} = (28, 25, 23, 1)$   
 460 :  $P_{25492} = (19, 27, 23, 1)$   
 461 :  $P_{25647} = (14, 0, 24, 1)$   
 462 :  $P_{25705} = (8, 2, 24, 1)$   
 463 :  $P_{25765} = (4, 4, 24, 1)$   
 464 :  $P_{25791} = (30, 4, 24, 1)$   
 465 :  $P_{25848} = (23, 6, 24, 1)$   
 466 :  $P_{25863} = (6, 7, 24, 1)$   
 467 :  $P_{25949} = (28, 9, 24, 1)$

468 :  $P_{26185} = (8, 17, 24, 1)$   
 469 :  $P_{26317} = (12, 21, 24, 1)$   
 470 :  $P_{26496} = (31, 26, 24, 1)$   
 471 :  $P_{26637} = (12, 31, 24, 1)$   
 472 :  $P_{26656} = (31, 31, 24, 1)$   
 473 :  $P_{26671} = (14, 0, 25, 1)$   
 474 :  $P_{26748} = (27, 2, 25, 1)$   
 475 :  $P_{26772} = (19, 3, 25, 1)$   
 476 :  $P_{26777} = (24, 3, 25, 1)$   
 477 :  $P_{26793} = (8, 4, 25, 1)$   
 478 :  $P_{26806} = (21, 4, 25, 1)$   
 479 :  $P_{26919} = (6, 8, 25, 1)$   
 480 :  $P_{26994} = (17, 10, 25, 1)$   
 481 :  $P_{26996} = (19, 10, 25, 1)$   
 482 :  $P_{27046} = (5, 12, 25, 1)$   
 483 :  $P_{27058} = (17, 12, 25, 1)$   
 484 :  $P_{27199} = (30, 16, 25, 1)$   
 485 :  $P_{27268} = (3, 19, 25, 1)$   
 486 :  $P_{27377} = (16, 22, 25, 1)$   
 487 :  $P_{27435} = (10, 24, 25, 1)$   
 488 :  $P_{27537} = (16, 27, 25, 1)$   
 489 :  $P_{27552} = (31, 27, 25, 1)$   
 490 :  $P_{27564} = (11, 28, 25, 1)$   
 491 :  $P_{27594} = (9, 29, 25, 1)$   
 492 :  $P_{27642} = (25, 30, 25, 1)$   
 493 :  $P_{27877} = (4, 6, 26, 1)$   
 494 :  $P_{27971} = (2, 9, 26, 1)$   
 495 :  $P_{28057} = (24, 11, 26, 1)$   
 496 :  $P_{28059} = (26, 11, 26, 1)$   
 497 :  $P_{28072} = (7, 12, 26, 1)$   
 498 :  $P_{28140} = (11, 14, 26, 1)$   
 499 :  $P_{28154} = (25, 14, 26, 1)$   
 500 :  $P_{28308} = (19, 19, 26, 1)$   
 501 :  $P_{28317} = (28, 19, 26, 1)$   
 502 :  $P_{28331} = (10, 20, 26, 1)$   
 503 :  $P_{28355} = (2, 21, 26, 1)$   
 504 :  $P_{28357} = (4, 21, 26, 1)$   
 505 :  $P_{28388} = (3, 22, 26, 1)$   
 506 :  $P_{28395} = (10, 22, 26, 1)$   
 507 :  $P_{28566} = (21, 27, 26, 1)$   
 508 :  $P_{28604} = (27, 28, 26, 1)$   
 509 :  $P_{28605} = (28, 28, 26, 1)$   
 510 :  $P_{28609} = (0, 29, 26, 1)$   
 511 :  $P_{28625} = (16, 29, 26, 1)$   
 512 :  $P_{28644} = (3, 30, 26, 1)$   
 513 :  $P_{28728} = (23, 0, 27, 1)$   
 514 :  $P_{28785} = (16, 2, 27, 1)$   
 515 :  $P_{28796} = (27, 2, 27, 1)$   
 516 :  $P_{29092} = (3, 12, 27, 1)$   
 517 :  $P_{29103} = (14, 12, 27, 1)$   
 518 :  $P_{29165} = (12, 14, 27, 1)$   
 519 :  $P_{29173} = (20, 14, 27, 1)$   
 520 :  $P_{29199} = (14, 15, 27, 1)$   
 521 :  $P_{29214} = (29, 15, 27, 1)$

522 :  $P_{29253} = (4, 17, 27, 1)$   
 523 :  $P_{29271} = (22, 17, 27, 1)$   
 524 :  $P_{29304} = (23, 18, 27, 1)$   
 525 :  $P_{29306} = (25, 18, 27, 1)$   
 526 :  $P_{29352} = (7, 20, 27, 1)$   
 527 :  $P_{29378} = (1, 21, 27, 1)$   
 528 :  $P_{29407} = (30, 21, 27, 1)$   
 529 :  $P_{29446} = (5, 23, 27, 1)$   
 530 :  $P_{29454} = (13, 23, 27, 1)$   
 531 :  $P_{29504} = (31, 24, 27, 1)$   
 532 :  $P_{29512} = (7, 25, 27, 1)$   
 533 :  $P_{29513} = (8, 25, 27, 1)$   
 534 :  $P_{29568} = (31, 26, 27, 1)$   
 535 :  $P_{29584} = (15, 27, 27, 1)$   
 536 :  $P_{29737} = (8, 0, 28, 1)$   
 537 :  $P_{29855} = (30, 3, 28, 1)$   
 538 :  $P_{30086} = (5, 11, 28, 1)$   
 539 :  $P_{30092} = (11, 11, 28, 1)$   
 540 :  $P_{30175} = (30, 13, 28, 1)$   
 541 :  $P_{30284} = (11, 17, 28, 1)$   
 542 :  $P_{30454} = (21, 22, 28, 1)$   
 543 :  $P_{30487} = (22, 23, 28, 1)$   
 544 :  $P_{30502} = (5, 24, 28, 1)$   
 545 :  $P_{30603} = (10, 27, 28, 1)$   
 546 :  $P_{30620} = (27, 27, 28, 1)$   
 547 :  $P_{30728} = (7, 31, 28, 1)$   
 548 :  $P_{30761} = (8, 0, 29, 1)$   
 549 :  $P_{30827} = (10, 2, 29, 1)$   
 550 :  $P_{30916} = (3, 5, 29, 1)$   
 551 :  $P_{30939} = (26, 5, 29, 1)$   
 552 :  $P_{30976} = (31, 6, 29, 1)$   
 553 :  $P_{30995} = (18, 7, 29, 1)$   
 554 :  $P_{31102} = (29, 10, 29, 1)$   
 555 :  $P_{31151} = (14, 12, 29, 1)$   
 556 :  $P_{31165} = (28, 12, 29, 1)$   
 557 :  $P_{31185} = (16, 13, 29, 1)$   
 558 :  $P_{31213} = (12, 14, 29, 1)$   
 559 :  $P_{31267} = (2, 16, 29, 1)$   
 560 :  $P_{31276} = (11, 16, 29, 1)$   
 561 :  $P_{31364} = (3, 19, 29, 1)$   
 562 :  $P_{31375} = (14, 19, 29, 1)$   
 563 :  $P_{31395} = (2, 20, 29, 1)$

564 :  $P_{31641} = (24, 27, 29, 1)$   
 565 :  $P_{31647} = (30, 27, 29, 1)$   
 566 :  $P_{31668} = (19, 28, 29, 1)$   
 567 :  $P_{31735} = (22, 30, 29, 1)$   
 568 :  $P_{31811} = (2, 1, 30, 1)$   
 569 :  $P_{31812} = (3, 1, 30, 1)$   
 570 :  $P_{31904} = (31, 3, 30, 1)$   
 571 :  $P_{32069} = (4, 9, 30, 1)$   
 572 :  $P_{32094} = (29, 9, 30, 1)$   
 573 :  $P_{32106} = (9, 10, 30, 1)$   
 574 :  $P_{32138} = (9, 11, 30, 1)$   
 575 :  $P_{32150} = (21, 11, 30, 1)$   
 576 :  $P_{32363} = (10, 18, 30, 1)$   
 577 :  $P_{32374} = (21, 18, 30, 1)$   
 578 :  $P_{32397} = (12, 19, 30, 1)$   
 579 :  $P_{32405} = (20, 19, 30, 1)$   
 580 :  $P_{32424} = (7, 20, 30, 1)$   
 581 :  $P_{32440} = (23, 20, 30, 1)$   
 582 :  $P_{32462} = (13, 21, 30, 1)$   
 583 :  $P_{32472} = (23, 21, 30, 1)$   
 584 :  $P_{32497} = (16, 22, 30, 1)$   
 585 :  $P_{32512} = (31, 22, 30, 1)$   
 586 :  $P_{32535} = (22, 23, 30, 1)$   
 587 :  $P_{32545} = (0, 24, 30, 1)$   
 588 :  $P_{32626} = (17, 26, 30, 1)$   
 589 :  $P_{32818} = (17, 0, 31, 1)$   
 590 :  $P_{32888} = (23, 2, 31, 1)$   
 591 :  $P_{32906} = (9, 3, 31, 1)$   
 592 :  $P_{33186} = (1, 12, 31, 1)$   
 593 :  $P_{33189} = (4, 12, 31, 1)$   
 594 :  $P_{33232} = (15, 13, 31, 1)$   
 595 :  $P_{33305} = (24, 15, 31, 1)$   
 596 :  $P_{33402} = (25, 18, 31, 1)$   
 597 :  $P_{33451} = (10, 20, 31, 1)$   
 598 :  $P_{33458} = (17, 20, 31, 1)$   
 599 :  $P_{33506} = (1, 22, 31, 1)$   
 600 :  $P_{33532} = (27, 22, 31, 1)$   
 601 :  $P_{33679} = (14, 27, 31, 1)$   
 602 :  $P_{33788} = (27, 30, 31, 1)$   
 603 :  $P_{33798} = (5, 31, 31, 1)$

## Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	1	1	0	0
1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	1	1
2	1	1	0	1	0	1	1	0	1	0	1	0	0	1	0	0	1	0	0	0	0
3	1	0	1	0	1	0	0	0	1	0	1	1	1	0	0	0	1	1	0	0	1
4	1	0	0	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	1	0	0
5	0	0	1	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	0	0	1
6	0	0	1	0	1	0	0	1	0	0	1	0	0	1	1	0	1	0	1	0	0
7	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0
8	1	0	1	1	0	0	0	1	0	1	1	1	1	1	1	0	1	0	0	0	0
9	1	0	0	0	0	1	0	0	0	0	1	1	1	0	1	1	1	0	0	0	0
10	1	0	1	1	0	0	1	0	1	1	0	0	0	1	0	0	0	1	0	1	1
11	0	0	1	1	0	0	0	1	0	1	0	0	0	1	0	1	0	0	1	1	0
12	0	1	0	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	1	1	0
13	0	1	0	0	1	1	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0
14	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	1	1	1
15	0	1	0	0	1	0	1	0	1	1	0	1	0	0	0	0	1	0	0	1	0
16	0	1	0	1	0	0	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0
17	1	0	1	1	0	1	0	0	1	0	0	0	0	0	1	1	0	1	1	0	0
18	1	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	1	0	0	1	0
19	0	1	0	0	1	0	0	1	0	0	1	1	1	0	1	0	0	1	0	0	0
20	0	1	0	1	0	1	0	1	0	0	1	0	0	0	1	1	0	0	1	0	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	$\ell_1$	$\ell_2$	$\ell_3$	$\ell_4$	$\ell_7$	$\ell_8$	$\ell_9$	$\ell_{10}$	$\ell_{17}$	$\ell_{18}$
in point	$P_{2100}$	$P_{2083}$	$P_{2083}$	$P_{2091}$	$P_{2097}$	$P_{2083}$	$P_{2093}$	$P_{2083}$	$P_{2083}$	$P_{2113}$

Line 1 intersects

Line	$\ell_0$	$\ell_2$	$\ell_{12}$	$\ell_{13}$	$\ell_{15}$	$\ell_{16}$	$\ell_{19}$	$\ell_{20}$
in point	$P_{2100}$	$P_{1185}$	$P_{20012}$	$P_{15013}$	$P_{23374}$	$P_{11062}$	$P_{30795}$	$P_{29800}$

Line 2 intersects

Line	$\ell_0$	$\ell_1$	$\ell_3$	$\ell_5$	$\ell_6$	$\ell_8$	$\ell_{10}$	$\ell_{11}$	$\ell_{14}$	$\ell_{17}$
in point	$P_{2083}$	$P_{1185}$	$P_{2083}$	$P_{30796}$	$P_{5641}$	$P_{2083}$	$P_{2083}$	$P_{6583}$	$P_{3271}$	$P_{2083}$

Line 3 intersects

Line	$\ell_0$	$\ell_2$	$\ell_4$	$\ell_8$	$\ell_{10}$	$\ell_{11}$	$\ell_{12}$	$\ell_{16}$	$\ell_{17}$	$\ell_{20}$
in point	$P_{2083}$	$P_{2083}$	$P_{1236}$	$P_{2083}$	$P_{2083}$	$P_{23632}$	$P_{18443}$	$P_{5717}$	$P_{2083}$	$P_{19322}$

Line 4 intersects

Line	$\ell_0$	$\ell_3$	$\ell_5$	$\ell_6$	$\ell_{13}$	$\ell_{14}$	$\ell_{15}$	$\ell_{19}$
in point	$P_{2091}$	$P_{1236}$	$P_{29948}$	$P_{12573}$	$P_{24758}$	$P_{23631}$	$P_{29649}$	$P_{10704}$

Line 5 intersects

Line	$\ell_2$	$\ell_4$	$\ell_7$	$\ell_9$	$\ell_{12}$	$\ell_{13}$	$\ell_{17}$	$\ell_{20}$
in point	$P_{30796}$	$P_{29948}$	$P_{8664}$	$P_{3822}$	$P_{6291}$	$P_{10349}$	$P_{4702}$	$P_{16932}$

Line 6 intersects

Line	$\ell_2$	$\ell_4$	$\ell_7$	$\ell_{10}$	$\ell_{12}$	$\ell_{15}$	$\ell_{16}$	$\ell_{18}$
in point	$P_{5641}$	$P_{12573}$	$P_{7252}$	$P_{17854}$	$P_{20698}$	$P_{4992}$	$P_{31895}$	$P_{32938}$

Line 7 intersects

Line	$\ell_0$	$\ell_5$	$\ell_6$	$\ell_8$	$\ell_{11}$	$\ell_{16}$	$\ell_{19}$	$\ell_{20}$
in point	$P_{2097}$	$P_{8664}$	$P_{7252}$	$P_{1453}$	$P_{5980}$	$P_{16499}$	$P_{33721}$	$P_{26565}$

Line 8 intersects

Line	$\ell_0$	$\ell_2$	$\ell_3$	$\ell_7$	$\ell_{10}$	$\ell_{12}$	$\ell_{13}$	$\ell_{14}$	$\ell_{15}$	$\ell_{17}$
in point	$P_{2083}$	$P_{2083}$	$P_{2083}$	$P_{1453}$	$P_{2083}$	$P_{15223}$	$P_{7251}$	$P_{29023}$	$P_{27861}$	$P_{2083}$

Line 9 intersects

Line	$\ell_0$	$\ell_5$	$\ell_{10}$	$\ell_{11}$	$\ell_{12}$	$\ell_{14}$	$\ell_{15}$	$\ell_{16}$
in point	$P_{2093}$	$P_{3822}$	$P_{1611}$	$P_{25251}$	$P_{17112}$	$P_{13216}$	$P_{26173}$	$P_{26719}$

Line 10 intersects

Line	$\ell_0$	$\ell_2$	$\ell_3$	$\ell_6$	$\ell_8$	$\ell_9$	$\ell_{13}$	$\ell_{17}$	$\ell_{19}$	$\ell_{20}$
in point	$P_{2083}$	$P_{2083}$	$P_{2083}$	$P_{17854}$	$P_{2083}$	$P_{1611}$	$P_{13447}$	$P_{2083}$	$P_{14959}$	$P_{26720}$

Line 11 intersects

Line	$\ell_2$	$\ell_3$	$\ell_7$	$\ell_9$	$\ell_{13}$	$\ell_{15}$	$\ell_{18}$	$\ell_{19}$
in point	$P_{6583}$	$P_{23632}$	$P_{5980}$	$P_{25251}$	$P_{33222}$	$P_{12475}$	$P_{23449}$	$P_{18634}$

Line 12 intersects

Line	$\ell_1$	$\ell_3$	$\ell_5$	$\ell_6$	$\ell_8$	$\ell_9$	$\ell_{18}$	$\ell_{19}$
in point	$P_{20012}$	$P_{18443}$	$P_{6291}$	$P_{20698}$	$P_{15223}$	$P_{17112}$	$P_{21577}$	$P_{9799}$

Line 13 intersects

Line	$\ell_1$	$\ell_4$	$\ell_5$	$\ell_8$	$\ell_{10}$	$\ell_{11}$	$\ell_{16}$	$\ell_{18}$
in point	$P_{15013}$	$P_{24758}$	$P_{10349}$	$P_{7251}$	$P_{13447}$	$P_{33222}$	$P_{28080}$	$P_{8945}$

Line 14 intersects

Line	$\ell_2$	$\ell_4$	$\ell_8$	$\ell_9$	$\ell_{16}$	$\ell_{18}$	$\ell_{19}$	$\ell_{20}$
in point	$P_{3271}$	$P_{23631}$	$P_{29023}$	$P_{13216}$	$P_{16254}$	$P_{20232}$	$P_{11701}$	$P_{13900}$

Line 15 intersects

Line	$\ell_1$	$\ell_4$	$\ell_6$	$\ell_8$	$\ell_9$	$\ell_{11}$	$\ell_{17}$	$\ell_{20}$
in point	$P_{23374}$	$P_{29649}$	$P_{4992}$	$P_{27861}$	$P_{26173}$	$P_{12475}$	$P_{21578}$	$P_{20370}$

Line 16 intersects

Line	$\ell_1$	$\ell_3$	$\ell_6$	$\ell_7$	$\ell_9$	$\ell_{13}$	$\ell_{14}$	$\ell_{17}$
in point	$P_{11062}$	$P_{5717}$	$P_{31895}$	$P_{16499}$	$P_{26719}$	$P_{28080}$	$P_{16254}$	$P_{3476}$

Line 17 intersects

Line	$\ell_0$	$\ell_2$	$\ell_3$	$\ell_5$	$\ell_8$	$\ell_{10}$	$\ell_{15}$	$\ell_{16}$	$\ell_{18}$	$\ell_{19}$
in point	$P_{2083}$	$P_{2083}$	$P_{2083}$	$P_{4702}$	$P_{2083}$	$P_{2083}$	$P_{21578}$	$P_{3476}$	$P_{1905}$	$P_{28826}$

Line 18 intersects

Line	$\ell_0$	$\ell_6$	$\ell_{11}$	$\ell_{12}$	$\ell_{13}$	$\ell_{14}$	$\ell_{17}$	$\ell_{20}$
in point	$P_{2113}$	$P_{32938}$	$P_{23449}$	$P_{21577}$	$P_{8945}$	$P_{20232}$	$P_{1905}$	$P_{17635}$

Line 19 intersects

Line	$\ell_1$	$\ell_4$	$\ell_7$	$\ell_{10}$	$\ell_{11}$	$\ell_{12}$	$\ell_{14}$	$\ell_{17}$
in point	$P_{30795}$	$P_{10704}$	$P_{33721}$	$P_{14959}$	$P_{18634}$	$P_{9799}$	$P_{11701}$	$P_{28826}$



Line 20 intersects

Line	$\ell_1$	$\ell_3$	$\ell_5$	$\ell_7$	$\ell_{10}$	$\ell_{14}$	$\ell_{15}$	$\ell_{18}$
in point	$P_{29800}$	$P_{19322}$	$P_{16932}$	$P_{26565}$	$P_{26720}$	$P_{13900}$	$P_{20370}$	$P_{17635}$

The surface has 1217 points:

Too many to print.