Rank-74296 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_2^3 + X_0^2X_1 + X_0^2X_2 + X_1^2X_3 + X_0X_3^2 + X_0X_1X_2 = 0$$

(1, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(32) is 1142982694

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:

$$\ell_0 = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{array}\right]_{34914} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{array}\right]_{34914} = \mathbf{Pl}(1,0,1,1,1,1)_{70563}$$

$$\ell_1 = \left[\begin{array}{cccc} 1 & 0 & \eta^{6} & \eta^{17} \\ 0 & 1 & \eta^{4} & \eta^{12} \end{array}\right]_{653690} = \left[\begin{array}{cccc} 1 & 0 & 10 & 19 \\ 0 & 1 & 16 & 14 \end{array}\right]_{653690} = \mathbf{Pl}(24,17,12,7,10,1)_{377578}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{3} & \eta^{9} \end{array}\right]_{35721} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 8 & 26 \end{array}\right]_{35721} = \mathbf{Pl}(2,18,1,1,26,1)_{891629}$$

$$\ell_3 = \left[\begin{array}{cccc} 1 & 0 & \eta^{30} & \eta^{18} \\ 0 & 1 & \eta^{14} & \eta^{11} \end{array}\right]_{120751} = \left[\begin{array}{cccc} 1 & 0 & 18 & 3 \\ 0 & 1 & 29 & 7 \end{array}\right]_{120751} = \mathbf{Pl}(28,3,14,6,14,1)_{510789}$$

$$\ell_4 = \left[\begin{array}{cccc} 1 & 0 & \eta^{5} & \eta^{8} \\ 0 & 1 & \eta^{29} & \eta^{25} \end{array}\right]_{445806} = \left[\begin{array}{cccc} 1 & 0 & 5 & 13 \\ 0 & 1 & 9 & 25 \end{array}\right]_{445806} = \mathbf{Pl}(31,27,22,8,12,1)_{452729}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & 0 & \eta^{29} & \eta^{5} \\ 0 & 1 & \eta^{28} & \eta^{22} \end{array}\right]_{179327} = \left[\begin{array}{cccc} 1 & 0 & 9 & 5 \\ 0 & 1 & 22 & 21 \end{array}\right]_{179327} = \mathbf{Pl}(23,5,30,20,30,1)_{1049657}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{6} & \eta^{18} \end{array}\right]_{34987} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 10 & 3 \end{array}\right]_{34987} = \mathbf{Pl}(4,9,1,1,3,1)_{138114}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & 0 & \eta^{12} & \eta^{3} \\ 0 & 1 & \eta^{8} & \eta^{24} \end{array}\right]_{286363} = \left[\begin{array}{cccc} 1 & 0 & 14 & 8 \\ 0 & 1 & 13 & 30 \end{array}\right]_{286363} = \mathbf{Pl}(7,12,26,21,14,1)_{521587}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & 0 & \eta^{10} & \eta^{16} \\ 0 & 1 & \eta^{27} & \eta^{19} \end{array}\right]_{931420} = \left[\begin{array}{cccc} 1 & 0 & 17 & 27 \\ 0 & 1 & 11 & 6 \end{array}\right]_{931420} = \mathbf{Pl}(18,2,25,10,26,1)_{914089}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & 0 & \eta^{9} & \eta^{2} \\ 0 & 1 & \eta^{15} & \eta^{14} \end{array}\right]_{163737} = \left[\begin{array}{cccc} 1 & 0 & 26 & 4 \\ 0 & 1 & 31 & 29 \end{array}\right]_{163737} = \mathbf{Pl}(11,16,20,30,5,1)_{221852}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{24} & \eta^{10} \end{array}\right]_{35455} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 30 & 17 \end{array}\right]_{35455} = \mathbf{Pl}(13,15,1,1,17,1)_{597140}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & 0 & \eta^{17} & \eta^{12} \\ 0 & 1 & \eta & \eta^{3} \end{array}\right]_{493877} = \left[\begin{array}{cccc} 1 & 0 & 19 & 14 \\ 0 & 1 & 2 & 8 \end{array}\right]_{493877} = \mathbf{Pl}(28,3,5,23,19,1)_{666378}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & 0 & \eta^{23} & \eta^{20} \\ 0 & 1 & \eta^{19} & \eta^{26} \end{array}\right]_{422485} = \left[\begin{array}{cccc} 1 & 0 & 15 & 12 \\ 0 & 1 & 6 & 23 \end{array}\right]_{422485} = \mathbf{Pl}(7,12,8,22,8,1)_{308865}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & 0 & \eta^{27} & \eta^{10} \\ 0 & 1 & \eta^{25} & \eta^{13} \end{array}\right]_{587556} = \left[\begin{array}{cccc} 1 & 0 & 11 & 17 \\ 0 & 1 & 25 & 28 \end{array}\right]_{587556} = \mathbf{Pl}(24,17,19,29,19,1)_{679177}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{12} & \eta^{5} \end{array}\right]_{35055} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 14 & 5 \end{array}\right]_{35055} = \mathbf{Pl}(16,11,1,1,5,1)_{204032}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & 0 & \eta^{24} & \eta^{6} \\ 0 & 1 & \eta^{16} & \eta^{17} \end{array}\right]_{370585} = \left[\begin{array}{cccc} 1 & 0 & 30 & 10 \\ 0 & 1 & 27 & 19 \end{array}\right]_{370585} = \mathbf{Pl}(21,26,3,28,30,1)_{1024111}$$

$$\ell_{16} = \left[\begin{array}{cccc} 1 & 0 & \eta^{20} & \eta \\ 0 & 1 & \eta^{23} & \eta^{7} \end{array}\right]_{80987} = \left[\begin{array}{cccc} 1 & 0 & 12 & 2 \\ 0 & 1 & 15 & 20 \end{array}\right]_{80987} = \mathbf{Pl}(9,4,6,14,3,1)_{143265}$$

$$\ell_{17} = \left[\begin{array}{cccc} 1 & 0 & \eta^{18} & \eta^{4} \\ 0 & 1 & \eta^{30} & \eta^{28} \end{array}\right]_{545077} = \left[\begin{array}{cccc} 1 & 0 & 3 & 16 \\ 0 & 1 & 18 & 22 \end{array}\right]_{545077} = \mathbf{Pl}(15,13,29,19,17,1)_{622469}$$

$$\ell_{18} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & \eta^{17} & \eta^{20} \end{array}\right]_{35284} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 19 & 12 \end{array}\right]_{35284} = \mathbf{Pl}(27,31,1,1,12,1)_{433257}$$

$$\ell_{19} = \left[\begin{array}{cccc} 1 & 0 & \eta^{3} & \eta^{24} \\ 0 & 1 & \eta^{2} & \eta^{6} \end{array}\right]_{1023500} = \left[\begin{array}{cccc} 1 & 0 & 8 & 30 \\ 0 & 1 & 4 & 10 \end{array}\right]_{1023500} = \mathbf{Pl}(23,5,17,24,8,1)_{317096}$$

$$\ell_{20} = \left[\begin{array}{cccc} 1 & 0 & \eta^{15} & \eta^{9} \\ 0 & 1 & \eta^{7} & \eta^{21} \end{array}\right]_{912979} = \left[\begin{array}{cccc} 1 & 0 & 31 & 26 \\ 0 & 1 & 20 & 24 \end{array}\right]_{912979} = \mathbf{Pl}(21,26,10,25,10,1)_{375684}$$

Rank of lines: (34914, 653690, 35721, 120751, 445806, 179327, 34987, 286363, 931420, 163737, 35455, 493877, 422485, 587556, 35055, 370585, 80987, 545077, 35284, 1023500, 912979)
Rank of points on Klein quadric: (70563, 377578, 891629, 510789, 452729, 1049657, 138114, 521587, 914089, 221852, 597140, 666378, 308865, 679177, 204032, 1024111, 143265, 622469, 433257, 317096, 375684)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 75 Double points:
The double points on the surface are:

$P_{3006} = (29, 28, 1, 1) = \ell_0 \cap \ell_4$
$P_{2839} = (22, 23, 1, 1) = \ell_0 \cap \ell_8$
$P_{2311} = (6, 7, 1, 1) = \ell_0 \cap \ell_9$
$P_{2874} = (25, 24, 1, 1) = \ell_0 \cap \ell_{16}$
$P_{2773} = (20, 21, 1, 1) = \ell_0 \cap \ell_{17}$
$P_{8947} = (18, 22, 7, 1) = \ell_1 \cap \ell_4$
$P_{25236} = (19, 19, 23, 1) = \ell_1 \cap \ell_8$
$P_{20306} = (17, 25, 18, 1) = \ell_1 \cap \ell_{10}$
$P_{19469} = (12, 31, 17, 1) = \ell_1 \cap \ell_{11}$
$P_{1832} = (6, 24, 0, 1) = \ell_1 \cap \ell_{13}$
$P_{18376} = (7, 29, 16, 1) = \ell_1 \cap \ell_{14}$
$P_{27972} = (3, 9, 26, 1) = \ell_1 \cap \ell_{15}$
$P_{6757} = (4, 18, 5, 1) = \ell_1 \cap \ell_{17}$
$P_{31695} = (14, 29, 29, 1) = \ell_2 \cap \ell_4$
$P_{9837} = (12, 18, 8, 1) = \ell_2 \cap \ell_5$
$P_{3320} = (23, 6, 2, 1) = \ell_2 \cap \ell_{11}$
$P_{30752} = (31, 31, 28, 1) = \ell_2 \cap \ell_{12}$
$P_{12987} = (26, 20, 11, 1) = \ell_2 \cap \ell_{15}$
$P_{4985} = (24, 26, 3, 1) = \ell_3 \cap \ell_4$
$P_{14579} = (18, 6, 13, 1) = \ell_3 \cap \ell_5$
$P_{3874} = (1, 24, 2, 1) = \ell_3 \cap \ell_8$
$P_{30876} = (27, 3, 29, 1) = \ell_3 \cap \ell_9$
$P_{1976} = (22, 28, 0, 1) = \ell_3 \cap \ell_{11}$
$P_{25930} = (9, 9, 24, 1) = \ell_3 \cap \ell_{14}$
$P_{21522} = (17, 31, 19, 1) = \ell_3 \cap \ell_{18}$
$P_{18272} = (31, 25, 16, 1) = \ell_3 \cap \ell_{20}$
$P_{18769} = (16, 9, 17, 1) = \ell_4 \cap \ell_7$
$P_{27205} = (4, 17, 25, 1) = \ell_4 \cap \ell_{13}$
$P_{30719} = (30, 30, 28, 1) = \ell_4 \cap \ell_{19}$
$P_{29442} = (1, 23, 27, 1) = \ell_4 \cap \ell_{20}$
$P_{6280} = (7, 3, 5, 1) = \ell_5 \cap \ell_8$
$P_{8588} = (11, 11, 7, 1) = \ell_5 \cap \ell_{10}$
$P_{29354} = (9, 20, 27, 1) = \ell_5 \cap \ell_{13}$
$P_{5378} = (1, 7, 4, 1) = \ell_5 \cap \ell_{16}$
$P_{23747} = (2, 5, 22, 1) = \ell_5 \cap \ell_{17}$
$P_{1819} = (25, 23, 0, 1) = \ell_5 \cap \ell_{19}$
$P_{24319} = (30, 22, 22, 1) = \ell_6 \cap \ell_8$
$P_{17348} = (3, 29, 15, 1) = \ell_6 \cap \ell_{11}$
$P_{11611} = (26, 9, 10, 1) = \ell_6 \cap \ell_{13}$
$P_{5817} = (24, 20, 4, 1) = \ell_6 \cap \ell_{19}$
$P_{25203} = (18, 18, 23, 1) = \ell_6 \cap \ell_{20}$
$P_{23370} = (9, 25, 21, 1) = \ell_7 \cap \ell_8$
$P_{15094} = (21, 22, 13, 1) = \ell_7 \cap \ell_{10}$
$P_{4486} = (5, 11, 3, 1) = \ell_7 \cap \ell_{11}$
$P_{1302} = (20, 7, 0, 1) = \ell_7 \cap \ell_{12}$
$P_{25897} = (8, 8, 24, 1) = \ell_7 \cap \ell_{16}$
$P_{10477} = (12, 6, 9, 1) = \ell_7 \cap \ell_{18}$
$P_{13947} = (26, 18, 12, 1) = \ell_7 \cap \ell_{19}$
$P_{7601} = (16, 12, 6, 1) = \ell_8 \cap \ell_{12}$
$P_{13710} = (13, 11, 12, 1) = \ell_8 \cap \ell_{15}$
$P_{7401} = (8, 6, 6, 1) = \ell_9 \cap \ell_{10}$
$P_{25264} = (15, 20, 23, 1) = \ell_9 \cap \ell_{11}$
$P_{13917} = (28, 17, 12, 1) = \ell_9 \cap \ell_{12}$
$P_{18114} = (1, 21, 16, 1) = \ell_9 \cap \ell_{13}$
$P_{8555} = (10, 10, 7, 1) = \ell_9 \cap \ell_{15}$
$P_{5123} = (2, 31, 3, 1) = \ell_9 \cap \ell_{19}$
$P_{32262} = (5, 15, 30, 1) = \ell_{10} \cap \ell_{20}$
$P_{28188} = (27, 15, 26, 1) = \ell_{11} \cap \ell_{16}$
$P_{23023} = (14, 14, 21, 1) = \ell_{11} \cap \ell_{17}$
$P_{4044} = (11, 29, 2, 1) = \ell_{12} \cap \ell_{13}$
$P_{15748} = (3, 11, 14, 1) = \ell_{12} \cap \ell_{14}$
$P_{15266} = (1, 28, 13, 1) = \ell_{12} \cap \ell_{17}$
$P_{5872} = (15, 22, 4, 1) = \ell_{12} \cap \ell_{20}$
$P_{18646} = (21, 5, 17, 1) = \ell_{13} \cap \ell_{16}$
$P_{23056} = (15, 15, 21, 1) = \ell_{13} \cap \ell_{18}$
$P_{27476} = (19, 25, 25, 1) = \ell_{14} \cap \ell_{16}$
$P_{33510} = (5, 22, 31, 1) = \ell_{14} \cap \ell_{19}$
$P_{29932} = (11, 6, 28, 1) = \ell_{15} \cap \ell_{16}$
$P_{29533} = (28, 25, 27, 1) = \ell_{15} \cap \ell_{18}$
$P_{6674} = (17, 15, 5, 1) = \ell_{15} \cap \ell_{19}$
$P_{1759} = (29, 21, 0, 1) = \ell_{15} \cap \ell_{20}$
$P_{22382} = (13, 26, 20, 1) = \ell_{16} \cap \ell_{20}$
$P_{22187} = (10, 20, 20, 1) = \ell_{17} \cap \ell_{18}$
$P_{26592} = (31, 29, 24, 1) = \ell_{17} \cap \ell_{19}$
$P_{28088} = (23, 12, 26, 1) = \ell_{17} \cap \ell_{20}$

Single Points

The surface has 537 single points:
The single points on the surface are:

0 : $P_{5} = (1, 1, 0, 0)$ lies on line ℓ_{0}
1 : $P_{110} = (11, 2, 1, 0)$ lies on line ℓ_{1}
2 : $P_{116} = (17, 2, 1, 0)$ lies on line ℓ_{2}
3 : $P_{124} = (25, 2, 1, 0)$ lies on line ℓ_{3}
4 : $P_{147} = (16, 3, 1, 0)$ lies on line ℓ_{4}
5 : $P_{169} = (6, 4, 1, 0)$ lies on line ℓ_{5}
6 : $P_{175} = (12, 4, 1, 0)$ lies on line ℓ_{6}
7 : $P_{178} = (15, 4, 1, 0)$ lies on line ℓ_{7}
8 : $P_{208} = (13, 5, 1, 0)$ lies on line ℓ_{8}
9 : $P_{421} = (2, 12, 1, 0)$ lies on line ℓ_{9}
10 : $P_{454} = (3, 13, 1, 0)$ lies on line ℓ_{10}
11 : $P_{469} = (18, 13, 1, 0)$ lies on line ℓ_{11}
12 : $P_{480} = (29, 13, 1, 0)$ lies on line ℓ_{12}
13 : $P_{567} = (20, 16, 1, 0)$ lies on line ℓ_{13}
14 : $P_{573} = (26, 16, 1, 0)$ lies on line ℓ_{14}
15 : $P_{578} = (31, 16, 1, 0)$ lies on line ℓ_{15}
16 : $P_{606} = (27, 17, 1, 0)$ lies on line ℓ_{16}
17 : $P_{871} = (4, 26, 1, 0)$ lies on line ℓ_{17}
18 : $P_{904} = (5, 27, 1, 0)$ lies on line ℓ_{18}
19 : $P_{908} = (9, 27, 1, 0)$ lies on line ℓ_{19}
20 : $P_{921} = (22, 27, 1, 0)$ lies on line ℓ_{20}
21 : $P_{1138} = (16, 2, 0, 1)$ lies on line ℓ_{2}
22 : $P_{1199} = (13, 4, 0, 1)$ lies on line ℓ_{6}
23 : $P_{1348} = (2, 9, 0, 1)$ lies on line ℓ_{16}
24 : $P_{1414} = (4, 11, 0, 1)$ lies on line ℓ_{9}
25 : $P_{1476} = (2, 13, 0, 1)$ lies on line ℓ_{10}
26 : $P_{1554} = (16, 15, 0, 1)$ lies on line ℓ_{17}
27 : $P_{1597} = (27, 16, 0, 1)$ lies on line ℓ_{14}
28 : $P_{1661} = (27, 18, 0, 1)$ lies on line ℓ_{8}
29 : $P_{1926} = (4, 27, 0, 1)$ lies on line ℓ_{18}
30 : $P_{2063} = (13, 31, 0, 1)$ lies on line ℓ_{4}
31 : $P_{2114} = (0, 1, 1, 1)$ lies on line ℓ_{0}
32 : $P_{2148} = (3, 2, 1, 1)$ lies on line ℓ_{0}
33 : $P_{2179} = (2, 3, 1, 1)$ lies on line ℓ_{0}
34 : $P_{2204} = (27, 3, 1, 1)$ lies on line ℓ_{7}
35 : $P_{2214} = (5, 4, 1, 1)$ lies on line ℓ_{0}
36 : $P_{2243} = (2, 5, 1, 1)$ lies on line ℓ_{15}
37 : $P_{2245} = (4, 5, 1, 1)$ lies on line ℓ_{0}
38 : $P_{2280} = (7, 6, 1, 1)$ lies on line ℓ_{0}
39 : $P_{2346} = (9, 8, 1, 1)$ lies on line ℓ_{0}
40 : $P_{2355} = (18, 8, 1, 1)$ lies on line ℓ_{13}
41 : $P_{2377} = (8, 9, 1, 1)$ lies on line ℓ_{0}
42 : $P_{2410} = (9, 10, 1, 1)$ lies on line ℓ_{12}
43 : $P_{2412} = (11, 10, 1, 1)$ lies on line ℓ_{0}
44 : $P_{2443} = (10, 11, 1, 1)$ lies on line ℓ_{0}
45 : $P_{2478} = (13, 12, 1, 1)$ lies on line ℓ_{0}
46 : $P_{2481} = (16, 12, 1, 1)$ lies on line ℓ_{19}
47 : $P_{2509} = (12, 13, 1, 1)$ lies on line ℓ_{0}
48 : $P_{2540} = (11, 14, 1, 1)$ lies on line ℓ_{20}
49 : $P_{2544} = (15, 14, 1, 1)$ lies on line ℓ_{0}
50 : $P_{2575} = (14, 15, 1, 1)$ lies on line ℓ_{0}
51 : $P_{2610} = (17, 16, 1, 1)$ lies on line ℓ_{0}
52 : $P_{2629} = (4, 17, 1, 1)$ lies on line ℓ_{11}
53 : $P_{2641} = (16, 17, 1, 1)$ lies on line ℓ_{0}
54 : $P_{2676} = (19, 18, 1, 1)$ lies on line ℓ_{0}
55 : $P_{2707} = (18, 19, 1, 1)$ lies on line ℓ_{0}
56 : $P_{2720} = (31, 19, 1, 1)$ lies on line ℓ_{5}
57 : $P_{2742} = (21, 20, 1, 1)$ lies on line ℓ_{0}
58 : $P_{2808} = (23, 22, 1, 1)$ lies on line ℓ_{0}
59 : $P_{2905} = (24, 25, 1, 1)$ lies on line ℓ_{0}
60 : $P_{2926} = (13, 26, 1, 1)$ lies on line ℓ_{1}
61 : $P_{2940} = (27, 26, 1, 1)$ lies on line ℓ_{0}
62 : $P_{2971} = (26, 27, 1, 1)$ lies on line ℓ_{0}
63 : $P_{3037} = (28, 29, 1, 1)$ lies on line ℓ_{0}
64 : $P_{3056} = (15, 30, 1, 1)$ lies on line ℓ_{3}
65 : $P_{3072} = (31, 30, 1, 1)$ lies on line ℓ_{0}
66 : $P_{3103} = (30, 31, 1, 1)$ lies on line ℓ_{0}
67 : $P_{3244} = (11, 4, 2, 1)$ lies on line ℓ_{19}
68 : $P_{3317} = (20, 6, 2, 1)$ lies on line ℓ_{20}
69 : $P_{3375} = (14, 8, 2, 1)$ lies on line ℓ_{18}
70 : $P_{3510} = (21, 12, 2, 1)$ lies on line ℓ_{6}
71 : $P_{3570} = (17, 14, 2, 1)$ lies on line ℓ_{16}
72 : $P_{3595} = (10, 15, 2, 1)$ lies on line ℓ_{7}
73 : $P_{3623} = (6, 16, 2, 1)$ lies on line ℓ_{15}
74 : $P_{3713} = (0, 19, 2, 1)$ lies on line ℓ_{9}
75 : $P_{3787} = (10, 21, 2, 1)$ lies on line ℓ_{14}
76 : $P_{3845} = (4, 23, 2, 1)$ lies on line ℓ_{10}
77 : $P_{3913} = (8, 25, 2, 1)$ lies on line ℓ_{4}
78 : $P_{4017} = (16, 28, 2, 1)$ lies on line ℓ_{1}
79 : $P_{4089} = (24, 30, 2, 1)$ lies on line ℓ_{17}
80 : $P_{4118} = (21, 31, 2, 1)$ lies on line ℓ_{5}
81 : $P_{4154} = (25, 0, 3, 1)$ lies on line ℓ_{15}
82 : $P_{4263} = (6, 4, 3, 1)$ lies on line ℓ_{2}
83 : $P_{4285} = (28, 4, 3, 1)$ lies on line ℓ_{17}
84 : $P_{4305} = (16, 5, 3, 1)$ lies on line ℓ_{14}
85 : $P_{4410} = (25, 8, 3, 1)$ lies on line ℓ_{6}
86 : $P_{4576} = (31, 13, 3, 1)$ lies on line ℓ_{13}
87 : $P_{4663} = (22, 16, 3, 1)$ lies on line ℓ_{12}
88 : $P_{4748} = (11, 19, 3, 1)$ lies on line ℓ_{18}
89 : $P_{4968} = (7, 26, 3, 1)$ lies on line ℓ_{10}
90 : $P_{5012} = (19, 27, 3, 1)$ lies on line ℓ_{5}
91 : $P_{5059} = (2, 29, 3, 1)$ lies on line ℓ_{20}
92 : $P_{5069} = (12, 29, 3, 1)$ lies on line ℓ_{8}
93 : $P_{5116} = (27, 30, 3, 1)$ lies on line ℓ_{1}
94 : $P_{5131} = (10, 31, 3, 1)$ lies on line ℓ_{16}
95 : $P_{5355} = (10, 6, 4, 1)$ lies on line ℓ_{8}
96 : $P_{5409} = (0, 8, 4, 1)$ lies on line ℓ_{17}
97 : $P_{5503} = (30, 10, 4, 1)$ lies on line ℓ_{2}
98 : $P_{5589} = (20, 13, 4, 1)$ lies on line ℓ_{11}
99 : $P_{5680} = (15, 16, 4, 1)$ lies on line ℓ_{1}
100 : $P_{5757} = (28, 18, 4, 1)$ lies on line ℓ_{13}
101 : $P_{5768} = (7, 19, 4, 1)$ lies on line ℓ_{4}
102 : $P_{5822} = (29, 20, 4, 1)$ lies on line ℓ_{3}
103 : $P_{5902} = (13, 23, 4, 1)$ lies on line ℓ_{7}
104 : $P_{5937} = (16, 24, 4, 1)$ lies on line ℓ_{18}
105 : $P_{6013} = (28, 26, 4, 1)$ lies on line ℓ_{14}
106 : $P_{6063} = (14, 28, 4, 1)$ lies on line ℓ_{10}
107 : $P_{6125} = (12, 30, 4, 1)$ lies on line ℓ_{9}

108 : $P_{6159} = (14, 31, 4, 1)$ lies on line ℓ_{15}
109 : $P_{6183} = (6, 0, 5, 1)$ lies on line ℓ_{11}
110 : $P_{6249} = (8, 2, 5, 1)$ lies on line ℓ_{13}
111 : $P_{6294} = (21, 3, 5, 1)$ lies on line ℓ_{18}
112 : $P_{6448} = (15, 8, 5, 1)$ lies on line ℓ_{2}
113 : $P_{6503} = (6, 10, 5, 1)$ lies on line ℓ_{14}
114 : $P_{6618} = (25, 13, 5, 1)$ lies on line ℓ_{20}
115 : $P_{6709} = (20, 16, 5, 1)$ lies on line ℓ_{6}
116 : $P_{6712} = (23, 16, 5, 1)$ lies on line ℓ_{4}
117 : $P_{6734} = (13, 17, 5, 1)$ lies on line ℓ_{10}
118 : $P_{6767} = (14, 18, 5, 1)$ lies on line ℓ_{9}
119 : $P_{6787} = (2, 19, 5, 1)$ lies on line ℓ_{7}
120 : $P_{6885} = (4, 22, 5, 1)$ lies on line ℓ_{3}
121 : $P_{6907} = (26, 22, 5, 1)$ lies on line ℓ_{16}
122 : $P_{7059} = (18, 27, 5, 1)$ lies on line ℓ_{12}
123 : $P_{7219} = (18, 0, 6, 1)$ lies on line ℓ_{16}
124 : $P_{7367} = (6, 5, 6, 1)$ lies on line ℓ_{20}
125 : $P_{7435} = (10, 7, 6, 1)$ lies on line ℓ_{19}
126 : $P_{7579} = (26, 11, 6, 1)$ lies on line ℓ_{18}
127 : $P_{7674} = (25, 14, 6, 1)$ lies on line ℓ_{2}
128 : $P_{7694} = (13, 15, 6, 1)$ lies on line ℓ_{5}
129 : $P_{7723} = (10, 16, 6, 1)$ lies on line ℓ_{3}
130 : $P_{7866} = (25, 20, 6, 1)$ lies on line ℓ_{1}
131 : $P_{7875} = (2, 21, 6, 1)$ lies on line ℓ_{4}
132 : $P_{7954} = (17, 23, 6, 1)$ lies on line ℓ_{13}
133 : $P_{7958} = (21, 23, 6, 1)$ lies on line ℓ_{11}
134 : $P_{8009} = (8, 25, 6, 1)$ lies on line ℓ_{17}
135 : $P_{8054} = (21, 26, 6, 1)$ lies on line ℓ_{15}
136 : $P_{8097} = (0, 28, 6, 1)$ lies on line ℓ_{6}
137 : $P_{8206} = (13, 31, 6, 1)$ lies on line ℓ_{14}
138 : $P_{8212} = (19, 31, 6, 1)$ lies on line ℓ_{7}
139 : $P_{8270} = (13, 1, 7, 1)$ lies on line ℓ_{12}
140 : $P_{8333} = (12, 3, 7, 1)$ lies on line ℓ_{17}
141 : $P_{8454} = (5, 7, 7, 1)$ lies on line ℓ_{13}
142 : $P_{8542} = (29, 9, 7, 1)$ lies on line ℓ_{8}
143 : $P_{8617} = (8, 12, 7, 1)$ lies on line ℓ_{2}
144 : $P_{8728} = (23, 15, 7, 1)$ lies on line ℓ_{14}
145 : $P_{8768} = (31, 16, 7, 1)$ lies on line ℓ_{18}
146 : $P_{8778} = (9, 17, 7, 1)$ lies on line ℓ_{16}
147 : $P_{8820} = (19, 18, 7, 1)$ lies on line ℓ_{3}
148 : $P_{9005} = (12, 24, 7, 1)$ lies on line ℓ_{6}
149 : $P_{9064} = (7, 26, 7, 1)$ lies on line ℓ_{11}
150 : $P_{9117} = (28, 27, 7, 1)$ lies on line ℓ_{7}
151 : $P_{9124} = (3, 28, 7, 1)$ lies on line ℓ_{19}
152 : $P_{9201} = (16, 30, 7, 1)$ lies on line ℓ_{20}
153 : $P_{9256} = (7, 0, 8, 1)$ lies on line ℓ_{12}
154 : $P_{9283} = (2, 1, 8, 1)$ lies on line ℓ_{6}
155 : $P_{9302} = (21, 1, 8, 1)$ lies on line ℓ_{17}
156 : $P_{9311} = (30, 1, 8, 1)$ lies on line ℓ_{15}
157 : $P_{9316} = (3, 2, 8, 1)$ lies on line ℓ_{7}
158 : $P_{9397} = (20, 4, 8, 1)$ lies on line ℓ_{9}
159 : $P_{9398} = (21, 4, 8, 1)$ lies on line ℓ_{14}
160 : $P_{9498} = (25, 7, 8, 1)$ lies on line ℓ_{4}
161 : $P_{9525} = (20, 8, 8, 1)$ lies on line ℓ_{1}
162 : $P_{9595} = (26, 10, 8, 1)$ lies on line ℓ_{10}
163 : $P_{9633} = (0, 12, 8, 1)$ lies on line ℓ_{3}
164 : $P_{9656} = (23, 12, 8, 1)$ lies on line ℓ_{13}
165 : $P_{9820} = (27, 17, 8, 1)$ lies on line ℓ_{19}
166 : $P_{9885} = (28, 19, 8, 1)$ lies on line ℓ_{20}
167 : $P_{9925} = (4, 21, 8, 1)$ lies on line ℓ_{16}
168 : $P_{10131} = (18, 27, 8, 1)$ lies on line ℓ_{11}
169 : $P_{10186} = (9, 29, 8, 1)$ lies on line ℓ_{18}
170 : $P_{10269} = (28, 31, 8, 1)$ lies on line ℓ_{8}
171 : $P_{10410} = (9, 4, 9, 1)$ lies on line ℓ_{4}
172 : $P_{10432} = (31, 4, 9, 1)$ lies on line ℓ_{16}
173 : $P_{10447} = (14, 5, 9, 1)$ lies on line ℓ_{6}
174 : $P_{10522} = (25, 7, 9, 1)$ lies on line ℓ_{10}
175 : $P_{10539} = (10, 8, 9, 1)$ lies on line ℓ_{20}
176 : $P_{10551} = (22, 8, 9, 1)$ lies on line ℓ_{9}
177 : $P_{10611} = (18, 10, 9, 1)$ lies on line ℓ_{19}
178 : $P_{10624} = (31, 10, 9, 1)$ lies on line ℓ_{1}
179 : $P_{10715} = (26, 13, 9, 1)$ lies on line ℓ_{12}
180 : $P_{10746} = (25, 14, 9, 1)$ lies on line ℓ_{3}
181 : $P_{10814} = (29, 16, 9, 1)$ lies on line ℓ_{2}
182 : $P_{10818} = (1, 17, 9, 1)$ lies on line ℓ_{15}
183 : $P_{10928} = (15, 20, 9, 1)$ lies on line ℓ_{14}
184 : $P_{10977} = (0, 22, 9, 1)$ lies on line ℓ_{11}
185 : $P_{10987} = (10, 22, 9, 1)$ lies on line ℓ_{5}
186 : $P_{11122} = (17, 26, 9, 1)$ lies on line ℓ_{8}
187 : $P_{11154} = (17, 27, 9, 1)$ lies on line ℓ_{17}
188 : $P_{11172} = (3, 28, 9, 1)$ lies on line ℓ_{13}
189 : $P_{11318} = (21, 0, 10, 1)$ lies on line ℓ_{20}
190 : $P_{11333} = (4, 1, 10, 1)$ lies on line ℓ_{14}
191 : $P_{11348} = (19, 1, 10, 1)$ lies on line ℓ_{11}
192 : $P_{11357} = (28, 1, 10, 1)$ lies on line ℓ_{4}
193 : $P_{11370} = (9, 2, 10, 1)$ lies on line ℓ_{19}
194 : $P_{11430} = (5, 4, 10, 1)$ lies on line ℓ_{15}
195 : $P_{11576} = (23, 8, 10, 1)$ lies on line ℓ_{3}
196 : $P_{11646} = (29, 10, 10, 1)$ lies on line ℓ_{7}
197 : $P_{11683} = (2, 12, 10, 1)$ lies on line ℓ_{1}
198 : $P_{11748} = (3, 14, 10, 1)$ lies on line ℓ_{18}
199 : $P_{11837} = (28, 16, 10, 1)$ lies on line ℓ_{10}
200 : $P_{11838} = (29, 16, 10, 1)$ lies on line ℓ_{17}
201 : $P_{11896} = (23, 18, 10, 1)$ lies on line ℓ_{16}
202 : $P_{11975} = (6, 21, 10, 1)$ lies on line ℓ_{8}
203 : $P_{12012} = (11, 22, 10, 1)$ lies on line ℓ_{2}
204 : $P_{12129} = (0, 26, 10, 1)$ lies on line ℓ_{5}
205 : $P_{12153} = (24, 26, 10, 1)$ lies on line ℓ_{12}
206 : $P_{12209} = (16, 28, 10, 1)$ lies on line ℓ_{9}
207 : $P_{12397} = (12, 2, 11, 1)$ lies on line ℓ_{4}
208 : $P_{12429} = (12, 3, 11, 1)$ lies on line ℓ_{16}
209 : $P_{12655} = (14, 10, 11, 1)$ lies on line ℓ_{3}
210 : $P_{12666} = (25, 10, 11, 1)$ lies on line ℓ_{17}
211 : $P_{12706} = (1, 12, 11, 1)$ lies on line ℓ_{11}
212 : $P_{12759} = (22, 13, 11, 1)$ lies on line ℓ_{6}
213 : $P_{12778} = (9, 14, 11, 1)$ lies on line ℓ_{1}
214 : $P_{12787} = (18, 14, 11, 1)$ lies on line ℓ_{7}
215 : $P_{12844} = (11, 16, 11, 1)$ lies on line ℓ_{8}

216 : $P_{12851} = (18, 16, 11, 1)$ lies on line ℓ_9
217 : $P_{12895} = (30, 17, 11, 1)$ lies on line ℓ_{14}
218 : $P_{12999} = (6, 21, 11, 1)$ lies on line ℓ_{18}
219 : $P_{13062} = (5, 23, 11, 1)$ lies on line ℓ_{12}
220 : $P_{13121} = (0, 25, 11, 1)$ lies on line ℓ_{19}
221 : $P_{13135} = (14, 25, 11, 1)$ lies on line ℓ_{13}
222 : $P_{13188} = (3, 27, 11, 1)$ lies on line ℓ_{20}
223 : $P_{13280} = (31, 29, 11, 1)$ lies on line ℓ_{10}
224 : $P_{13287} = (6, 30, 11, 1)$ lies on line ℓ_5
225 : $P_{13374} = (29, 0, 12, 1)$ lies on line ℓ_1
226 : $P_{13429} = (20, 2, 12, 1)$ lies on line ℓ_5
227 : $P_{13484} = (11, 4, 12, 1)$ lies on line ℓ_3
228 : $P_{13542} = (5, 6, 12, 1)$ lies on line ℓ_{17}
229 : $P_{13550} = (13, 6, 12, 1)$ lies on line ℓ_{13}
230 : $P_{13681} = (16, 10, 12, 1)$ lies on line ℓ_{11}
231 : $P_{13716} = (19, 11, 12, 1)$ lies on line ℓ_4
232 : $P_{13811} = (18, 14, 12, 1)$ lies on line ℓ_{14}
233 : $P_{13871} = (14, 16, 12, 1)$ lies on line ℓ_{20}
234 : $P_{13912} = (23, 17, 12, 1)$ lies on line ℓ_6
235 : $P_{14179} = (2, 26, 12, 1)$ lies on line ℓ_2
236 : $P_{14216} = (7, 27, 12, 1)$ lies on line ℓ_{16}
237 : $P_{14231} = (22, 27, 12, 1)$ lies on line ℓ_{10}
238 : $P_{14334} = (29, 30, 12, 1)$ lies on line ℓ_{18}
239 : $P_{14455} = (22, 2, 13, 1)$ lies on line ℓ_1
240 : $P_{14553} = (24, 5, 13, 1)$ lies on line ℓ_{18}
241 : $P_{14595} = (2, 7, 13, 1)$ lies on line ℓ_{11}
242 : $P_{14628} = (3, 8, 13, 1)$ lies on line ℓ_4
243 : $P_{14676} = (19, 9, 13, 1)$ lies on line ℓ_{19}
244 : $P_{14717} = (28, 10, 13, 1)$ lies on line ℓ_{16}
245 : $P_{14745} = (24, 11, 13, 1)$ lies on line ℓ_{20}
246 : $P_{14817} = (0, 14, 13, 1)$ lies on line ℓ_8
247 : $P_{15068} = (27, 21, 13, 1)$ lies on line ℓ_6
248 : $P_{15098} = (25, 22, 13, 1)$ lies on line ℓ_{13}
249 : $P_{15156} = (19, 24, 13, 1)$ lies on line ℓ_2
250 : $P_{15251} = (18, 27, 13, 1)$ lies on line ℓ_{15}
251 : $P_{15327} = (30, 29, 13, 1)$ lies on line ℓ_9
252 : $P_{15337} = (8, 30, 13, 1)$ lies on line ℓ_{14}
253 : $P_{15421} = (28, 0, 14, 1)$ lies on line ℓ_3
254 : $P_{15433} = (8, 1, 14, 1)$ lies on line ℓ_{19}
255 : $P_{15441} = (16, 1, 14, 1)$ lies on line ℓ_{10}
256 : $P_{15448} = (23, 1, 14, 1)$ lies on line ℓ_8
257 : $P_{15489} = (0, 3, 14, 1)$ lies on line ℓ_{13}
258 : $P_{15496} = (7, 3, 14, 1)$ lies on line ℓ_{20}
259 : $P_{15532} = (11, 4, 14, 1)$ lies on line ℓ_1
260 : $P_{15705} = (24, 9, 14, 1)$ lies on line ℓ_9
261 : $P_{15737} = (24, 10, 14, 1)$ lies on line ℓ_5
262 : $P_{15831} = (22, 13, 14, 1)$ lies on line ℓ_4
263 : $P_{15832} = (23, 13, 14, 1)$ lies on line ℓ_{18}
264 : $P_{15863} = (22, 14, 14, 1)$ lies on line ℓ_{15}
265 : $P_{15922} = (17, 16, 14, 1)$ lies on line ℓ_{11}
266 : $P_{16142} = (13, 23, 14, 1)$ lies on line ℓ_{17}
267 : $P_{16208} = (15, 25, 14, 1)$ lies on line ℓ_6
268 : $P_{16229} = (4, 26, 14, 1)$ lies on line ℓ_7
269 : $P_{16309} = (20, 28, 14, 1)$ lies on line ℓ_{16}
270 : $P_{16358} = (5, 30, 14, 1)$ lies on line ℓ_2
271 : $P_{16486} = (5, 2, 15, 1)$ lies on line ℓ_3
272 : $P_{16571} = (26, 4, 15, 1)$ lies on line ℓ_8
273 : $P_{16603} = (26, 5, 15, 1)$ lies on line ℓ_9
274 : $P_{16609} = (0, 6, 15, 1)$ lies on line ℓ_1
275 : $P_{16639} = (30, 6, 15, 1)$ lies on line ℓ_{12}
276 : $P_{16820} = (19, 12, 15, 1)$ lies on line ℓ_{10}
277 : $P_{16842} = (9, 13, 15, 1)$ lies on line ℓ_{17}
278 : $P_{16848} = (15, 13, 15, 1)$ lies on line ℓ_{16}
279 : $P_{16871} = (6, 14, 15, 1)$ lies on line ℓ_4
280 : $P_{16895} = (30, 14, 15, 1)$ lies on line ℓ_5
281 : $P_{17045} = (20, 19, 15, 1)$ lies on line ℓ_{13}
282 : $P_{17139} = (18, 22, 15, 1)$ lies on line ℓ_{18}
283 : $P_{17202} = (17, 24, 15, 1)$ lies on line ℓ_{20}
284 : $P_{17250} = (1, 26, 15, 1)$ lies on line ℓ_{19}
285 : $P_{17306} = (25, 27, 15, 1)$ lies on line ℓ_{14}
286 : $P_{17333} = (20, 28, 15, 1)$ lies on line ℓ_2
287 : $P_{17386} = (9, 30, 15, 1)$ lies on line ℓ_{15}
288 : $P_{17388} = (11, 30, 15, 1)$ lies on line ℓ_7
289 : $P_{17560} = (23, 3, 16, 1)$ lies on line ℓ_{10}
290 : $P_{17678} = (13, 7, 16, 1)$ lies on line ℓ_2
291 : $P_{17718} = (21, 8, 16, 1)$ lies on line ℓ_8
292 : $P_{17752} = (23, 9, 16, 1)$ lies on line ℓ_{12}
293 : $P_{17761} = (0, 10, 16, 1)$ lies on line ℓ_4
294 : $P_{17888} = (31, 13, 16, 1)$ lies on line ℓ_7
295 : $P_{17908} = (19, 14, 16, 1)$ lies on line ℓ_6
296 : $P_{18047} = (30, 18, 16, 1)$ lies on line ℓ_{11}
297 : $P_{18075} = (26, 19, 16, 1)$ lies on line ℓ_{17}
298 : $P_{18095} = (14, 20, 16, 1)$ lies on line ℓ_{16}
299 : $P_{18207} = (30, 23, 16, 1)$ lies on line ℓ_{18}
300 : $P_{18236} = (27, 24, 16, 1)$ lies on line ℓ_{15}
301 : $P_{18334} = (29, 27, 16, 1)$ lies on line ℓ_{19}
302 : $P_{18391} = (22, 29, 16, 1)$ lies on line ℓ_5
303 : $P_{18485} = (20, 0, 17, 1)$ lies on line ℓ_{19}
304 : $P_{18538} = (9, 2, 17, 1)$ lies on line ℓ_{20}
305 : $P_{18603} = (10, 4, 17, 1)$ lies on line ℓ_{12}
306 : $P_{18653} = (28, 5, 17, 1)$ lies on line ℓ_2
307 : $P_{18725} = (4, 8, 17, 1)$ lies on line ℓ_{15}
308 : $P_{18783} = (30, 9, 17, 1)$ lies on line ℓ_{17}
309 : $P_{18816} = (31, 10, 17, 1)$ lies on line ℓ_6
310 : $P_{18876} = (27, 12, 17, 1)$ lies on line ℓ_{18}
311 : $P_{18905} = (24, 13, 17, 1)$ lies on line ℓ_8
312 : $P_{18910} = (29, 13, 17, 1)$ lies on line ℓ_{14}
313 : $P_{18933} = (20, 14, 17, 1)$ lies on line ℓ_{10}
314 : $P_{19268} = (3, 25, 17, 1)$ lies on line ℓ_9
315 : $P_{19281} = (16, 25, 17, 1)$ lies on line ℓ_5
316 : $P_{19335} = (6, 27, 17, 1)$ lies on line ℓ_3
317 : $P_{19568} = (15, 2, 18, 1)$ lies on line ℓ_8
318 : $P_{19571} = (18, 2, 18, 1)$ lies on line ℓ_{17}
319 : $P_{19595} = (10, 3, 18, 1)$ lies on line ℓ_2
320 : $P_{19637} = (20, 4, 18, 1)$ lies on line ℓ_{18}
321 : $P_{19650} = (1, 5, 18, 1)$ lies on line ℓ_7
322 : $P_{19692} = (11, 6, 18, 1)$ lies on line ℓ_6
323 : $P_{19760} = (15, 8, 18, 1)$ lies on line ℓ_{19}

324 : $P_{19776} = (31, 8, 18, 1)$ lies on line ℓ_{11}
325 : $P_{19831} = (22, 10, 18, 1)$ lies on line ℓ_{20}
326 : $P_{19878} = (5, 12, 18, 1)$ lies on line ℓ_{4}
327 : $P_{19910} = (5, 13, 18, 1)$ lies on line ℓ_{9}
328 : $P_{20013} = (12, 16, 18, 1)$ lies on line ℓ_{13}
329 : $P_{20105} = (8, 19, 18, 1)$ lies on line ℓ_{12}
330 : $P_{20126} = (29, 19, 18, 1)$ lies on line ℓ_{16}
331 : $P_{20187} = (26, 21, 18, 1)$ lies on line ℓ_{5}
332 : $P_{20279} = (22, 24, 18, 1)$ lies on line ℓ_{14}
333 : $P_{20417} = (0, 29, 18, 1)$ lies on line ℓ_{15}
334 : $P_{20425} = (8, 29, 18, 1)$ lies on line ℓ_{3}
335 : $P_{20537} = (24, 0, 19, 1)$ lies on line ℓ_{13}
336 : $P_{20552} = (7, 1, 19, 1)$ lies on line ℓ_{9}
337 : $P_{20559} = (14, 1, 19, 1)$ lies on line ℓ_{7}
338 : $P_{20572} = (27, 1, 19, 1)$ lies on line ℓ_{2}
339 : $P_{20583} = (6, 2, 19, 1)$ lies on line ℓ_{16}
340 : $P_{20584} = (7, 2, 19, 1)$ lies on line ℓ_{6}
341 : $P_{20686} = (13, 5, 19, 1)$ lies on line ℓ_{11}
342 : $P_{20739} = (2, 7, 19, 1)$ lies on line ℓ_{8}
343 : $P_{20781} = (12, 8, 19, 1)$ lies on line ℓ_{14}
344 : $P_{20960} = (31, 13, 19, 1)$ lies on line ℓ_{15}
345 : $P_{21014} = (21, 15, 19, 1)$ lies on line ℓ_{4}
346 : $P_{21057} = (0, 17, 19, 1)$ lies on line ℓ_{20}
347 : $P_{21085} = (28, 17, 19, 1)$ lies on line ℓ_{5}
348 : $P_{21127} = (6, 19, 19, 1)$ lies on line ℓ_{19}
349 : $P_{21171} = (18, 20, 19, 1)$ lies on line ℓ_{10}
350 : $P_{21303} = (22, 24, 19, 1)$ lies on line ℓ_{17}
351 : $P_{21403} = (26, 27, 19, 1)$ lies on line ℓ_{1}
352 : $P_{21494} = (21, 30, 19, 1)$ lies on line ℓ_{12}
353 : $P_{21546} = (9, 0, 20, 1)$ lies on line ℓ_{9}
354 : $P_{21661} = (28, 3, 20, 1)$ lies on line ℓ_{11}
355 : $P_{21739} = (10, 6, 20, 1)$ lies on line ℓ_{4}
356 : $P_{21967} = (14, 13, 20, 1)$ lies on line ℓ_{5}
357 : $P_{22020} = (3, 15, 20, 1)$ lies on line ℓ_{2}
358 : $P_{22101} = (20, 17, 20, 1)$ lies on line ℓ_{3}
359 : $P_{22121} = (8, 18, 20, 1)$ lies on line ℓ_{15}
360 : $P_{22140} = (27, 18, 20, 1)$ lies on line ℓ_{10}
361 : $P_{22223} = (14, 21, 20, 1)$ lies on line ℓ_{1}
362 : $P_{22273} = (0, 23, 20, 1)$ lies on line ℓ_{14}
363 : $P_{22317} = (12, 24, 20, 1)$ lies on line ℓ_{12}
364 : $P_{22333} = (28, 24, 20, 1)$ lies on line ℓ_{19}
365 : $P_{22437} = (4, 28, 20, 1)$ lies on line ℓ_{8}
366 : $P_{22471} = (6, 29, 20, 1)$ lies on line ℓ_{7}
367 : $P_{22503} = (6, 30, 20, 1)$ lies on line ℓ_{6}
368 : $P_{22556} = (27, 31, 20, 1)$ lies on line ℓ_{13}
369 : $P_{22620} = (27, 1, 21, 1)$ lies on line ℓ_{20}
370 : $P_{22648} = (23, 2, 21, 1)$ lies on line ℓ_{15}
371 : $P_{22678} = (21, 3, 21, 1)$ lies on line ℓ_{19}
372 : $P_{22747} = (26, 5, 21, 1)$ lies on line ℓ_{4}
373 : $P_{22811} = (26, 7, 21, 1)$ lies on line ℓ_{14}
374 : $P_{22857} = (8, 9, 21, 1)$ lies on line ℓ_{5}
375 : $P_{22935} = (22, 11, 21, 1)$ lies on line ℓ_{16}
376 : $P_{22956} = (11, 12, 21, 1)$ lies on line ℓ_{9}
377 : $P_{22995} = (18, 13, 21, 1)$ lies on line ℓ_{2}
378 : $P_{23182} = (13, 19, 21, 1)$ lies on line ℓ_{3}
379 : $P_{23250} = (17, 21, 21, 1)$ lies on line ℓ_{12}
380 : $P_{23302} = (5, 23, 21, 1)$ lies on line ℓ_{1}
381 : $P_{23403} = (10, 26, 21, 1)$ lies on line ℓ_{6}
382 : $P_{23577} = (24, 31, 21, 1)$ lies on line ℓ_{10}
383 : $P_{23600} = (15, 0, 22, 1)$ lies on line ℓ_{4}
384 : $P_{23668} = (19, 2, 22, 1)$ lies on line ℓ_{12}
385 : $P_{23809} = (0, 7, 22, 1)$ lies on line ℓ_{18}
386 : $P_{23870} = (29, 8, 22, 1)$ lies on line ℓ_{10}
387 : $P_{23877} = (4, 9, 22, 1)$ lies on line ℓ_{20}
388 : $P_{23941} = (4, 11, 22, 1)$ lies on line ℓ_{2}
389 : $P_{23951} = (14, 11, 22, 1)$ lies on line ℓ_{19}
390 : $P_{24153} = (24, 17, 22, 1)$ lies on line ℓ_{1}
391 : $P_{24178} = (17, 18, 22, 1)$ lies on line ℓ_{14}
392 : $P_{24260} = (3, 21, 22, 1)$ lies on line ℓ_{3}
393 : $P_{24281} = (24, 21, 22, 1)$ lies on line ℓ_{7}
394 : $P_{24340} = (19, 23, 22, 1)$ lies on line ℓ_{15}
395 : $P_{24366} = (13, 24, 22, 1)$ lies on line ℓ_{9}
396 : $P_{24414} = (29, 25, 22, 1)$ lies on line ℓ_{11}
397 : $P_{24439} = (22, 26, 22, 1)$ lies on line ℓ_{13}
398 : $P_{24543} = (30, 29, 22, 1)$ lies on line ℓ_{16}
399 : $P_{24645} = (4, 1, 23, 1)$ lies on line ℓ_{5}
400 : $P_{24684} = (11, 2, 23, 1)$ lies on line ℓ_{14}
401 : $P_{24736} = (31, 3, 23, 1)$ lies on line ℓ_{4}
402 : $P_{24799} = (30, 5, 23, 1)$ lies on line ℓ_{10}
403 : $P_{24845} = (12, 7, 23, 1)$ lies on line ℓ_{15}
404 : $P_{24918} = (21, 9, 23, 1)$ lies on line ℓ_{2}
405 : $P_{24931} = (2, 10, 23, 1)$ lies on line ℓ_{13}
406 : $P_{24998} = (5, 12, 23, 1)$ lies on line ℓ_{16}
407 : $P_{25103} = (14, 15, 23, 1)$ lies on line ℓ_{12}
408 : $P_{25128} = (7, 16, 23, 1)$ lies on line ℓ_{19}
409 : $P_{25176} = (23, 17, 23, 1)$ lies on line ℓ_{7}
410 : $P_{25371} = (26, 23, 23, 1)$ lies on line ℓ_{3}
411 : $P_{25510} = (5, 28, 23, 1)$ lies on line ℓ_{18}
412 : $P_{25607} = (6, 31, 23, 1)$ lies on line ℓ_{17}
413 : $P_{25681} = (16, 1, 24, 1)$ lies on line ℓ_{13}
414 : $P_{25776} = (15, 4, 24, 1)$ lies on line ℓ_{10}
415 : $P_{25811} = (18, 5, 24, 1)$ lies on line ℓ_{8}
416 : $P_{26013} = (28, 11, 24, 1)$ lies on line ℓ_{6}
417 : $P_{26041} = (24, 12, 24, 1)$ lies on line ℓ_{15}
418 : $P_{26070} = (21, 13, 24, 1)$ lies on line ℓ_{1}
419 : $P_{26085} = (4, 14, 24, 1)$ lies on line ℓ_{12}
420 : $P_{26196} = (19, 17, 24, 1)$ lies on line ℓ_{18}
421 : $P_{26229} = (20, 18, 24, 1)$ lies on line ℓ_{4}
422 : $P_{26331} = (26, 21, 24, 1)$ lies on line ℓ_{11}
423 : $P_{26386} = (17, 23, 24, 1)$ lies on line ℓ_{2}
424 : $P_{26404} = (3, 24, 24, 1)$ lies on line ℓ_{5}
425 : $P_{26482} = (17, 26, 24, 1)$ lies on line ℓ_{9}
426 : $P_{26655} = (30, 31, 24, 1)$ lies on line ℓ_{20}
427 : $P_{26688} = (31, 0, 25, 1)$ lies on line ℓ_{8}
428 : $P_{26778} = (25, 3, 25, 1)$ lies on line ℓ_{12}
429 : $P_{26793} = (8, 4, 25, 1)$ lies on line ℓ_{20}
430 : $P_{26871} = (22, 6, 25, 1)$ lies on line ℓ_{19}
431 : $P_{26908} = (27, 7, 25, 1)$ lies on line ℓ_{17}

$432: P_{26957} = (12, 9, 25, 1)$ lies on line ℓ_{10}
$433: P_{26999} = (22, 10, 25, 1)$ lies on line ℓ_{18}
$434: P_{27025} = (16, 11, 25, 1)$ lies on line ℓ_{3}
$435: P_{27048} = (7, 12, 25, 1)$ lies on line ℓ_{7}
$436: P_{27153} = (16, 15, 25, 1)$ lies on line ℓ_{6}
$437: P_{27167} = (30, 15, 25, 1)$ lies on line ℓ_{1}
$438: P_{27329} = (0, 21, 25, 1)$ lies on line ℓ_{2}
$439: P_{27380} = (19, 22, 25, 1)$ lies on line ℓ_{9}
$440: P_{27433} = (8, 24, 25, 1)$ lies on line ℓ_{11}
$441: P_{27558} = (5, 28, 25, 1)$ lies on line ℓ_{5}
$442: P_{27560} = (7, 28, 25, 1)$ lies on line ℓ_{15}
$443: P_{27703} = (22, 0, 26, 1)$ lies on line ℓ_{7}
$444: P_{27766} = (21, 2, 26, 1)$ lies on line ℓ_{9}
$445: P_{27770} = (25, 2, 26, 1)$ lies on line ℓ_{18}
$446: P_{27781} = (4, 3, 26, 1)$ lies on line ℓ_{6}
$447: P_{27838} = (29, 4, 26, 1)$ lies on line ℓ_{13}
$448: P_{28089} = (24, 12, 26, 1)$ lies on line ℓ_{14}
$449: P_{28127} = (30, 13, 26, 1)$ lies on line ℓ_{3}
$450: P_{28142} = (13, 14, 26, 1)$ lies on line ℓ_{19}
$451: P_{28169} = (8, 15, 26, 1)$ lies on line ℓ_{8}
$452: P_{28208} = (15, 16, 26, 1)$ lies on line ℓ_{5}
$453: P_{28311} = (22, 19, 26, 1)$ lies on line ℓ_{2}
$454: P_{28338} = (17, 20, 26, 1)$ lies on line ℓ_{4}
$455: P_{28348} = (27, 20, 26, 1)$ lies on line ℓ_{12}
$456: P_{28650} = (9, 30, 26, 1)$ lies on line ℓ_{10}
$457: P_{28778} = (9, 2, 27, 1)$ lies on line ℓ_{11}
$458: P_{28858} = (25, 4, 27, 1)$ lies on line ℓ_{7}
$459: P_{28937} = (8, 7, 27, 1)$ lies on line ℓ_{6}
$460: P_{29030} = (5, 10, 27, 1)$ lies on line ℓ_{8}
$461: P_{29065} = (8, 11, 27, 1)$ lies on line ℓ_{1}
$462: P_{29176} = (23, 14, 27, 1)$ lies on line ℓ_{9}
$463: P_{29192} = (7, 15, 27, 1)$ lies on line ℓ_{3}
$464: P_{29256} = (7, 17, 27, 1)$ lies on line ℓ_{2}
$465: P_{29323} = (10, 19, 27, 1)$ lies on line ℓ_{10}
$466: P_{29381} = (4, 21, 27, 1)$ lies on line ℓ_{19}
$467: P_{29428} = (19, 22, 27, 1)$ lies on line ℓ_{17}
$468: P_{29511} = (6, 25, 27, 1)$ lies on line ℓ_{12}
$469: P_{29603} = (2, 28, 27, 1)$ lies on line ℓ_{14}
$470: P_{29665} = (0, 30, 27, 1)$ lies on line ℓ_{16}
$471: P_{29763} = (2, 1, 28, 1)$ lies on line ℓ_{3}
$472: P_{29839} = (14, 3, 28, 1)$ lies on line ℓ_{14}
$473: P_{29881} = (24, 4, 28, 1)$ lies on line ℓ_{11}
$474: P_{29917} = (28, 5, 28, 1)$ lies on line ℓ_{1}
$475: P_{30012} = (27, 8, 28, 1)$ lies on line ℓ_{5}
$476: P_{30091} = (10, 11, 28, 1)$ lies on line ℓ_{13}
$477: P_{30234} = (25, 15, 28, 1)$ lies on line ℓ_{9}
$478: P_{30276} = (3, 17, 28, 1)$ lies on line ℓ_{8}
$479: P_{30312} = (7, 18, 28, 1)$ lies on line ℓ_{18}
$480: P_{30404} = (3, 21, 28, 1)$ lies on line ℓ_{10}
$481: P_{30514} = (17, 24, 28, 1)$ lies on line ℓ_{7}
$482: P_{30576} = (15, 26, 28, 1)$ lies on line ℓ_{17}
$483: P_{30602} = (9, 27, 28, 1)$ lies on line ℓ_{6}
$484: P_{30637} = (12, 28, 28, 1)$ lies on line ℓ_{20}
$485: P_{30764} = (11, 0, 29, 1)$ lies on line ℓ_{17}
$486: P_{30936} = (23, 5, 29, 1)$ lies on line ℓ_{19}
$487: P_{31000} = (23, 7, 29, 1)$ lies on line ℓ_{1}
$488: P_{31003} = (26, 7, 29, 1)$ lies on line ℓ_{20}
$489: P_{31043} = (2, 9, 29, 1)$ lies on line ℓ_{18}
$490: P_{31051} = (10, 9, 29, 1)$ lies on line ℓ_{11}
$491: P_{31166} = (29, 12, 29, 1)$ lies on line ℓ_{5}
$492: P_{31331} = (2, 18, 29, 1)$ lies on line ℓ_{12}
$493: P_{31381} = (20, 19, 29, 1)$ lies on line ℓ_{14}
$494: P_{31407} = (14, 20, 29, 1)$ lies on line ℓ_{8}
$495: P_{31477} = (20, 22, 29, 1)$ lies on line ℓ_{15}
$496: P_{31505} = (16, 23, 29, 1)$ lies on line ℓ_{16}
$497: P_{31521} = (0, 24, 29, 1)$ lies on line ℓ_{10}
$498: P_{31647} = (30, 27, 29, 1)$ lies on line ℓ_{13}
$499: P_{31679} = (30, 28, 29, 1)$ lies on line ℓ_{7}
$500: P_{31750} = (5, 31, 29, 1)$ lies on line ℓ_{6}
$501: P_{31800} = (23, 0, 30, 1)$ lies on line ℓ_{5}
$502: P_{31819} = (10, 1, 30, 1)$ lies on line ℓ_{1}
$503: P_{31822} = (13, 1, 30, 1)$ lies on line ℓ_{18}
$504: P_{31833} = (24, 1, 30, 1)$ lies on line ℓ_{16}
$505: P_{31889} = (16, 3, 30, 1)$ lies on line ℓ_{15}
$506: P_{31937} = (0, 5, 30, 1)$ lies on line ℓ_{12}
$507: P_{31958} = (21, 5, 30, 1)$ lies on line ℓ_{3}
$508: P_{32000} = (31, 6, 30, 1)$ lies on line ℓ_{14}
$509: P_{32136} = (7, 11, 30, 1)$ lies on line ℓ_{17}
$510: P_{32205} = (12, 13, 30, 1)$ lies on line ℓ_{19}
$511: P_{32232} = (7, 14, 30, 1)$ lies on line ℓ_{13}
$512: P_{32304} = (15, 16, 30, 1)$ lies on line ℓ_{7}
$513: P_{32402} = (17, 19, 30, 1)$ lies on line ℓ_{6}
$514: P_{32542} = (29, 23, 30, 1)$ lies on line ℓ_{9}
$515: P_{32572} = (27, 24, 30, 1)$ lies on line ℓ_{4}
$516: P_{32665} = (24, 27, 30, 1)$ lies on line ℓ_{2}
$517: P_{32666} = (25, 27, 30, 1)$ lies on line ℓ_{8}
$518: P_{32762} = (25, 30, 30, 1)$ lies on line ℓ_{11}
$519: P_{32871} = (6, 2, 31, 1)$ lies on line ℓ_{10}
$520: P_{32898} = (1, 3, 31, 1)$ lies on line ℓ_{1}
$521: P_{32946} = (17, 4, 31, 1)$ lies on line ℓ_{5}
$522: P_{33037} = (12, 7, 31, 1)$ lies on line ℓ_{3}
$523: P_{33086} = (29, 8, 31, 1)$ lies on line ℓ_{12}
$524: P_{33316} = (3, 16, 31, 1)$ lies on line ℓ_{16}
$525: P_{33348} = (3, 17, 31, 1)$ lies on line ℓ_{17}
$526: P_{33420} = (11, 19, 31, 1)$ lies on line ℓ_{11}
$527: P_{33424} = (15, 19, 31, 1)$ lies on line ℓ_{15}
$528: P_{33441} = (0, 20, 31, 1)$ lies on line ℓ_{7}
$529: P_{33460} = (19, 20, 31, 1)$ lies on line ℓ_{20}
$530: P_{33566} = (29, 23, 31, 1)$ lies on line ℓ_{6}
$531: P_{33610} = (9, 25, 31, 1)$ lies on line ℓ_{2}
$532: P_{33641} = (8, 26, 31, 1)$ lies on line ℓ_{18}
$533: P_{33676} = (11, 27, 31, 1)$ lies on line ℓ_{4}
$534: P_{33696} = (31, 27, 31, 1)$ lies on line ℓ_{9}
$535: P_{33780} = (19, 30, 31, 1)$ lies on line ℓ_{13}
$536: P_{33781} = (20, 30, 31, 1)$ lies on line ℓ_{8}

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:

$0: P_{1} = (0,1,0,0)$
$1: P_{3} = (0,0,0,1)$
$2: P_{141} = (10,3,1,0)$
$3: P_{155} = (24,3,1,0)$
$4: P_{202} = (7,5,1,0)$
$5: P_{209} = (14,5,1,0)$
$6: P_{438} = (19,12,1,0)$
$7: P_{447} = (28,12,1,0)$
$8: P_{600} = (21,17,1,0)$
$9: P_{609} = (30,17,1,0)$
$10: P_{875} = (8,26,1,0)$
$11: P_{890} = (23,26,1,0)$
$12: P_{1059} = (1,0,0,1)$
$13: P_{1091} = (1,1,0,1)$
$14: P_{1183} = (29,3,0,1)$
$15: P_{1240} = (22,5,0,1)$
$16: P_{1448} = (6,12,0,1)$
$17: P_{1627} = (25,17,0,1)$
$18: P_{1910} = (20,26,0,1)$
$19: P_{2171} = (26,2,1,1)$
$20: P_{2212} = (3,4,1,1)$
$21: P_{2297} = (24,6,1,1)$
$22: P_{2330} = (25,7,1,1)$
$23: P_{2388} = (19,9,1,1)$
$24: P_{2441} = (8,11,1,1)$
$25: P_{2514} = (17,13,1,1)$
$26: P_{2571} = (10,15,1,1)$
$27: P_{2598} = (5,16,1,1)$
$28: P_{2687} = (30,18,1,1)$
$29: P_{2728} = (7,20,1,1)$
$30: P_{2759} = (6,21,1,1)$
$31: P_{2813} = (28,22,1,1)$
$32: P_{2846} = (29,23,1,1)$
$33: P_{2871} = (22,24,1,1)$
$34: P_{2904} = (23,25,1,1)$
$35: P_{2957} = (12,27,1,1)$
$36: P_{2997} = (20,28,1,1)$
$37: P_{3030} = (21,29,1,1)$
$38: P_{3087} = (14,31,1,1)$
$39: P_{3209} = (8,3,2,1)$
$40: P_{3282} = (17,5,2,1)$
$41: P_{3304} = (7,6,2,1)$
$42: P_{3363} = (2,8,2,1)$
$43: P_{3367} = (6,8,2,1)$
$44: P_{3439} = (14,10,2,1)$
$45: P_{3492} = (3,12,2,1)$
$46: P_{3513} = (24,12,2,1)$
$47: P_{3588} = (3,15,2,1)$
$48: P_{3589} = (4,15,2,1)$
$49: P_{3761} = (16,20,2,1)$
$50: P_{3800} = (23,21,2,1)$
$51: P_{3828} = (19,22,2,1)$
$52: P_{3829} = (20,22,2,1)$
$53: P_{3970} = (1,27,2,1)$
$54: P_{4040} = (7,29,2,1)$
$55: P_{4052} = (19,29,2,1)$
$56: P_{4172} = (11,1,3,1)$
$57: P_{4244} = (19,3,3,1)$
$58: P_{4286} = (29,4,3,1)$
$59: P_{4328} = (7,6,3,1)$
$60: P_{4366} = (13,7,3,1)$
$61: P_{4481} = (0,11,3,1)$
$62: P_{4494} = (13,11,3,1)$
$63: P_{4619} = (10,15,3,1)$
$64: P_{4665} = (24,16,3,1)$
$65: P_{4670} = (29,16,3,1)$
$66: P_{4676} = (3,17,3,1)$
$67: P_{4733} = (28,18,3,1)$
$68: P_{4749} = (12,19,3,1)$
$69: P_{4760} = (23,19,3,1)$
$70: P_{4796} = (27,20,3,1)$
$71: P_{4806} = (5,21,3,1)$
$72: P_{4855} = (22,22,3,1)$
$73: P_{4888} = (23,23,3,1)$
$74: P_{4967} = (6,26,3,1)$
$75: P_{5013} = (20,27,3,1)$
$76: P_{5024} = (31,27,3,1)$
$77: P_{5073} = (16,29,3,1)$
$78: P_{5141} = (20,31,3,1)$
$79: P_{5218} = (1,2,4,1)$
$80: P_{5323} = (10,5,4,1)$
$81: P_{5477} = (4,10,4,1)$
$82: P_{5493} = (20,10,4,1)$
$83: P_{5631} = (30,14,4,1)$
$84: P_{5709} = (12,17,4,1)$
$85: P_{5814} = (21,20,4,1)$
$86: P_{5865} = (8,22,4,1)$
$87: P_{5878} = (21,22,4,1)$
$88: P_{5961} = (8,25,4,1)$
$89: P_{5982} = (29,25,4,1)$

90 : $P_{5990} = (5, 26, 4, 1)$
91 : $P_{5992} = (7, 26, 4, 1)$
92 : $P_{6073} = (24, 28, 4, 1)$
93 : $P_{6094} = (13, 29, 4, 1)$
94 : $P_{6150} = (5, 31, 4, 1)$
95 : $P_{6161} = (16, 31, 4, 1)$
96 : $P_{6224} = (15, 1, 5, 1)$
97 : $P_{6259} = (18, 2, 5, 1)$
98 : $P_{6270} = (29, 2, 5, 1)$
99 : $P_{6293} = (20, 3, 5, 1)$
100 : $P_{6345} = (8, 5, 5, 1)$
101 : $P_{6457} = (24, 8, 5, 1)$
102 : $P_{6459} = (26, 8, 5, 1)$
103 : $P_{6488} = (23, 9, 5, 1)$
104 : $P_{6566} = (5, 12, 5, 1)$
105 : $P_{6600} = (7, 13, 5, 1)$
106 : $P_{6615} = (22, 13, 5, 1)$
107 : $P_{6657} = (0, 15, 5, 1)$
108 : $P_{6684} = (27, 15, 5, 1)$
109 : $P_{6711} = (22, 16, 5, 1)$
110 : $P_{6782} = (29, 18, 5, 1)$
111 : $P_{6838} = (21, 20, 5, 1)$
112 : $P_{6876} = (27, 21, 5, 1)$
113 : $P_{6894} = (13, 22, 5, 1)$
114 : $P_{6969} = (24, 24, 5, 1)$
115 : $P_{7002} = (25, 25, 5, 1)$
116 : $P_{7090} = (17, 28, 5, 1)$
117 : $P_{7107} = (2, 29, 5, 1)$
118 : $P_{7183} = (14, 31, 5, 1)$
119 : $P_{7260} = (27, 1, 6, 1)$
120 : $P_{7326} = (29, 3, 6, 1)$
121 : $P_{7490} = (1, 9, 6, 1)$
122 : $P_{7539} = (18, 10, 6, 1)$
123 : $P_{7650} = (1, 14, 6, 1)$
124 : $P_{7665} = (16, 14, 6, 1)$
125 : $P_{7735} = (22, 16, 6, 1)$
126 : $P_{7774} = (29, 17, 6, 1)$
127 : $P_{7794} = (17, 18, 6, 1)$
128 : $P_{7796} = (19, 18, 6, 1)$
129 : $P_{7799} = (22, 18, 6, 1)$
130 : $P_{7836} = (27, 19, 6, 1)$
131 : $P_{7976} = (7, 24, 6, 1)$
132 : $P_{8131} = (2, 29, 6, 1)$
133 : $P_{8187} = (26, 30, 6, 1)$
134 : $P_{8200} = (7, 31, 6, 1)$
135 : $P_{8234} = (9, 0, 7, 1)$
136 : $P_{8289} = (0, 2, 7, 1)$
137 : $P_{8374} = (21, 4, 7, 1)$
138 : $P_{8446} = (29, 6, 7, 1)$
139 : $P_{8625} = (16, 12, 7, 1)$
140 : $P_{8628} = (19, 12, 7, 1)$
141 : $P_{8646} = (5, 13, 7, 1)$
142 : $P_{8691} = (18, 14, 7, 1)$
143 : $P_{8740} = (3, 16, 7, 1)$
144 : $P_{8748} = (11, 16, 7, 1)$
145 : $P_{8827} = (26, 18, 7, 1)$
146 : $P_{8829} = (28, 18, 7, 1)$
147 : $P_{8928} = (31, 21, 7, 1)$
148 : $P_{8971} = (10, 23, 7, 1)$
149 : $P_{9097} = (8, 27, 7, 1)$
150 : $P_{9134} = (13, 28, 7, 1)$
151 : $P_{9142} = (21, 28, 7, 1)$
152 : $P_{9176} = (23, 29, 7, 1)$
153 : $P_{9179} = (26, 29, 7, 1)$
154 : $P_{9253} = (4, 0, 8, 1)$
155 : $P_{9260} = (11, 0, 8, 1)$
156 : $P_{9390} = (13, 4, 8, 1)$
157 : $P_{9425} = (16, 5, 8, 1)$
158 : $P_{9485} = (12, 7, 8, 1)$
159 : $P_{9499} = (26, 7, 8, 1)$
160 : $P_{9512} = (7, 8, 8, 1)$
161 : $P_{9524} = (19, 8, 8, 1)$
162 : $P_{9652} = (19, 12, 8, 1)$
163 : $P_{9898} = (9, 20, 8, 1)$
164 : $P_{9923} = (2, 21, 8, 1)$
165 : $P_{9948} = (27, 21, 8, 1)$
166 : $P_{9971} = (18, 22, 8, 1)$
167 : $P_{10010} = (25, 23, 8, 1)$
168 : $P_{10030} = (13, 24, 8, 1)$
169 : $P_{10079} = (30, 25, 8, 1)$
170 : $P_{10161} = (16, 28, 8, 1)$
171 : $P_{10188} = (11, 29, 8, 1)$
172 : $P_{10200} = (23, 29, 8, 1)$
173 : $P_{10244} = (3, 31, 8, 1)$
174 : $P_{10249} = (8, 31, 8, 1)$
175 : $P_{10340} = (3, 2, 9, 1)$
176 : $P_{10373} = (4, 3, 9, 1)$
177 : $P_{10428} = (27, 4, 9, 1)$
178 : $P_{10486} = (21, 6, 9, 1)$
179 : $P_{10487} = (22, 6, 9, 1)$
180 : $P_{10558} = (29, 8, 9, 1)$
181 : $P_{10607} = (14, 10, 9, 1)$
182 : $P_{10853} = (4, 18, 9, 1)$
183 : $P_{10896} = (15, 19, 9, 1)$
184 : $P_{10963} = (18, 21, 9, 1)$
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$590: P_{33258} = (9, 14, 31, 1)$
$591: P_{33308} = (27, 15, 31, 1)$
$592: P_{33329} = (16, 16, 31, 1)$
$593: P_{33341} = (28, 16, 31, 1)$
$594: P_{33362} = (17, 17, 31, 1)$
$595: P_{33373} = (28, 17, 31, 1)$
$596: P_{33417} = (8, 19, 31, 1)$
$597: P_{33465} = (24, 20, 31, 1)$
$598: P_{33525} = (20, 22, 31, 1)$
$599: P_{33529} = (24, 22, 31, 1)$
$600: P_{33584} = (15, 24, 31, 1)$
$601: P_{33681} = (16, 27, 31, 1)$
$602: P_{33730} = (1, 29, 31, 1)$
$603: P_{33767} = (6, 30, 31, 1)$

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

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_2	ℓ_4	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}	ℓ_{16}	ℓ_{17}	ℓ_{18}
in point	P_{2083}	P_{3006}	P_{2083}	P_{2839}	P_{2311}	P_{2083}	P_{2083}	P_{2874}	P_{2773}	P_{2083}

Line 1 intersects

Line	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{17}
in point	P_{8947}	P_{25236}	P_{20306}	P_{19469}	P_{1832}	P_{18376}	P_{27972}	P_{6757}

Line 2 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_6	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{15}	ℓ_{18}
in point	P_{2083}	P_{31695}	P_{9837}	P_{2083}	P_{2083}	P_{3320}	P_{30752}	P_{2083}	P_{12987}	P_{2083}

Line 3 intersects

Line	ℓ_4	ℓ_5	ℓ_8	ℓ_9	ℓ_{11}	ℓ_{14}	ℓ_{18}	ℓ_{20}
in point	P_{4985}	P_{14579}	P_{3874}	P_{30876}	P_{1976}	P_{25930}	P_{21522}	P_{18272}

Line 4 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_7	ℓ_{13}	ℓ_{19}	ℓ_{20}
in point	P_{3006}	P_{8947}	P_{31695}	P_{4985}	P_{18769}	P_{27205}	P_{30719}	P_{29442}

Line 5 intersects

Line	ℓ_2	ℓ_3	ℓ_8	ℓ_{10}	ℓ_{13}	ℓ_{16}	ℓ_{17}	ℓ_{19}
in point	P_{9837}	P_{14579}	P_{6280}	P_{8588}	P_{29354}	P_{5378}	P_{23747}	P_{1819}

Line 6 intersects

Line	ℓ_0	ℓ_2	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{18}	ℓ_{19}	ℓ_{20}
in point	P_{2083}	P_{2083}	P_{24319}	P_{2083}	P_{17348}	P_{11611}	P_{2083}	P_{2083}	P_{5817}	P_{25203}

Line 7 intersects

Line	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{16}	ℓ_{18}	ℓ_{19}
in point	P_{18769}	P_{23370}	P_{15094}	P_{4486}	P_{1302}	P_{25897}	P_{10477}	P_{13947}

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_5	ℓ_6	ℓ_7	ℓ_{12}	ℓ_{15}
in point	P_{2839}	P_{25236}	P_{3874}	P_{6280}	P_{24319}	P_{23370}	P_{7601}	P_{13710}

Line 9 intersects

Line	ℓ_0	ℓ_3	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{15}	ℓ_{19}
in point	P_{2311}	P_{30876}	P_{7401}	P_{25264}	P_{13917}	P_{18114}	P_{8555}	P_{5123}

Line 10 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_5	ℓ_6	ℓ_7	ℓ_9	ℓ_{14}	ℓ_{18}	ℓ_{20}
in point	P_{2083}	P_{20306}	P_{2083}	P_{8588}	P_{2083}	P_{15094}	P_{7401}	P_{2083}	P_{2083}	P_{32262}

Line 11 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_7	ℓ_9	ℓ_{16}	ℓ_{17}
in point	P_{19469}	P_{3320}	P_{1976}	P_{17348}	P_{4486}	P_{25264}	P_{28188}	P_{23023}

Line 12 intersects

Line	ℓ_2	ℓ_7	ℓ_8	ℓ_9	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{20}
in point	P_{30752}	P_{1302}	P_{7601}	P_{13917}	P_{4044}	P_{15748}	P_{15266}	P_{5872}

Line 13 intersects

Line	ℓ_1	ℓ_4	ℓ_5	ℓ_6	ℓ_9	ℓ_{12}	ℓ_{16}	ℓ_{18}
in point	P_{1832}	P_{27205}	P_{29354}	P_{11611}	P_{18114}	P_{4044}	P_{18646}	P_{23056}

Line 14 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_{10}	ℓ_{12}	ℓ_{16}	ℓ_{18}	ℓ_{19}
in point	P_{2083}	P_{18376}	P_{2083}	P_{25930}	P_{2083}	P_{2083}	P_{15748}	P_{27476}	P_{2083}	P_{33510}

Line 15 intersects

Line	ℓ_1	ℓ_2	ℓ_8	ℓ_9	ℓ_{16}	ℓ_{18}	ℓ_{19}	ℓ_{20}
in point	P_{27972}	P_{12987}	P_{13710}	P_{8555}	P_{29932}	P_{29533}	P_{6674}	P_{1759}

Line 16 intersects

Line	ℓ_0	ℓ_5	ℓ_7	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{20}
in point	P_{2874}	P_{5378}	P_{25897}	P_{28188}	P_{18646}	P_{27476}	P_{29932}	P_{22382}

Line 17 intersects

Line	ℓ_0	ℓ_1	ℓ_5	ℓ_{11}	ℓ_{12}	ℓ_{18}	ℓ_{19}	ℓ_{20}
in point	P_{2773}	P_{6757}	P_{23747}	P_{23023}	P_{15266}	P_{22187}	P_{26592}	P_{28088}

Line 18 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_6	ℓ_7	ℓ_{10}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{17}
in point	P_{2083}	P_{2083}	P_{21522}	P_{2083}	P_{10477}	P_{2083}	P_{23056}	P_{2083}	P_{29533}	P_{22187}

Line 19 intersects

Line	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_9	ℓ_{14}	ℓ_{15}	ℓ_{17}
in point	P_{30719}	P_{1819}	P_{5817}	P_{13947}	P_{5123}	P_{33510}	P_{6674}	P_{26592}

Line 20 intersects

Line	ℓ_3	ℓ_4	ℓ_6	ℓ_{10}	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{17}
in point	P_{18272}	P_{29442}	P_{25203}	P_{32262}	P_{5872}	P_{1759}	P_{22382}	P_{28088}

The surface has 1217 points:
Too many to print.