# Rank-65900 over GF(64)

January 15, 2021

## The equation

The equation of the surface is:

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

( 1, 0, 0, 1, 0, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0 ) The point rank of the equation over  $\mathrm{GF}(64)$  is -2130177978

#### General information

Number of lines	15
Number of points	4417
Number of singular points	1
Number of Eckardt points	1
Number of double points	33
Number of single points	900
Number of points off lines	3482
Number of Hesse planes	0
Number of axes	0
Type of points on lines	$65^{15}$
Type of lines on points	$6, 3, 2^{33}, 1^{900}, 0^{3482}$

## Singular Points

The surface has 1 singular points:

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

#### The 15 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & \epsilon^9 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{12516288} = \begin{bmatrix} 1 & 0 & 0 & 47 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{12516288} = \mathbf{Pl}(10, 0, 0, 1, 0, 0)_{139}$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & 0 & \epsilon^{18} \\ 0 & 1 & 0 & 0 \end{bmatrix}_{2929344} = \begin{bmatrix} 1 & 0 & 0 & 11 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{2929344} = \mathbf{P} \mathbf{I}(37,0,0,1,0,0)_{166}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & 0 & \epsilon^{36} \\ 0 & 1 & 0 & 0 \end{bmatrix}_{9586944} = \begin{bmatrix} 1 & 0 & 0 & 36 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{9586944} = \mathbf{P} \mathbf{I}(46,0,0,1,0,0)_{175}$$

$$\ell_3 = \begin{bmatrix} 1 & \epsilon^{21} & 0 & \epsilon^{18} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{3170617} = \begin{bmatrix} 1 & 57 & 0 & 11 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{3170617} = \mathbf{P} \mathbf{I}(0,12,56,0,0,1)_{277588}$$

$$\ell_4 = \begin{bmatrix} 1 & \epsilon^{21} & 0 & \epsilon^{36} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{9828217} = \begin{bmatrix} 1 & 57 & 0 & 36 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{9828217} = \mathbf{P} \mathbf{I}(0,21,56,0,0,1)_{277597}$$

$$\ell_5 = \begin{bmatrix} 1 & \epsilon^{42} & 0 & \epsilon^{36} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{9824056} = \begin{bmatrix} 1 & 56 & 0 & 36 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{9824056} = \mathbf{P} \mathbf{I}(0,49,57,0,0,1)_{277752}$$

$$\ell_6 = \begin{bmatrix} 1 & \epsilon^{42} & 0 & \epsilon^{18} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{3166456} = \begin{bmatrix} 1 & 56 & 0 & 11 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{3166456} = \mathbf{P} \mathbf{I}(0,7,57,0,0,1)_{277710}$$

$$\ell_7 = \begin{bmatrix} 1 & \epsilon^{42} & 0 & \epsilon^{9} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{12753400} = \begin{bmatrix} 1 & 56 & 0 & 47 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{12753400} = \mathbf{P} \mathbf{I}(0,54,57,0,0,1)_{277757}$$

$$\ell_8 = \begin{bmatrix} 1 & \epsilon^{21} & 0 & \epsilon^{9} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{12757561} = \begin{bmatrix} 1 & 57 & 0 & 47 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{12757561} = \mathbf{P} \mathbf{I}(0,25,56,0,0,1)_{277601}$$

$$\ell_9 = \begin{bmatrix} 1 & 0 & \epsilon^{58} & \epsilon^{14} \\ 0 & 1 & \epsilon^{45} & \epsilon^{36} \end{bmatrix}_{15460456} = \begin{bmatrix} 1 & 0 & 3 & 58 \\ 0 & 1 & 37 & 36 \end{bmatrix}_{15460456} = \mathbf{P} \mathbf{I}(14,38,34,22,28,1)_{7761367}$$

$$\ell_{10} = \begin{bmatrix} 1 & 0 & \epsilon^{53} & \epsilon^{28} \\ 0 & 1 & \epsilon^{45} & \epsilon^{36} \end{bmatrix}_{8149579} = \begin{bmatrix} 1 & 0 & 38 & 30 \\ 0 & 1 & 37 & 36 \end{bmatrix}_{8149579} = \mathbf{P} \mathbf{I}(32,3,41,23,29,1)_{8048098}$$

$$\ell_{11} = \begin{bmatrix} 1 & 0 & \epsilon^{53} & \epsilon^{28} \\ 0 & 1 & \epsilon^{54} & \epsilon^{48} \end{bmatrix}_{9433701} = \begin{bmatrix} 1 & 0 & 27 & 35 \\ 0 & 1 & 10 & 11 \end{bmatrix}_{9433701} = \mathbf{P} \mathbf{I}(44,17,19,28,50,1)_{13468378}$$

$$\ell_{12} = \begin{bmatrix} 1 & 0 & \epsilon^{46} & \epsilon^{35} \\ 0 & 1 & \epsilon^{54} & \epsilon^{48} \end{bmatrix}_{9433701} = \begin{bmatrix} 1 & 0 & 43 & 18 \\ 0 & 1 & 46 & 47 \end{bmatrix}_{4975449} = \mathbf{P} \mathbf{I}(63,5,31,50,23,1)_{6437660}$$

$$\ell_{14} = \begin{bmatrix} 1 & 0 & \epsilon^{46} & \epsilon^{45} \\ 0 & 1 & \epsilon^{54} & \epsilon^{48} \end{bmatrix}_{4975449} = \begin{bmatrix} 1 & 0 & 1 & 40 \\ 0 & 1 & 10 & 11 \end{bmatrix}_{10723611} = \mathbf{P} \mathbf{I}(9,27,60,29,51,1)_{1388805}$$

Rank of lines: ( 12516288, 2929344, 9586944, 3170617, 9828217, 9824056, 3166456, 12753400, 12757561, 15460456, 8149579, 16268403, 9433701, 4975449, 10723611)

Rank of points on Klein quadric: (139, 166, 175, 277588, 277597, 277752, 277710, 277757, 277601, 7761367, 8048098, 6285253, 13468378, 6437660, 13888805)

#### **Eckardt Points**

The surface has 1 Eckardt points:  $0: P_1 = \mathbf{P}(0, 1, 0, 0) = \mathbf{P}(0, 1, 0, 0).$ 

#### **Double Points**

The surface has 33 Double points: The double points on the surface are:

$P_{7500} = (10, 52, 0, 1) = \ell_0 \cap \ell_7$
$P_{8140} = (10, 62, 0, 1) = \ell_0 \cap \ell_8$
$P_{7564} = (10, 53, 0, 1) = \ell_0 \cap \ell_{11}$
$P_{8204} = (10, 63, 0, 1) = \ell_0 \cap \ell_{13}$
$P_{4711} = (37, 8, 0, 1) = \ell_1 \cap \ell_3$
$P_{7079} = (37, 45, 0, 1) = \ell_1 \cap \ell_6$
$P_{7015} = (37, 44, 0, 1) = \ell_1 \cap \ell_{12}$
$P_{4775} = (37, 9, 0, 1) = \ell_1 \cap \ell_{14}$
$P_{5168} = (46, 15, 0, 1) = \ell_2 \cap \ell_4$
$P_{6320} = (46, 33, 0, 1) = \ell_2 \cap \ell_5$
$P_{5104} = (46, 14, 0, 1) = \ell_2 \cap \ell_9$
$P_{6256} = (46, 32, 0, 1) = \ell_2 \cap \ell_{10}$
$P_{8806} = (37, 8, 1, 1) = \ell_3 \cap \ell_9$
$P_{152166} = (37, 8, 36, 1) = \ell_3 \cap \ell_{11}$
$P_{197679} = (46, 15, 47, 1) = \ell_4 \cap \ell_{12}$
$P_{9263} = (46, 15, 1, 1) = \ell_4 \cap \ell_{13}$
$P_{10415} = (46, 33, 1, 1) = \ell_5 \cap \ell_{11}$

## $P_{198831} = (46, 33, 47, 1) = \ell_5 \cap \ell_{14}$ $P_{11174} = (37, 45, 1, 1) = \ell_6 \cap \ell_{10}$ $P_{154534} = (37, 45, 36, 1) = \ell_6 \cap \ell_{13}$ $P_{52555} = (10, 52, 11, 1) = \ell_7 \cap \ell_9$ $P_{11595} = (10, 52, 1, 1) = \ell_7 \cap \ell_{12}$ $P_{53195} = (10, 62, 11, 1) = \ell_8 \cap \ell_{10}$ $P_{12235} = (10, 62, 1, 1) = \ell_8 \cap \ell_{14}$ $P_{199617} = (0, 46, 47, 1) = \ell_9 \cap \ell_{10}$ $P_{195148} = (11, 40, 46, 1) = \ell_9 \cap \ell_{13}$ $P_{156912} = (47, 18, 37, 1) = \ell_9 \cap \ell_{14}$ $P_{194828} = (11, 35, 46, 1) = \ell_{10} \cap \ell_{11}$ $P_{159664} = (47, 61, 37, 1) = \ell_{10} \cap \ell_{12}$ $P_{47077} = (36, 30, 10, 1) = \ell_{11} \cap \ell_{12}$ $P_{49857} = (0, 10, 11, 1) = \ell_{11} \cap \ell_{13}$ $P_{153985} = (0, 37, 36, 1) = \ell_{12} \cap \ell_{14}$ $P_{48869} = (36, 58, 10, 1) = \ell_{13} \cap \ell_{14}$

#### Single Points

The surface has 900 single points: The single points on the surface are:

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0: P_{462} = (11, 6, 1, 0) lies on line \ell_9
1: P_{910} = (11, 13, 1, 0) lies on line \ell_{10}
2: P_{1383} = (36, 20, 1, 0) lies on line \ell_{11}
3: P_{1650} = (47, 24, 1, 0) lies on line \ell_{12}
4: P_{3175} = (36, 48, 1, 0) lies on line \ell_{13}
5: P_{3634} = (47, 55, 1, 0) lies on line \ell_{14}
6: P_{4172} = (10, 0, 0, 1) lies on line \ell_0
7: P_{4199} = (37, 0, 0, 1) lies on line \ell_1
8: P_{4208} = (46, 0, 0, 1) lies on line \ell_2
9: P_{4236} = (10, 1, 0, 1) lies on line \ell_0
10: P_{4263} = (37, 1, 0, 1) lies on line \ell_1
11: P_{4272} = (46, 1, 0, 1) lies on line \ell_2
12: P_{4300} = (10, 2, 0, 1) lies on line \ell_0
13: P_{4327} = (37, 2, 0, 1) lies on line \ell_1
14: P_{4336} = (46, 2, 0, 1) lies on line \ell_2
15: P_{4364} = (10, 3, 0, 1) lies on line \ell_0
16: P_{4391} = (37, 3, 0, 1) lies on line \ell_1
17: P_{4400} = (46, 3, 0, 1) lies on line \ell_2
18: P_{4428} = (10, 4, 0, 1) lies on line \ell_0
19: P_{4455} = (37, 4, 0, 1) lies on line \ell_1
20: P_{4464} = (46, 4, 0, 1) lies on line \ell_2
21: P_{4492} = (10, 5, 0, 1) lies on line \ell_0
22: P_{4519} = (37, 5, 0, 1) lies on line \ell_1
23: P_{4528} = (46, 5, 0, 1) lies on line \ell_2
24: P_{4556} = (10, 6, 0, 1) lies on line \ell_0
25: P_{4583} = (37, 6, 0, 1) lies on line \ell_1
26: P_{4592} = (46, 6, 0, 1) lies on line \ell_2
27: P_{4620} = (10, 7, 0, 1) lies on line \ell_0
28: P_{4647} = (37, 7, 0, 1) lies on line \ell_1
29: P_{4656} = (46, 7, 0, 1) lies on line \ell_2
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30: P_{4684} = (10, 8, 0, 1) lies on line \ell_0
31: P_{4720} = (46, 8, 0, 1) lies on line \ell_2
32: P_{4748} = (10, 9, 0, 1) lies on line \ell_0
33: P_{4784} = (46, 9, 0, 1) lies on line \ell_2
34: P_{4812} = (10, 10, 0, 1) lies on line \ell_0
35: P_{4839} = (37, 10, 0, 1) lies on line \ell_1
36: P_{4848} = (46, 10, 0, 1) lies on line \ell_2
37: P_{4876} = (10, 11, 0, 1) lies on line \ell_0
38: P_{4903} = (37, 11, 0, 1) lies on line \ell_1
39: P_{4912} = (46, 11, 0, 1) lies on line \ell_2
40: P_{4940} = (10, 12, 0, 1) lies on line \ell_0
41: P_{4967} = (37, 12, 0, 1) lies on line \ell_1
42: P_{4976} = (46, 12, 0, 1) lies on line \ell_2
43: P_{5004} = (10, 13, 0, 1) lies on line \ell_0
44: P_{5031} = (37, 13, 0, 1) lies on line \ell_1
45: P_{5040} = (46, 13, 0, 1) lies on line \ell_2
46: P_{5068} = (10, 14, 0, 1) lies on line \ell_0
47: P_{5095} = (37, 14, 0, 1) lies on line \ell_1
48: P_{5132} = (10, 15, 0, 1) lies on line \ell_0
49: P_{5159} = (37, 15, 0, 1) lies on line \ell_1
50: P_{5196} = (10, 16, 0, 1) lies on line \ell_0
51: P_{5223} = (37, 16, 0, 1) lies on line \ell_1
52: P_{5232} = (46, 16, 0, 1) lies on line \ell_2
53: P_{5260} = (10, 17, 0, 1) lies on line \ell_0
54: P_{5287} = (37, 17, 0, 1) lies on line \ell_1
55: P_{5296} = (46, 17, 0, 1) lies on line \ell_2
56: P_{5324} = (10, 18, 0, 1) lies on line \ell_0
57: P_{5351} = (37, 18, 0, 1) lies on line \ell_1
58 : P_{5360} = (46, 18, 0, 1) lies on line \ell_2
59: P_{5388} = (10, 19, 0, 1) lies on line \ell_0
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60: P_{5415} = (37, 19, 0, 1) lies on line \ell_1
                                                                     114: P_{6604} = (10, 38, 0, 1) lies on line \ell_0
                                                                     115: P_{6631} = (37, 38, 0, 1) lies on line \ell_1
61: P_{5424} = (46, 19, 0, 1) lies on line \ell_2
62: P_{5452} = (10, 20, 0, 1) lies on line \ell_0
                                                                     116: P_{6640} = (46, 38, 0, 1) lies on line \ell_2
63: P_{5479} = (37, 20, 0, 1) lies on line \ell_1
                                                                     117: P_{6668} = (10, 39, 0, 1) lies on line \ell_0
64: P_{5488} = (46, 20, 0, 1) lies on line \ell_2
                                                                     118: P_{6695} = (37, 39, 0, 1) lies on line \ell_1
65: P_{5516} = (10, 21, 0, 1) lies on line \ell_0
                                                                     119: P_{6704} = (46, 39, 0, 1) lies on line \ell_2
66: P_{5543} = (37, 21, 0, 1) lies on line \ell_1
                                                                     120: P_{6732} = (10, 40, 0, 1) lies on line \ell_0
67: P_{5552} = (46, 21, 0, 1) lies on line \ell_2
                                                                     121: P_{6759} = (37, 40, 0, 1) lies on line \ell_1
68: P_{5580} = (10, 22, 0, 1) lies on line \ell_0
                                                                     122: P_{6768} = (46, 40, 0, 1) lies on line \ell_2
69: P_{5607} = (37, 22, 0, 1) lies on line \ell_1
                                                                     123: P_{6796} = (10, 41, 0, 1) lies on line \ell_0
70: P_{5616} = (46, 22, 0, 1) lies on line \ell_2
                                                                     124: P_{6823} = (37, 41, 0, 1) lies on line \ell_1
71: P_{5644} = (10, 23, 0, 1) lies on line \ell_0
                                                                     125: P_{6832} = (46, 41, 0, 1) lies on line \ell_2
72: P_{5671} = (37, 23, 0, 1) lies on line \ell_1
                                                                     126: P_{6860} = (10, 42, 0, 1) lies on line \ell_0
73: P_{5680} = (46, 23, 0, 1) lies on line \ell_2
                                                                     127: P_{6887} = (37, 42, 0, 1) lies on line \ell_1
74: P_{5708} = (10, 24, 0, 1) lies on line \ell_0
                                                                     128: P_{6896} = (46, 42, 0, 1) lies on line \ell_2
75: P_{5735} = (37, 24, 0, 1) lies on line \ell_1
                                                                     129: P_{6924} = (10, 43, 0, 1) lies on line \ell_0
76: P_{5744} = (46, 24, 0, 1) lies on line \ell_2
                                                                     130: P_{6951} = (37, 43, 0, 1) lies on line \ell_1
77: P_{5772} = (10, 25, 0, 1) lies on line \ell_0
                                                                     131: P_{6960} = (46, 43, 0, 1) lies on line \ell_2
78: P_{5799} = (37, 25, 0, 1) lies on line \ell_1
                                                                     132: P_{6988} = (10, 44, 0, 1) lies on line \ell_0
79: P_{5808} = (46, 25, 0, 1) lies on line \ell_2
                                                                     133: P_{7024} = (46, 44, 0, 1) lies on line \ell_2
80: P_{5836} = (10, 26, 0, 1) lies on line \ell_0
                                                                     134 : P_{7052} = (10, 45, 0, 1) lies on line \ell_0
81: P_{5863} = (37, 26, 0, 1) lies on line \ell_1
                                                                     135: P_{7088} = (46, 45, 0, 1) lies on line \ell_2
82: P_{5872} = (46, 26, 0, 1) lies on line \ell_2
                                                                     136: P_{7116} = (10, 46, 0, 1) lies on line \ell_0
83 : P_{5900} = (10, 27, 0, 1) lies on line \ell_0
                                                                     137 : P_{7143} = (37, 46, 0, 1) lies on line \ell_1
84: P_{5927} = (37, 27, 0, 1) lies on line \ell_1
                                                                     138: P_{7152} = (46, 46, 0, 1) lies on line \ell_2
85: P_{5936} = (46, 27, 0, 1) lies on line \ell_2
                                                                     139 : P_{7180} = (10, 47, 0, 1) lies on line \ell_0
86: P_{5964} = (10, 28, 0, 1) lies on line \ell_0
                                                                     140: P_{7207} = (37, 47, 0, 1) lies on line \ell_1
87: P_{5991} = (37, 28, 0, 1) lies on line \ell_1
                                                                     141: P_{7216} = (46, 47, 0, 1) lies on line \ell_2
88: P_{6000} = (46, 28, 0, 1) lies on line \ell_2
                                                                     142: P_{7244} = (10, 48, 0, 1) lies on line \ell_0
89: P_{6028} = (10, 29, 0, 1) lies on line \ell_0
                                                                     143: P_{7271} = (37, 48, 0, 1) lies on line \ell_1
90: P_{6055} = (37, 29, 0, 1) lies on line \ell_1
                                                                     144: P_{7280} = (46, 48, 0, 1) lies on line \ell_2
91: P_{6064} = (46, 29, 0, 1) lies on line \ell_2
                                                                     145: P_{7308} = (10, 49, 0, 1) lies on line \ell_0
92: P_{6092} = (10, 30, 0, 1) lies on line \ell_0
                                                                     146: P_{7335} = (37, 49, 0, 1) lies on line \ell_1
93: P_{6119} = (37, 30, 0, 1) lies on line \ell_1
                                                                     147: P_{7344} = (46, 49, 0, 1) lies on line \ell_2
94: P_{6128} = (46, 30, 0, 1) lies on line \ell_2
                                                                     148: P_{7372} = (10, 50, 0, 1) lies on line \ell_0
95: P_{6156} = (10, 31, 0, 1) lies on line \ell_0
                                                                     149: P_{7399} = (37, 50, 0, 1) lies on line \ell_1
96: P_{6183} = (37, 31, 0, 1) lies on line \ell_1
                                                                     150: P_{7408} = (46, 50, 0, 1) lies on line \ell_2
97: P_{6192} = (46, 31, 0, 1) lies on line \ell_2
                                                                     151: P_{7436} = (10, 51, 0, 1) lies on line \ell_0
98: P_{6220} = (10, 32, 0, 1) lies on line \ell_0
                                                                     152: P_{7463} = (37, 51, 0, 1) lies on line \ell_1
99: P_{6247} = (37, 32, 0, 1) lies on line \ell_1
                                                                     153: P_{7472} = (46, 51, 0, 1) lies on line \ell_2
100: P_{6284} = (10, 33, 0, 1) lies on line \ell_0
                                                                     154: P_{7527} = (37, 52, 0, 1) lies on line \ell_1
101: P_{6311} = (37, 33, 0, 1) lies on line \ell_1
                                                                     155: P_{7536} = (46, 52, 0, 1) lies on line \ell_2
102: P_{6348} = (10, 34, 0, 1) lies on line \ell_0
                                                                     156: P_{7591} = (37, 53, 0, 1) lies on line \ell_1
103: P_{6375} = (37, 34, 0, 1) lies on line \ell_1
                                                                     157: P_{7600} = (46, 53, 0, 1) lies on line \ell_2
104: P_{6384} = (46, 34, 0, 1) lies on line \ell_2
                                                                     158: P_{7628} = (10, 54, 0, 1) lies on line \ell_0
105: P_{6412} = (10, 35, 0, 1) lies on line \ell_0
                                                                     159: P_{7655} = (37, 54, 0, 1) lies on line \ell_1
106: P_{6439} = (37, 35, 0, 1) lies on line \ell_1
                                                                     160: P_{7664} = (46, 54, 0, 1) lies on line \ell_2
107: P_{6448} = (46, 35, 0, 1) lies on line \ell_2
                                                                     161: P_{7692} = (10, 55, 0, 1) lies on line \ell_0
108: P_{6476} = (10, 36, 0, 1) lies on line \ell_0
                                                                     162: P_{7719} = (37, 55, 0, 1) lies on line \ell_1
109: P_{6503} = (37, 36, 0, 1) lies on line \ell_1
                                                                     163: P_{7728} = (46, 55, 0, 1) lies on line \ell_2
110: P_{6512} = (46, 36, 0, 1) lies on line \ell_2
                                                                     164: P_{7756} = (10, 56, 0, 1) lies on line \ell_0
111: P_{6540} = (10, 37, 0, 1) lies on line \ell_0
                                                                     165: P_{7783} = (37, 56, 0, 1) lies on line \ell_1
112 : P_{6567} = (37, 37, 0, 1) lies on line \ell_1
                                                                     166: P_{7792} = (46, 56, 0, 1) lies on line \ell_2
113: P_{6576} = (46, 37, 0, 1) lies on line \ell_2
                                                                     167: P_{7820} = (10, 57, 0, 1) lies on line \ell_0
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168: P_{7847} = (37, 57, 0, 1) lies on line \ell_1
                                                                     222: P_{25190} = (37, 8, 5, 1) lies on line \ell_3
169: P_{7856} = (46, 57, 0, 1) lies on line \ell_2
                                                                      223: P_{25502} = (29, 13, 5, 1) lies on line \ell_{13}
                                                                     224: P_{25647} = (46, 15, 5, 1) lies on line \ell_4
170: P_{7884} = (10, 58, 0, 1) lies on line \ell_0
171: P_{7911} = (37, 58, 0, 1) lies on line \ell_1
                                                                      225: P_{25674} = (9, 16, 5, 1) lies on line \ell_9
172: P_{7920} = (46, 58, 0, 1) lies on line \ell_2
                                                                     226: P_{25694} = (29, 16, 5, 1) lies on line \ell_{11}
173: P_{7948} = (10, 59, 0, 1) lies on line \ell_0
                                                                     227: P_{26250} = (9, 25, 5, 1) lies on line \ell_{10}
174: P_{7975} = (37, 59, 0, 1) lies on line \ell_1
                                                                     228: P_{26710} = (21, 32, 5, 1) lies on line \ell_{14}
175: P_{7984} = (46, 59, 0, 1) lies on line \ell_2
                                                                     229: P_{26799} = (46, 33, 5, 1) lies on line \ell_5
176: P_{8012} = (10, 60, 0, 1) lies on line \ell_0
                                                                     230: P_{27558} = (37, 45, 5, 1) lies on line \ell_6
177: P_{8039} = (37, 60, 0, 1) lies on line \ell_1
                                                                     231: P_{27979} = (10, 52, 5, 1) lies on line \ell_7
178: P_{8048} = (46, 60, 0, 1) lies on line \ell_2
                                                                     232: P_{28054} = (21, 53, 5, 1) lies on line \ell_{12}
                                                                     233: P_{28619} = (10, 62, 5, 1) lies on line \ell_8
179: P_{8076} = (10, 61, 0, 1) lies on line \ell_0
180: P_{8103} = (37, 61, 0, 1) lies on line \ell_1
                                                                     234: P_{29286} = (37, 8, 6, 1) lies on line \ell_3
181: P_{8112} = (46, 61, 0, 1) lies on line \ell_2
                                                                     235: P_{29653} = (20, 14, 6, 1) lies on line \ell_{10}
182 : P_{8167} = (37, 62, 0, 1) lies on line \ell_1
                                                                     236: P_{29743} = (46, 15, 6, 1) lies on line \ell_4
183: P_{8176} = (46, 62, 0, 1) lies on line \ell_2
                                                                     237: P_{30278} = (5, 24, 6, 1) lies on line \ell_{14}
184: P_{8231} = (37, 63, 0, 1) lies on line \ell_1
                                                                     238: P_{30421} = (20, 26, 6, 1) lies on line \ell_9
185: P_{8240} = (46, 63, 0, 1) lies on line \ell_2
                                                                     239: P_{30598} = (5, 29, 6, 1) lies on line \ell_{12}
186: P_{12537} = (56, 2, 2, 1) lies on line \ell_9
                                                                     240: P_{30895} = (46, 33, 6, 1) lies on line \ell_5
                                                                     241: P_{31569} = (16, 44, 6, 1) lies on line \ell_{11}
187: P_{12763} = (26, 6, 2, 1) lies on line \ell_{14}
188: P_{12902} = (37, 8, 2, 1) lies on line \ell_3
                                                                     242 : P_{31654} = (37, 45, 6, 1) lies on line \ell_6
189 : P_{13359} = (46, 15, 2, 1) lies on line \ell_4
                                                                     243: P_{32075} = (10, 52, 6, 1) lies on line \ell_7
190 : P_{14171} = (26, 28, 2, 1) lies on line \ell_{12}
                                                                      244: P_{32593} = (16, 60, 6, 1) lies on line \ell_{13}
191 : P_{14244} = (35, 29, 2, 1) lies on line \ell_{11}
                                                                     245: P_{32715} = (10, 62, 6, 1) lies on line \ell_8
192: P_{14511} = (46, 33, 2, 1) lies on line \ell_5
                                                                     246: P_{33056} = (31, 3, 7, 1) lies on line \ell_{10}
193 : P_{15270} = (37, 45, 2, 1) lies on line \ell_6
                                                                     247: P_{33195} = (42, 5, 7, 1) lies on line \ell_{12}
194: P_{15691} = (10, 52, 2, 1) lies on line \ell_7
                                                                     248: P_{33382} = (37, 8, 7, 1) lies on line \ell_3
195: P_{16121} = (56, 58, 2, 1) lies on line \ell_{10}
                                                                     249: P_{33653} = (52, 12, 7, 1) lies on line \ell_{13}
196: P_{16331} = (10, 62, 2, 1) lies on line \ell_8
                                                                     250: P_{33839} = (46, 15, 7, 1) lies on line \ell_4
197: P_{16356} = (35, 62, 2, 1) lies on line \ell_{13}
                                                                     251: P_{34656} = (31, 28, 7, 1) lies on line \ell_9
198: P_{16756} = (51, 4, 3, 1) lies on line \ell_9
                                                                     252: P_{34991} = (46, 33, 7, 1) lies on line \ell_5
199: P_{16758} = (53, 4, 3, 1) lies on line \ell_{12}
                                                                     253: P_{35750} = (37, 45, 7, 1) lies on line \ell_6
200: P_{16998} = (37, 8, 3, 1) lies on line \ell_3
                                                                     254: P_{35883} = (42, 47, 7, 1) lies on line \ell_{14}
                                                                     255 : P_{36171} = (10, 52, 7, 1) lies on line \ell_7
201: P_{17032} = (7, 9, 3, 1) lies on line \ell_{11}
202: P_{17352} = (7, 14, 3, 1) lies on line \ell_{13}
                                                                     256: P_{36469} = (52, 56, 7, 1) lies on line \ell_{11}
                                                                     257: P_{36811} = (10, 62, 7, 1) lies on line \ell_8
203: P_{17455} = (46, 15, 3, 1) lies on line \ell_4
204: P_{18607} = (46, 33, 3, 1) lies on line \ell_5
                                                                     258: P_{37478} = (37, 8, 8, 1) lies on line \ell_3
205 : P_{19366} = (37, 45, 3, 1) lies on line \ell_6
                                                                      259: P_{37935} = (46, 15, 8, 1) lies on line \ell_4
206: P_{19638} = (53, 49, 3, 1) lies on line \ell_{14}
                                                                     260: P_{39087} = (46, 33, 8, 1) lies on line \ell_5
                                                                     261: P_{39576} = (23, 41, 8, 1) lies on line \ell_{10}
207: P_{19787} = (10, 52, 3, 1) lies on line \ell_7
208: P_{20020} = (51, 55, 3, 1) lies on line \ell_{10}
                                                                     262: P_{39846} = (37, 45, 8, 1) lies on line \ell_6
209: P_{20427} = (10, 62, 3, 1) lies on line \ell_8
                                                                     263: P_{39900} = (27, 46, 8, 1) lies on line \ell_{12}
210: P_{20858} = (57, 4, 4, 1) lies on line \ell_{11}
                                                                     264: P_{40267} = (10, 52, 8, 1) lies on line \ell_7
211: P_{21094} = (37, 8, 4, 1) lies on line \ell_3
                                                                     265: P_{40348} = (27, 53, 8, 1) lies on line \ell_{14}
212: P_{21551} = (46, 15, 4, 1) lies on line \ell_4
                                                                     266: P_{40398} = (13, 54, 8, 1) lies on line \ell_{11}
213: P_{21827} = (2, 20, 4, 1) lies on line \ell_{10}
                                                                     267: P_{40718} = (13, 59, 8, 1) lies on line \ell_{13}
214: P_{21955} = (2, 22, 4, 1) lies on line \ell_9
                                                                     268: P_{40907} = (10, 62, 8, 1) lies on line \ell_8
215: P_{22075} = (58, 23, 4, 1) lies on line \ell_{14}
                                                                     269: P_{40920} = (23, 62, 8, 1) lies on line \ell_9
216: P_{22703} = (46, 33, 4, 1) lies on line \ell_5
                                                                     270: P_{41205} = (52, 2, 9, 1) lies on line \ell_{14}
217: P_{23462} = (37, 45, 4, 1) lies on line \ell_6
                                                                     271: P_{41574} = (37, 8, 9, 1) lies on line \ell_3
218: P_{23483} = (58, 45, 4, 1) lies on line \ell_{12}
                                                                     272: P_{41770} = (41, 11, 9, 1) lies on line \ell_{13}
219: P_{23883} = (10, 52, 4, 1) lies on line \ell_7
                                                                     273: P_{42031} = (46, 15, 9, 1) lies on line \ell_4
                                                                     274 : P_{43183} = (46, 33, 9, 1) lies on line \ell_5
220: P_{24506} = (57, 61, 4, 1) lies on line \ell_{13}
221: P_{24523} = (10, 62, 4, 1) lies on line \ell_8
                                                                     275: P_{43242} = (41, 34, 9, 1) lies on line \ell_{11}
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276 : P_{43357} = (28, 36, 9, 1) lies on line \ell_{10}
                                                                     330: P_{65112} = (23, 56, 14, 1) lies on line \ell_{13}
                                                                     331: P_{65483} = (10, 62, 14, 1) lies on line \ell_8
277: P_{43942} = (37, 45, 9, 1) lies on line \ell_6
278: P_{44363} = (10, 52, 9, 1) lies on line \ell_7
                                                                     332: P_{66069} = (20, 7, 15, 1) lies on line \ell_{12}
279: P_{44533} = (52, 54, 9, 1) lies on line \ell_{12}
                                                                     333: P_{66150} = (37, 8, 15, 1) lies on line \ell_3
                                                                     334 : P_{66164} = (51, 8, 15, 1) lies on line \ell_{13}
280 : P_{44637} = (28, 56, 9, 1) lies on line \ell_9
281: P_{45003} = (10, 62, 9, 1) lies on line \ell_8
                                                                     335: P_{66279} = (38, 10, 15, 1) lies on line \ell_{10}
282: P_{45670} = (37, 8, 10, 1) lies on line \ell_3
                                                                     336: P_{66607} = (46, 15, 15, 1) lies on line \ell_4
283: P_{46127} = (46, 15, 10, 1) lies on line \ell_4
                                                                     337: P_{66837} = (20, 19, 15, 1) lies on line \ell_{14}
284 : P_{47279} = (46, 33, 10, 1) lies on line \ell_5
                                                                     338: P_{67759} = (46, 33, 15, 1) lies on line \ell_5
285: P_{48038} = (37, 45, 10, 1) lies on line \ell_6
                                                                     339: P_{68455} = (38, 44, 15, 1) lies on line \ell_9
286: P_{48322} = (1, 50, 10, 1) lies on line \ell_9
                                                                     340: P_{68518} = (37, 45, 15, 1) lies on line \ell_6
                                                                     341: P_{68939} = (10, 52, 15, 1) lies on line \ell_7
287: P_{48386} = (1, 51, 10, 1) lies on line \ell_{10}
288: P_{48459} = (10, 52, 10, 1) lies on line \ell_7
                                                                     342: P_{69428} = (51, 59, 15, 1) lies on line \ell_{11}
289: P_{49099} = (10, 62, 10, 1) lies on line \ell_8
                                                                     343: P_{69579} = (10, 62, 15, 1) lies on line \ell_8
                                                                     344: P_{70246} = (37, 8, 16, 1) lies on line \ell_3
290: P_{49612} = (11, 6, 11, 1) lies on line \ell_{12}
291: P_{49766} = (37, 8, 11, 1) lies on line \ell_3
                                                                     345: P_{70703} = (46, 15, 16, 1) lies on line \ell_4
292: P_{50060} = (11, 13, 11, 1) lies on line \ell_{14}
                                                                     346: P_{70718} = (61, 15, 16, 1) lies on line \ell_9
293 : P_{50223} = (46, 15, 11, 1) lies on line \ell_4
                                                                     347: P_{70777} = (56, 16, 16, 1) lies on line \ell_{14}
294 : P_{51375} = (46, 33, 11, 1) lies on line \ell_5
                                                                     348: P_{71855} = (46, 33, 16, 1) lies on line \ell_5
295: P_{52134} = (37, 45, 11, 1) lies on line \ell_6
                                                                     349: P_{72313} = (56, 40, 16, 1) lies on line \ell_{12}
296: P_{53823} = (62, 7, 12, 1) lies on line \ell_{11}
                                                                     350: P_{72614} = (37, 45, 16, 1) lies on line \ell_6
297: P_{53862} = (37, 8, 12, 1) lies on line \ell_3
                                                                     351: P_{72958} = (61, 50, 16, 1) lies on line \ell_{10}
298: P_{54319} = (46, 15, 12, 1) lies on line \ell_4
                                                                     352: P_{72965} = (4, 51, 16, 1) lies on line \ell_{11}
299: P_{55228} = (59, 29, 12, 1) lies on line \ell_{10}
                                                                     353: P_{73035} = (10, 52, 16, 1) lies on line \ell_7
300: P_{55471} = (46, 33, 12, 1) lies on line \ell_5
                                                                     354: P_{73221} = (4, 55, 16, 1) lies on line \ell_{13}
301: P_{55804} = (59, 38, 12, 1) lies on line \ell_9
                                                                     355: P_{73675} = (10, 62, 16, 1) lies on line \ell_8
302: P_{56069} = (4, 43, 12, 1) lies on line \ell_{14}
                                                                     356: P_{74273} = (32, 7, 17, 1) lies on line \ell_{13}
303: P_{56230} = (37, 45, 12, 1) lies on line \ell_6
                                                                     357: P_{74342} = (37, 8, 17, 1) lies on line \ell_3
304: P_{56325} = (4, 47, 12, 1) lies on line \ell_{12}
                                                                     358: P_{74423} = (54, 9, 17, 1) lies on line \ell_9
305: P_{56651} = (10, 52, 12, 1) lies on line \ell_7
                                                                     359: P_{74799} = (46, 15, 17, 1) lies on line \ell_4
306: P_{57023} = (62, 57, 12, 1) lies on line \ell_{13}
                                                                     360: P_{75951} = (46, 33, 17, 1) lies on line \ell_5
307: P_{57291} = (10, 62, 12, 1) lies on line \ell_8
                                                                     361: P_{76312} = (23, 39, 17, 1) lies on line \ell_{14}
308: P_{57958} = (37, 8, 13, 1) lies on line \ell_3
                                                                     362: P_{76321} = (32, 39, 17, 1) lies on line \ell_{11}
309: P_{58011} = (26, 9, 13, 1) lies on line \ell_{13}
                                                                     363: P_{76710} = (37, 45, 17, 1) lies on line \ell_6
310: P_{58415} = (46, 15, 13, 1) lies on line \ell_4
                                                                     364: P_{76888} = (23, 48, 17, 1) lies on line \ell_{12}
                                                                     365: P_{77131} = (10, 52, 17, 1) lies on line \ell_7
311: P_{58481} = (48, 16, 13, 1) lies on line \ell_{10}
312: P_{58651} = (26, 19, 13, 1) lies on line \ell_{11}
                                                                     366: P_{77771} = (10, 62, 17, 1) lies on line \ell_8
313 : P_{59244} = (43, 28, 13, 1) lies on line \ell_{14}
                                                                     367: P_{77879} = (54, 63, 17, 1) lies on line \ell_{10}
314: P_{59505} = (48, 32, 13, 1) lies on line \ell_9
                                                                     368: P_{78124} = (43, 3, 18, 1) lies on line \ell_9
315: P_{59567} = (46, 33, 13, 1) lies on line \ell_5
                                                                     369: P_{78438} = (37, 8, 18, 1) lies on line \ell_3
316: P_{60326} = (37, 45, 13, 1) lies on line \ell_6
                                                                     370: P_{78895} = (46, 15, 18, 1) lies on line \ell_4
317: P_{60747} = (10, 52, 13, 1) lies on line \ell_7
                                                                     371: P_{79432} = (7, 24, 18, 1) lies on line \ell_{12}
318 : P_{60972} = (43, 55, 13, 1) lies on line \ell_{12}
                                                                     372: P_{79662} = (45, 27, 18, 1) lies on line \ell_{11}
319: P_{61387} = (10, 62, 13, 1) lies on line \ell_8
                                                                     373: P_{79880} = (7, 31, 18, 1) lies on line \ell_{14}
320: P_{61998} = (45, 7, 14, 1) lies on line \ell_{10}
                                                                     374: P_{80047} = (46, 33, 18, 1) lies on line \ell_5
321: P_{62054} = (37, 8, 14, 1) lies on line \ell_3
                                                                     375: P_{80492} = (43, 40, 18, 1) lies on line \ell_{10}
322: P_{62511} = (46, 15, 14, 1) lies on line \ell_4
                                                                     376: P_{80806} = (37, 45, 18, 1) lies on line \ell_6
323: P_{63548} = (59, 31, 14, 1) lies on line \ell_{12}
                                                                     377: P_{81227} = (10, 52, 18, 1) lies on line \ell_7
324: P_{63663} = (46, 33, 14, 1) lies on line \ell_5
                                                                     378: P_{81390} = (45, 54, 18, 1) lies on line \ell_{13}
325: P_{63868} = (59, 36, 14, 1) lies on line \ell_{14}
                                                                     379: P_{81867} = (10, 62, 18, 1) lies on line \ell_8
                                                                     380: P_{82025} = (40, 0, 19, 1) lies on line \ell_{12}
326: P_{64238} = (45, 42, 14, 1) lies on line \ell_9
327: P_{64422} = (37, 45, 14, 1) lies on line \ell_6
                                                                     381: P_{82337} = (32, 5, 19, 1) lies on line \ell_9
328 : P_{64536} = (23, 47, 14, 1) lies on line \ell_{11}
                                                                     382: P_{82378} = (9, 6, 19, 1) lies on line \ell_{13}
329: P_{64843} = (10, 52, 14, 1) lies on line \ell_7
                                                                     383: P_{82534} = (37, 8, 19, 1) lies on line \ell_3
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384: P_{82954} = (9, 15, 19, 1) lies on line \ell_{11}
                                                                     438 : P_{102347} = (10, 62, 23, 1) lies on line \ell_8
385: P_{82991} = (46, 15, 19, 1) lies on line \ell_4
                                                                     439 : P_{102395} = (58, 62, 23, 1) lies on line \ell_{11}
386: P_{84143} = (46, 33, 19, 1) lies on line \ell_5
                                                                     440: P_{103014} = (37, 8, 24, 1) lies on line \ell_3
387: P_{84385} = (32, 37, 19, 1) lies on line \ell_{10}
                                                                     441: P_{103471} = (46, 15, 24, 1) lies on line \ell_4
388: P_{84585} = (40, 40, 19, 1) lies on line \ell_{14}
                                                                     442: P_{104623} = (46, 33, 24, 1) lies on line \ell_5
389: P_{84902} = (37, 45, 19, 1) lies on line \ell_6
                                                                     443: P_{105159} = (6, 42, 24, 1) lies on line \ell_{12}
390: P_{85323} = (10, 52, 19, 1) lies on line \ell_7
                                                                     444: P_{105287} = (6, 44, 24, 1) lies on line \ell_{14}
391: P_{85963} = (10, 62, 19, 1) lies on line \ell_8
                                                                     445: P_{105382} = (37, 45, 24, 1) lies on line \ell_6
392 : P_{86264} = (55, 2, 20, 1) lies on line \ell_{11}
                                                                     446: P_{105540} = (3, 48, 24, 1) lies on line \ell_{11}
393: P_{86482} = (17, 6, 20, 1) lies on line \ell_{10}
                                                                     447: P_{105732} = (3, 51, 24, 1) lies on line \ell_{13}
394: P_{86630} = (37, 8, 20, 1) lies on line \ell_3
                                                                     448: P_{105803} = (10, 52, 24, 1) lies on line \ell_7
395: P_{87016} = (39, 14, 20, 1) lies on line \ell_{14}
                                                                     449: P_{106245} = (4, 59, 24, 1) lies on line \ell_{10}
396: P_{87087} = (46, 15, 20, 1) lies on line \ell_4
                                                                     450: P_{106443} = (10, 62, 24, 1) lies on line \ell_8
397: P_{87570} = (17, 23, 20, 1) lies on line \ell_9
                                                                     451: P_{106501} = (4, 63, 24, 1) lies on line \ell_9
398: P_{88239} = (46, 33, 20, 1) lies on line \ell_5
                                                                     452 : P_{106792} = (39, 3, 25, 1) lies on line \ell_{13}
399: P_{88744} = (39, 41, 20, 1) lies on line \ell_{12}
                                                                     453: P_{107110} = (37, 8, 25, 1) lies on line \ell_3
400: P_{88998} = (37, 45, 20, 1) lies on line \ell_6
                                                                     454: P_{107567} = (46, 15, 25, 1) lies on line \ell_4
                                                                     455 : P_{108330} = (41, 27, 25, 1) lies on line \ell_{14}
401: P_{89419} = (10, 52, 20, 1) lies on line \ell_7
402: P_{89528} = (55, 53, 20, 1) lies on line \ell_{13}
                                                                     456 : P_{108719} = (46, 33, 25, 1) lies on line \ell_5
403: P_{90059} = (10, 62, 20, 1) lies on line \ell_8
                                                                     457: P_{108904} = (39, 36, 25, 1) lies on line \ell_{11}
404: P_{90516} = (19, 5, 21, 1) lies on line \ell_{13}
                                                                     458: P_{109478} = (37, 45, 25, 1) lies on line \ell_6
405: P_{90726} = (37, 8, 21, 1) lies on line \ell_3
                                                                     459: P_{109802} = (41, 50, 25, 1) lies on line \ell_{12}
406: P_{90907} = (26, 11, 21, 1) lies on line \ell_{10}
                                                                     460: P_{109899} = (10, 52, 25, 1) lies on line \ell_7
407: P_{91183} = (46, 15, 21, 1) lies on line \ell_4
                                                                     461: P_{110032} = (15, 54, 25, 1) lies on line \ell_{10}
                                                                     462: P_{110224} = (15, 57, 25, 1) lies on line \ell_9
408: P_{91291} = (26, 17, 21, 1) lies on line \ell_9
409: P_{91604} = (19, 22, 21, 1) lies on line \ell_{11}
                                                                     463: P_{110539} = (10, 62, 25, 1) lies on line \ell_8
410: P_{92335} = (46, 33, 21, 1) lies on line \ell_5
                                                                     464: P_{111206} = (37, 8, 26, 1) lies on line \ell_3
411: P_{93094} = (37, 45, 21, 1) lies on line \ell_6
                                                                     465: P_{111663} = (46, 15, 26, 1) lies on line \ell_4
412: P_{93321} = (8, 49, 21, 1) lies on line \ell_{12}
                                                                     466: P_{112235} = (42, 24, 26, 1) lies on line \ell_{11}
413: P_{93515} = (10, 52, 21, 1) lies on line \ell_7
                                                                     467: P_{112378} = (57, 26, 26, 1) lies on line \ell_{12}
414: P_{93833} = (8, 57, 21, 1) lies on line \ell_{14}
                                                                     468: P_{112787} = (18, 33, 26, 1) lies on line \ell_{10}
415: P_{94155} = (10, 62, 21, 1) lies on line \ell_8
                                                                     469: P_{112815} = (46, 33, 26, 1) lies on line \ell_5
416: P_{94361} = (24, 1, 22, 1) lies on line \ell_{14}
                                                                     470: P_{112954} = (57, 35, 26, 1) lies on line \ell_{14}
417 : P_{94822} = (37, 8, 22, 1) lies on line \ell_3
                                                                     471 : P_{113574} = (37, 45, 26, 1) lies on line \ell_6
418: P_{95279} = (46, 15, 22, 1) lies on line \ell_4
                                                                     472: P_{113899} = (42, 50, 26, 1) lies on line \ell_{13}
419: P_{95897} = (24, 25, 22, 1) lies on line \ell_{12}
                                                                     473: P_{113939} = (18, 51, 26, 1) lies on line \ell_9
420: P_{96008} = (7, 27, 22, 1) lies on line \ell_9
                                                                     474: P_{113995} = (10, 52, 26, 1) lies on line \ell_7
421: P_{96072} = (7, 28, 22, 1) lies on line \ell_{10}
                                                                     475: P_{114635} = (10, 62, 26, 1) lies on line \ell_8
422: P_{96431} = (46, 33, 22, 1) lies on line \ell_5
                                                                     476: P_{114895} = (14, 2, 27, 1) lies on line \ell_{13}
423: P_{96991} = (30, 42, 22, 1) lies on line \ell_{11}
                                                                     477: P_{114903} = (22, 2, 27, 1) lies on line \ell_{12}
424: P_{97190} = (37, 45, 22, 1) lies on line \ell_6
                                                                     478: P_{115302} = (37, 8, 27, 1) lies on line \ell_3
425: P_{97611} = (10, 52, 22, 1) lies on line \ell_7
                                                                     479: P_{115535} = (14, 12, 27, 1) lies on line \ell_{11}
426 : P_{97631} = (30, 52, 22, 1) lies on line \ell_{13}
                                                                     480 : P_{115759} = (46, 15, 27, 1) lies on line \ell_4
427: P_{98251} = (10, 62, 22, 1) lies on line \ell_8
                                                                     481: P_{116055} = (22, 20, 27, 1) lies on line \ell_{14}
428: P_{98488} = (55, 1, 23, 1) lies on line \ell_{12}
                                                                     482: P_{116911} = (46, 33, 27, 1) lies on line \ell_5
429: P_{98683} = (58, 4, 23, 1) lies on line \ell_{13}
                                                                     483: P_{117594} = (25, 44, 27, 1) lies on line \ell_{10}
430: P_{98918} = (37, 8, 23, 1) lies on line \ell_3
                                                                     484: P_{117670} = (37, 45, 27, 1) lies on line \ell_6
                                                                     485 : P_{118091} = (10, 52, 27, 1) lies on line \ell_7
431: P_{99375} = (46, 15, 23, 1) lies on line \ell_4
432: P_{99469} = (12, 17, 23, 1) lies on line \ell_{10}
                                                                     486: P_{118170} = (25, 53, 27, 1) lies on line \ell_9
433: P_{100237} = (12, 29, 23, 1) lies on line \ell_9
                                                                     487: P_{118731} = (10, 62, 27, 1) lies on line \ell_8
434 : P_{100527} = (46, 33, 23, 1) lies on line \ell_5
                                                                     488: P_{118961} = (48, 1, 28, 1) lies on line \ell_{11}
435: P_{101286} = (37, 45, 23, 1) lies on line \ell_6
                                                                     489: P_{119398} = (37, 8, 28, 1) lies on line \ell_3
436: P_{101707} = (10, 52, 23, 1) lies on line \ell_7
                                                                     490: P_{119849} = (40, 15, 28, 1) lies on line \ell_{10}
437: P_{101880} = (55, 54, 23, 1) lies on line \ell_{14}
                                                                     491: P_{119855} = (46, 15, 28, 1) lies on line \ell_4
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492 : P_{121007} = (46, 33, 28, 1) lies on line \ell_5
                                                                     546: P_{139040} = (31, 59, 32, 1) lies on line \ell_{14}
493: P_{121385} = (40, 39, 28, 1) lies on line \ell_9
                                                                     547: P_{139211} = (10, 62, 32, 1) lies on line \ell_8
                                                                     548: P_{139878} = (37, 8, 33, 1) lies on line \ell_3
494: P_{121626} = (25, 43, 28, 1) lies on line \ell_{12}
495: P_{121766} = (37, 45, 28, 1) lies on line \ell_6
                                                                     549: P_{139908} = (3, 9, 33, 1) lies on line \ell_{10}
496: P_{122033} = (48, 49, 28, 1) lies on line \ell_{13}
                                                                     550: P_{139972} = (3, 10, 33, 1) lies on line \ell_9
497: P_{122074} = (25, 50, 28, 1) lies on line \ell_{14}
                                                                     551: P_{140145} = (48, 12, 33, 1) lies on line \ell_{14}
                                                                     552: P_{140335} = (46, 15, 33, 1) lies on line \ell_4
498: P_{122187} = (10, 52, 28, 1) lies on line \ell_7
499: P_{122827} = (10, 62, 28, 1) lies on line \ell_8
                                                                     553: P_{141363} = (50, 31, 33, 1) lies on line \ell_{13}
500: P_{123029} = (20, 1, 29, 1) lies on line \ell_{13}
                                                                     554: P_{141487} = (46, 33, 33, 1) lies on line \ell_5
501: P_{123108} = (35, 2, 29, 1) lies on line \ell_{10}
                                                                     555: P_{142246} = (37, 45, 33, 1) lies on line \ell_6
502: P_{123319} = (54, 5, 29, 1) lies on line \ell_{14}
                                                                     556: P_{142259} = (50, 45, 33, 1) lies on line \ell_{11}
503: P_{123494} = (37, 8, 29, 1) lies on line \ell_3
                                                                     557: P_{142667} = (10, 52, 33, 1) lies on line \ell_7
504: P_{123951} = (46, 15, 29, 1) lies on line \ell_4
                                                                     558: P_{143217} = (48, 60, 33, 1) lies on line \ell_{12}
                                                                     559: P_{143307} = (10, 62, 33, 1) lies on line \ell_8
505: P_{124309} = (20, 21, 29, 1) lies on line \ell_{11}
506: P_{125092} = (35, 33, 29, 1) lies on line \ell_9
                                                                     560: P_{143455} = (30, 0, 34, 1) lies on line \ell_9
507: P_{125103} = (46, 33, 29, 1) lies on line \ell_5
                                                                     561: P_{143974} = (37, 8, 34, 1) lies on line \ell_3
508: P_{125862} = (37, 45, 29, 1) lies on line \ell_6
                                                                     562: P_{144431} = (46, 15, 34, 1) lies on line \ell_4
509: P_{126263} = (54, 51, 29, 1) lies on line \ell_{12}
                                                                     563: P_{144576} = (63, 17, 34, 1) lies on line \ell_{11}
510: P_{126283} = (10, 52, 29, 1) lies on line \ell_7
                                                                     564: P_{144737} = (32, 20, 34, 1) lies on line \ell_{12}
                                                                     565: P_{145375} = (30, 30, 34, 1) lies on line \ell_{10}
511: P_{126923} = (10, 62, 29, 1) lies on line \ell_8
                                                                     566 : P_{145583} = (46, 33, 34, 1) lies on line \ell_5
512: P_{127590} = (37, 8, 30, 1) lies on line \ell_3
513: P_{128047} = (46, 15, 30, 1) lies on line \ell_4
                                                                     567: P_{146342} = (37, 45, 34, 1) lies on line \ell_6
514: P_{128447} = (62, 21, 30, 1) lies on line \ell_{10}
                                                                     568: P_{146432} = (63, 46, 34, 1) lies on line \ell_{13}
                                                                     569: P_{146763} = (10, 52, 34, 1) lies on line \ell_7
515: P_{128807} = (38, 27, 30, 1) lies on line \ell_{12}
516: P_{129199} = (46, 33, 30, 1) lies on line \ell_5
                                                                     570: P_{146785} = (32, 52, 34, 1) lies on line \ell_{14}
517: P_{129690} = (25, 41, 30, 1) lies on line \ell_{11}
                                                                     571: P_{147403} = (10, 62, 34, 1) lies on line \ell_8
518: P_{129855} = (62, 43, 30, 1) lies on line \ell_9
                                                                     572: P_{147728} = (15, 3, 35, 1) lies on line \ell_{14}
519: P_{129958} = (37, 45, 30, 1) lies on line \ell_6
                                                                     573: P_{147868} = (27, 5, 35, 1) lies on line \ell_{11}
520: P_{130138} = (25, 48, 30, 1) lies on line \ell_{13}
                                                                     574: P_{147926} = (21, 6, 35, 1) lies on line \ell_9
521: P_{130379} = (10, 52, 30, 1) lies on line \ell_7
                                                                     575: P_{148070} = (37, 8, 35, 1) lies on line \ell_3
522: P_{130983} = (38, 61, 30, 1) lies on line \ell_{14}
                                                                     576: P_{148304} = (15, 12, 35, 1) lies on line \ell_{12}
523: P_{131019} = (10, 62, 30, 1) lies on line \ell_8
                                                                     577: P_{148527} = (46, 15, 35, 1) lies on line \ell_4
524: P_{131198} = (61, 0, 31, 1) lies on line \ell_{13}
                                                                     578: P_{148758} = (21, 19, 35, 1) lies on line \ell_{10}
525 : P_{131338} = (9, 3, 31, 1) lies on line \ell_{12}
                                                                     579 : P_{149468} = (27, 30, 35, 1) lies on line \ell_{13}
526: P_{131686} = (37, 8, 31, 1) lies on line \ell_3
                                                                     580: P_{149679} = (46, 33, 35, 1) lies on line \ell_5
527 : P_{131786} = (9, 10, 31, 1) lies on line \ell_{14}
                                                                     581: P_{150438} = (37, 45, 35, 1) lies on line \ell_6
528: P_{132143} = (46, 15, 31, 1) lies on line \ell_4
                                                                     582: P_{150859} = (10, 52, 35, 1) lies on line \ell_7
529: P_{132726} = (53, 24, 31, 1) lies on line \ell_{10}
                                                                     583: P_{151499} = (10, 62, 35, 1) lies on line \ell_8
                                                                     584: P_{152623} = (46, 15, 36, 1) lies on line \ell_4
530: P_{133295} = (46, 33, 31, 1) lies on line \ell_5
                                                                     585: P_{152933} = (36, 20, 36, 1) lies on line \ell_9
531: P_{134054} = (37, 45, 31, 1) lies on line \ell_6
532 : P_{134070} = (53, 45, 31, 1) lies on line \ell_9
                                                                     586: P_{153775} = (46, 33, 36, 1) lies on line \ell_5
533: P_{134475} = (10, 52, 31, 1) lies on line \ell_7
                                                                     587: P_{154725} = (36, 48, 36, 1) lies on line \ell_{10}
534 : P_{135102} = (61, 61, 31, 1) lies on line \ell_{11}
                                                                     588: P_{154955} = (10, 52, 36, 1) lies on line \ell_7
535: P_{135115} = (10, 62, 31, 1) lies on line \ell_8
                                                                     589: P_{155595} = (10, 62, 36, 1) lies on line \ell_8
536: P_{135497} = (8, 4, 32, 1) lies on line \ell_{10}
                                                                     590: P_{156262} = (37, 8, 37, 1) lies on line \ell_3
537: P_{135782} = (37, 8, 32, 1) lies on line \ell_3
                                                                     591: P_{156719} = (46, 15, 37, 1) lies on line \ell_4
538: P_{136009} = (8, 12, 32, 1) lies on line \ell_9
                                                                     592: P_{157506} = (1, 28, 37, 1) lies on line \ell_{11}
539: P_{136239} = (46, 15, 32, 1) lies on line \ell_4
                                                                     593: P_{157570} = (1, 29, 37, 1) lies on line \ell_{13}
540: P_{137391} = (46, 33, 32, 1) lies on line \ell_5
                                                                     594: P_{157871} = (46, 33, 37, 1) lies on line \ell_5
541: P_{137568} = (31, 36, 32, 1) lies on line \ell_{12}
                                                                     595: P_{158630} = (37, 45, 37, 1) lies on line \ell_6
542: P_{138150} = (37, 45, 32, 1) lies on line \ell_6
                                                                     596: P_{159051} = (10, 52, 37, 1) lies on line \ell_7
543: P_{138263} = (22, 47, 32, 1) lies on line \ell_{13}
                                                                     597: P_{159691} = (10, 62, 37, 1) lies on line \ell_8
544: P_{138571} = (10, 52, 32, 1) lies on line \ell_7
                                                                     598: P_{160358} = (37, 8, 38, 1) lies on line \ell_3
545: P_{138903} = (22, 57, 32, 1) lies on line \ell_{11}
                                                                     599: P_{160815} = (46, 15, 38, 1) lies on line \ell_4
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654 : P_{179110} = (37, 45, 42, 1) lies on line \ell_6
600: P_{161216} = (63, 21, 38, 1) lies on line \ell_{12}
601: P_{161395} = (50, 24, 38, 1) lies on line \ell_9
                                                                     655: P_{179304} = (39, 48, 42, 1) lies on line \ell_9
                                                                     656: P_{179531} = (10, 52, 42, 1) lies on line \ell_7
602: P_{161869} = (12, 32, 38, 1) lies on line \ell_{11}
603: P_{161967} = (46, 33, 38, 1) lies on line \ell_5
                                                                     657: P_{180171} = (10, 62, 42, 1) lies on line \ell_8
                                                                     658: P_{180701} = (28, 6, 43, 1) lies on line \ell_{11}
604: P_{162547} = (50, 42, 38, 1) lies on line \ell_{10}
605: P_{162560} = (63, 42, 38, 1) lies on line \ell_{14}
                                                                     659: P_{180838} = (37, 8, 43, 1) lies on line \ell_3
606: P_{162637} = (12, 44, 38, 1) lies on line \ell_{13}
                                                                     660: P_{181234} = (49, 14, 43, 1) lies on line \ell_{12}
607: P_{162726} = (37, 45, 38, 1) lies on line \ell_6
                                                                     661: P_{181295} = (46, 15, 43, 1) lies on line \ell_4
608: P_{163147} = (10, 52, 38, 1) lies on line \ell_7
                                                                     662: P_{181981} = (28, 26, 43, 1) lies on line \ell_{13}
609: P_{163787} = (10, 62, 38, 1) lies on line \ell_8
                                                                     663: P_{181997} = (44, 26, 43, 1) lies on line \ell_{10}
610: P_{164454} = (37, 8, 39, 1) lies on line \ell_3
                                                                     664: P_{182447} = (46, 33, 43, 1) lies on line \ell_5
611: P_{164753} = (16, 13, 39, 1) lies on line \ell_{12}
                                                                     665: P_{183206} = (37, 45, 43, 1) lies on line \ell_6
612: P_{164911} = (46, 15, 39, 1) lies on line \ell_4
                                                                     666: P_{183627} = (10, 52, 43, 1) lies on line \ell_7
613: P_{165737} = (40, 28, 39, 1) lies on line \ell_{13}
                                                                     667: P_{183789} = (44, 54, 43, 1) lies on line \ell_9
614: P_{165777} = (16, 29, 39, 1) lies on line \ell_{14}
                                                                     668: P_{184267} = (10, 62, 43, 1) lies on line \ell_8
615: P_{165882} = (57, 30, 39, 1) lies on line \ell_9
                                                                     669: P_{184370} = (49, 63, 43, 1) lies on line \ell_{14}
616: P_{166063} = (46, 33, 39, 1) lies on line \ell_5
                                                                     670: P_{184934} = (37, 8, 44, 1) lies on line \ell_3
617: P_{166458} = (57, 39, 39, 1) lies on line \ell_{10}
                                                                     671: P_{185123} = (34, 11, 44, 1) lies on line \ell_{11}
                                                                     672: P_{185391} = (46, 15, 44, 1) lies on line \ell_4
618: P_{166822} = (37, 45, 39, 1) lies on line \ell_6
                                                                     673: P_{186047} = (62, 25, 44, 1) lies on line \ell_{14}
619: P_{167243} = (10, 52, 39, 1) lies on line \ell_7
620: P_{167273} = (40, 52, 39, 1) lies on line \ell_{11}
                                                                     674: P_{186543} = (46, 33, 44, 1) lies on line \ell_5
621: P_{167883} = (10, 62, 39, 1) lies on line \ell_8
                                                                     675: P_{186718} = (29, 36, 44, 1) lies on line \ell_9
                                                                     676: P_{186943} = (62, 39, 44, 1) lies on line \ell_{12}
622: P_{168482} = (33, 7, 40, 1) lies on line \ell_{14}
623 : P_{168550} = (37, 8, 40, 1) lies on line \ell_3
                                                                     677: P_{187043} = (34, 41, 44, 1) lies on line \ell_{13}
624: P_{168882} = (49, 13, 40, 1) lies on line \ell_{10}
                                                                     678: P_{187302} = (37, 45, 44, 1) lies on line \ell_6
625: P_{169007} = (46, 15, 40, 1) lies on line \ell_4
                                                                     679: P_{187723} = (10, 52, 44, 1) lies on line \ell_7
626: P_{170159} = (46, 33, 40, 1) lies on line \ell_5
                                                                     680: P_{188062} = (29, 57, 44, 1) lies on line \ell_{10}
627: P_{170466} = (33, 38, 40, 1) lies on line \ell_{12}
                                                                     681: P_{188363} = (10, 62, 44, 1) lies on line \ell_8
628: P_{170770} = (17, 43, 40, 1) lies on line \ell_{13}
                                                                     682: P_{189030} = (37, 8, 45, 1) lies on line \ell_3
629: P_{170918} = (37, 45, 40, 1) lies on line \ell_6
                                                                     683: P_{189487} = (46, 15, 45, 1) lies on line \ell_4
630: P_{171339} = (10, 52, 40, 1) lies on line \ell_7
                                                                     684: P_{190087} = (6, 25, 45, 1) lies on line \ell_{13}
631: P_{171730} = (17, 58, 40, 1) lies on line \ell_{11}
                                                                     685: P_{190471} = (6, 31, 45, 1) lies on line \ell_{11}
632: P_{171890} = (49, 60, 40, 1) lies on line \ell_9
                                                                     686: P_{190639} = (46, 33, 45, 1) lies on line \ell_5
633: P_{171979} = (10, 62, 40, 1) lies on line \ell_8
                                                                     687: P_{190679} = (22, 34, 45, 1) lies on line \ell_9
634 : P_{172155} = (58, 0, 41, 1) lies on line \ell_{10}
                                                                     688: P_{191398} = (37, 45, 45, 1) lies on line \ell_6
635 : P_{172646} = (37, 8, 41, 1) lies on line \ell_3
                                                                     689: P_{191442} = (17, 46, 45, 1) lies on line \ell_{14}
636: P_{173103} = (46, 15, 41, 1) lies on line \ell_4
                                                                     690: P_{191819} = (10, 52, 45, 1) lies on line \ell_7
637: P_{173878} = (53, 27, 41, 1) lies on line \ell_{13}
                                                                     691: P_{191831} = (22, 52, 45, 1) lies on line \ell_{10}
                                                                     692 : P_{192459} = (10, 62, 45, 1) lies on line \ell_8
638: P_{174255} = (46, 33, 41, 1) lies on line \ell_5
639: P_{175014} = (37, 45, 41, 1) lies on line \ell_6
                                                                     693: P_{192530} = (17, 63, 45, 1) lies on line \ell_{12}
                                                                     694: P_{193126} = (37, 8, 46, 1) lies on line \ell_3
640: P_{175094} = (53, 46, 41, 1) lies on line \ell_{11}
641: P_{175183} = (14, 48, 41, 1) lies on line \ell_{14}
                                                                     695: P_{193583} = (46, 15, 46, 1) lies on line \ell_4
642 : P_{175435} = (10, 52, 41, 1) lies on line \ell_7
                                                                     696: P_{193986} = (1, 22, 46, 1) lies on line \ell_{14}
643: P_{175867} = (58, 58, 41, 1) lies on line \ell_9
                                                                     697: P_{194050} = (1, 23, 46, 1) lies on line \ell_{12}
644: P_{176075} = (10, 62, 41, 1) lies on line \ell_8
                                                                     698: P_{194735} = (46, 33, 46, 1) lies on line \ell_5
645: P_{176079} = (14, 62, 41, 1) lies on line \ell_{12}
                                                                     699: P_{195494} = (37, 45, 46, 1) lies on line \ell_6
646: P_{176735} = (30, 8, 42, 1) lies on line \ell_{14}
                                                                     700: P_{195915} = (10, 52, 46, 1) lies on line \ell_7
647: P_{176742} = (37, 8, 42, 1) lies on line \ell_3
                                                                     701: P_{196555} = (10, 62, 46, 1) lies on line \ell_8
648: P_{177199} = (46, 15, 42, 1) lies on line \ell_4
                                                                     702: P_{197222} = (37, 8, 47, 1) lies on line \ell_3
                                                                     703: P_{198256} = (47, 24, 47, 1) lies on line \ell_{13}
649: P_{177401} = (56, 18, 42, 1) lies on line \ell_{11}
650: P_{177631} = (30, 22, 42, 1) lies on line \ell_{12}
                                                                     704: P_{199590} = (37, 45, 47, 1) lies on line \ell_6
651: P_{177704} = (39, 23, 42, 1) lies on line \ell_{10}
                                                                     705: P_{200011} = (10, 52, 47, 1) lies on line \ell_7
652 : P_{178351} = (46, 33, 42, 1) lies on line \ell_5
                                                                     706: P_{200240} = (47, 55, 47, 1) lies on line \ell_{11}
653: P_{178937} = (56, 42, 42, 1) lies on line \ell_{13}
                                                                     707: P_{200651} = (10, 62, 47, 1) lies on line \ell_8
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762 : P_{219384} = (55, 34, 52, 1) lies on line \ell_{10}
708: P_{201318} = (37, 8, 48, 1) lies on line \ell_3
                                                                     763: P_{219564} = (43, 37, 52, 1) lies on line \ell_{13}
709: P_{201628} = (27, 13, 48, 1) lies on line \ell_9
710: P_{201775} = (46, 15, 48, 1) lies on line \ell_4
                                                                     764: P_{220070} = (37, 45, 52, 1) lies on line \ell_6
711: P_{202204} = (27, 22, 48, 1) lies on line \ell_{10}
                                                                     765: P_{220491} = (10, 52, 52, 1) lies on line \ell_7
712: P_{202819} = (2, 32, 48, 1) lies on line \ell_{12}
                                                                     766: P_{221022} = (29, 60, 52, 1) lies on line \ell_{14}
713: P_{202927} = (46, 33, 48, 1) lies on line \ell_5
                                                                     767: P_{221131} = (10, 62, 52, 1) lies on line \ell_8
714: P_{202947} = (2, 34, 48, 1) lies on line \ell_{14}
                                                                     768: P_{221798} = (37, 8, 53, 1) lies on line \ell_3
715: P_{203289} = (24, 39, 48, 1) lies on line \ell_{13}
                                                                     769: P_{222003} = (50, 11, 53, 1) lies on line \ell_{14}
716: P_{203686} = (37, 45, 48, 1) lies on line \ell_6
                                                                     770: P_{222255} = (46, 15, 53, 1) lies on line \ell_4
717: P_{204107} = (10, 52, 48, 1) lies on line \ell_7
                                                                     771: P_{222525} = (60, 19, 53, 1) lies on line \ell_9
718: P_{204747} = (10, 62, 48, 1) lies on line \ell_8
                                                                     772: P_{222608} = (15, 21, 53, 1) lies on line \ell_{13}
719: P_{204825} = (24, 63, 48, 1) lies on line \ell_{11}
                                                                     773: P_{222928} = (15, 26, 53, 1) lies on line \ell_{11}
720: P_{205414} = (37, 8, 49, 1) lies on line \ell_3
                                                                     774: P_{223407} = (46, 33, 53, 1) lies on line \ell_5
721: P_{205585} = (16, 11, 49, 1) lies on line \ell_9
                                                                     775: P_{224166} = (37, 45, 53, 1) lies on line \ell_6
722 : P_{205871} = (46, 15, 49, 1) lies on line \ell_4
                                                                     776: P_{224317} = (60, 47, 53, 1) lies on line \ell_{10}
723: P_{206254} = (45, 21, 49, 1) lies on line \ell_{14}
                                                                     777: P_{224587} = (10, 52, 53, 1) lies on line \ell_7
724 : P_{206397} = (60, 23, 49, 1) lies on line \ell_{13}
                                                                     778: P_{224947} = (50, 57, 53, 1) lies on line \ell_{12}
725: P_{206609} = (16, 27, 49, 1) lies on line \ell_{10}
                                                                     779: P_{225227} = (10, 62, 53, 1) lies on line \ell_8
726: P_{207023} = (46, 33, 49, 1) lies on line \ell_5
                                                                     780: P_{225894} = (37, 8, 54, 1) lies on line \ell_3
                                                                     781 : P_{226351} = (46, 15, 54, 1) lies on line \ell_4
727: P_{207677} = (60, 43, 49, 1) lies on line \ell_{11}
728: P_{207782} = (37, 45, 49, 1) lies on line \ell_6
                                                                     782: P_{226467} = (34, 17, 54, 1) lies on line \ell_{12}
729: P_{208203} = (10, 52, 49, 1) lies on line \ell_7
                                                                     783 : P_{226978} = (33, 25, 54, 1) lies on line \ell_9
730: P_{208494} = (45, 56, 49, 1) lies on line \ell_{12}
                                                                     784: P_{227503} = (46, 33, 54, 1) lies on line \ell_5
731 : P_{208843} = (10, 62, 49, 1) lies on line \ell_8
                                                                     785: P_{227651} = (2, 36, 54, 1) lies on line \ell_{13}
732: P_{209038} = (13, 1, 50, 1) lies on line \ell_9
                                                                     786: P_{227779} = (2, 38, 54, 1) lies on line \ell_{11}
733: P_{209510} = (37, 8, 50, 1) lies on line \ell_3
                                                                     787: P_{228262} = (37, 45, 54, 1) lies on line \ell_6
734: P_{209742} = (13, 12, 50, 1) lies on line \ell_{10}
                                                                     788: P_{228643} = (34, 51, 54, 1) lies on line \ell_{14}
735: P_{209967} = (46, 15, 50, 1) lies on line \ell_4
                                                                     789: P_{228683} = (10, 52, 54, 1) lies on line \ell_7
736: P_{210046} = (61, 16, 50, 1) lies on line \ell_{12}
                                                                     790: P_{228962} = (33, 56, 54, 1) lies on line \ell_{10}
737: P_{210482} = (49, 23, 50, 1) lies on line \ell_{11}
                                                                     791: P_{229323} = (10, 62, 54, 1) lies on line \ell_8
738: P_{211119} = (46, 33, 50, 1) lies on line \ell_5
                                                                     792: P_{229710} = (13, 4, 55, 1) lies on line \ell_{14}
739 : P_{211442} = (49, 38, 50, 1) lies on line \ell_{13}
                                                                     793: P_{229990} = (37, 8, 55, 1) lies on line \ell_3
740: P_{211878} = (37, 45, 50, 1) lies on line \ell_6
                                                                     794: P_{230030} = (13, 9, 55, 1) lies on line \ell_{12}
741: P_{211902} = (61, 45, 50, 1) lies on line \ell_{14}
                                                                     795: P_{230447} = (46, 15, 55, 1) lies on line \ell_4
742: P_{212299} = (10, 52, 50, 1) lies on line \ell_7
                                                                     796: P_{230759} = (38, 20, 55, 1) lies on line \ell_{13}
743 : P_{212939} = (10, 62, 50, 1) lies on line \ell_8
                                                                     797: P_{231467} = (42, 31, 55, 1) lies on line \ell_9
744: P_{213127} = (6, 1, 51, 1) lies on line \ell_{10}
                                                                     798: P_{231599} = (46, 33, 55, 1) lies on line \ell_5
745: P_{213270} = (21, 3, 51, 1) lies on line \ell_{11}
                                                                     799: P_{232358} = (37, 45, 55, 1) lies on line \ell_6
746: P_{213511} = (6, 7, 51, 1) lies on line \ell_9
                                                                     800: P_{232679} = (38, 50, 55, 1) lies on line \ell_{11}
                                                                     801: P_{232779} = (10, 52, 55, 1) lies on line \ell_7
747: P_{213587} = (18, 8, 51, 1) lies on line \ell_{12}
                                                                     802: P_{232875} = (42, 53, 55, 1) lies on line \ell_{10}
748: P_{213606} = (37, 8, 51, 1) lies on line \ell_3
749: P_{214063} = (46, 15, 51, 1) lies on line \ell_4
                                                                     803: P_{233419} = (10, 62, 55, 1) lies on line \ell_8
                                                                     804 : P_{234086} = (37, 8, 56, 1) lies on line \ell_3
750: P_{214486} = (21, 22, 51, 1) lies on line \ell_{13}
751: P_{214739} = (18, 26, 51, 1) lies on line \ell_{14}
                                                                     805: P_{234543} = (46, 15, 56, 1) lies on line \ell_4
752: P_{215215} = (46, 33, 51, 1) lies on line \ell_5
                                                                     806: P_{235517} = (60, 30, 56, 1) lies on line \ell_{14}
753: P_{215974} = (37, 45, 51, 1) lies on line \ell_6
                                                                     807: P_{235555} = (34, 31, 56, 1) lies on line \ell_{10}
754: P_{216395} = (10, 52, 51, 1) lies on line \ell_7
                                                                     808: P_{235695} = (46, 33, 56, 1) lies on line \ell_5
755: P_{217035} = (10, 62, 51, 1) lies on line \ell_8
                                                                     809: P_{235773} = (60, 34, 56, 1) lies on line \ell_{12}
756: P_{217702} = (37, 8, 52, 1) lies on line \ell_3
                                                                     810: P_{235808} = (31, 35, 56, 1) lies on line \ell_{13}
757: P_{218092} = (43, 14, 52, 1) lies on line \ell_{11}
                                                                     811: P_{236454} = (37, 45, 56, 1) lies on line \ell_6
758: P_{218159} = (46, 15, 52, 1) lies on line \ell_4
                                                                     812: P_{236875} = (10, 52, 56, 1) lies on line \ell_7
759: P_{218552} = (55, 21, 52, 1) lies on line \ell_9
                                                                     813: P_{237408} = (31, 60, 56, 1) lies on line \ell_{11}
760 : P_{219294} = (29, 33, 52, 1) lies on line \ell_{12}
                                                                     814: P_{237475} = (34, 61, 56, 1) lies on line \ell_9
761: P_{219311} = (46, 33, 52, 1) lies on line \ell_5
                                                                     815: P_{237515} = (10, 62, 56, 1) lies on line \ell_8
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859 : P_{252303} = (14, 37, 60, 1) lies on line \ell_9
816: P_{238182} = (37, 8, 57, 1) lies on line \ell_3
817: P_{238639} = (46, 15, 57, 1) lies on line \ell_4
                                                                     860: P_{252687} = (14, 43, 60, 1) lies on line \ell_{10}
818: P_{238826} = (41, 18, 57, 1) lies on line \ell_{10}
                                                                     861: P_{252838} = (37, 45, 60, 1) lies on line \ell_6
819: P_{238908} = (59, 19, 57, 1) lies on line \ell_{13}
                                                                     862: P_{253259} = (10, 52, 60, 1) lies on line \ell_7
                                                                     863: P_{253899} = (10, 62, 60, 1) lies on line \ell_8
820: P_{239791} = (46, 33, 57, 1) lies on line \ell_5
821: P_{240252} = (59, 40, 57, 1) lies on line \ell_{11}
                                                                     864: P_{254566} = (37, 8, 61, 1) lies on line \ell_3
822 : P_{240276} = (19, 41, 57, 1) lies on line \ell_{14}
                                                                     865: P_{255023} = (46, 15, 61, 1) lies on line \ell_4
823: P_{240550} = (37, 45, 57, 1) lies on line \ell_6
                                                                     866: P_{255113} = (8, 17, 61, 1) lies on line \ell_{13}
824: P_{240971} = (10, 52, 57, 1) lies on line \ell_7
                                                                     867: P_{255625} = (8, 25, 61, 1) lies on line \ell_{11}
825: P_{241364} = (19, 58, 57, 1) lies on line \ell_{12}
                                                                     868: P_{256175} = (46, 33, 61, 1) lies on line \ell_5
826: P_{241450} = (41, 59, 57, 1) lies on line \ell_9
                                                                     869: P_{256262} = (5, 35, 61, 1) lies on line \ell_9
827: P_{241611} = (10, 62, 57, 1) lies on line \ell_8
                                                                     870: P_{256454} = (5, 38, 61, 1) lies on line \ell_{10}
828: P_{242101} = (52, 5, 58, 1) lies on line \ell_{10}
                                                                     871: P_{256934} = (37, 45, 61, 1) lies on line \ell_6
829: P_{242278} = (37, 8, 58, 1) lies on line \ell_3
                                                                     872: P_{257355} = (10, 52, 61, 1) lies on line \ell_7
830: P_{242735} = (46, 15, 58, 1) lies on line \ell_4
                                                                     873: P_{257549} = (12, 55, 61, 1) lies on line \ell_{14}
831: P_{242820} = (3, 17, 58, 1) lies on line \ell_{14}
                                                                     874: P_{257805} = (12, 59, 61, 1) lies on line \ell_{12}
832: P_{242884} = (3, 18, 58, 1) lies on line \ell_{12}
                                                                     875: P_{257995} = (10, 62, 61, 1) lies on line \ell_8
833: P_{243063} = (54, 20, 58, 1) lies on line \ell_{11}
                                                                     876: P_{258662} = (37, 8, 62, 1) lies on line \ell_3
834: P_{243887} = (46, 33, 58, 1) lies on line \ell_5
                                                                     877: P_{259101} = (28, 15, 62, 1) lies on line \ell_{14}
835: P_{243959} = (54, 34, 58, 1) lies on line \ell_{13}
                                                                     878: P_{259119} = (46, 15, 62, 1) lies on line \ell_4
836: P_{244646} = (37, 45, 58, 1) lies on line \ell_6
                                                                     879: P_{259357} = (28, 19, 62, 1) lies on line \ell_{12}
837: P_{244917} = (52, 49, 58, 1) lies on line \ell_9
                                                                     880: P_{260166} = (5, 32, 62, 1) lies on line \ell_{13}
838: P_{245067} = (10, 52, 58, 1) lies on line \ell_7
                                                                     881: P_{260271} = (46, 33, 62, 1) lies on line \ell_5
                                                                     882 : P_{260486} = (5, 37, 62, 1) lies on line \ell_{11}
839: P_{245707} = (10, 62, 58, 1) lies on line \ell_8
840: P_{245843} = (18, 0, 59, 1) lies on line \ell_{11}
                                                                     883: P_{260761} = (24, 41, 62, 1) lies on line \ell_9
841 : P_{246374} = (37, 8, 59, 1) lies on line \ell_3
                                                                     884 : P_{261030} = (37, 45, 62, 1) lies on line \ell_6
842: P_{246400} = (63, 8, 59, 1) lies on line \ell_{10}
                                                                     885: P_{261273} = (24, 49, 62, 1) lies on line \ell_{10}
843 : P_{246509} = (44, 10, 59, 1) lies on line \ell_{12}
                                                                     886: P_{261451} = (10, 52, 62, 1) lies on line \ell_7
                                                                     887: P_{262091} = (10, 62, 62, 1) lies on line \ell_8
844: P_{246831} = (46, 15, 59, 1) lies on line \ell_4
845: P_{246995} = (18, 18, 59, 1) lies on line \ell_{13}
                                                                     888: P_{262758} = (37, 8, 63, 1) lies on line \ell_3
846: P_{247983} = (46, 33, 59, 1) lies on line \ell_5
                                                                     889: P_{262964} = (51, 11, 63, 1) lies on line \ell_{12}
847: P_{248301} = (44, 38, 59, 1) lies on line \ell_{14}
                                                                     890: P_{263215} = (46, 15, 63, 1) lies on line \ell_4
848: P_{248742} = (37, 45, 59, 1) lies on line \ell_6
                                                                     891: P_{263266} = (33, 16, 63, 1) lies on line \ell_{13}
849: P_{249163} = (10, 52, 59, 1) lies on line \ell_7
                                                                     892: P_{264367} = (46, 33, 63, 1) lies on line \ell_5
850: P_{249408} = (63, 55, 59, 1) lies on line \ell_9
                                                                     893: P_{265126} = (37, 45, 63, 1) lies on line \ell_6
851 : P_{249803} = (10, 62, 59, 1) lies on line \ell_8
                                                                     894: P_{265236} = (19, 47, 63, 1) lies on line \ell_9
852: P_{249956} = (35, 0, 60, 1) lies on line \ell_{14}
                                                                     895: P_{265378} = (33, 49, 63, 1) lies on line \ell_{11}
853: P_{250470} = (37, 8, 60, 1) lies on line \ell_3
                                                                     896: P_{265547} = (10, 52, 63, 1) lies on line \ell_7
                                                                     897 : P_{265844} = (51, 56, 63, 1) lies on line \ell_{14}
854: P_{250797} = (44, 13, 60, 1) lies on line \ell_{11}
                                                                     898 : P_{266068} = (19, 60, 63, 1) lies on line \ell_{10}
855: P_{250927} = (46, 15, 60, 1) lies on line \ell_4
856: P_{252077} = (44, 33, 60, 1) lies on line \ell_{13}
                                                                     899: P_{266187} = (10, 62, 63, 1) lies on line \ell_8
857: P_{252079} = (46, 33, 60, 1) lies on line \ell_5
858: P_{252196} = (35, 35, 60, 1) lies on line \ell_{12}
```

The single points on the surface are:

#### Points on surface but on no line

The surface has 3482 points not on any line: Too many to print.

## Line Intersection Graph

	0 1	2	3	4	5	6	7	8	9	10	11	12	13	14
0	01	1	0	0	0	0	1	1	0	0	1	0	1	0
1	10	1	1	0	0	1	0	0	0	0	0	1	0	1
2	11	0	0	1	1	0	0	0	1	1	0	0	0	0
3	0 1	0	0	1	1	1	1	1	1	0	1	0	0	0
4	00	1	1	0	1	1	1	1	0	0	0	1	1	0
5	00	1	1	1	0	1	1	1	0	0	1	0	0	1
6	0.1	0	1	1	1	0	1	1	0	1	0	0	1	0
7	10	0	1	1	1	1	0	1	1	0	0	1	0	0
8	10	0	1	1	1	1	1	0	0	1	0	0	0	1
9	00	1	1	0	0	0	1	0	0	1	0	0	1	1
10	00	1	0	0	0	1	0	1	1	0	1	1	0	0
11	10	0	1	0	1	0	0	0	0	1	0	1	1	0
12	0 1	0	0	1	0	0	1	0	0	1	1	0	0	1
13	10	0	0	1	0	1	0	0	1	0	1	0	0	1
14	0.1	0	0	0	1	0	0	1	1	0	0	1	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	$\ell_1$	$\ell_2$	$\ell_7$	$\ell_8$	$\ell_{11}$	$\ell_{13}$
in point	$P_1$	$P_1$	$P_{7500}$	$P_{8140}$	$P_{7564}$	$P_{8204}$

Line 1 intersects

Line	$\ell_0$	$\ell_2$	$\ell_3$	$\ell_6$	$\ell_{12}$	$\ell_{14}$
in point	$P_1$	$P_1$	$P_{4711}$	$P_{7079}$	$P_{7015}$	$P_{4775}$

Line 2 intersects

Line	$\ell_0$	$\ell_1$	$\ell_4$	$\ell_5$	$\ell_9$	$\ell_{10}$
in point	$P_1$	$P_1$	$P_{5168}$	$P_{6320}$	$P_{5104}$	$P_{6256}$

Line 3 intersects

Line	$\ell_1$	$\ell_4$	$\ell_5$	$\ell_6$	$\ell_7$	$\ell_8$	$\ell_9$	$\ell_{11}$
in point	$P_{4711}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{8806}$	$P_{152166}$

Line 4 intersects

т.	0	0	0	0	0	0	0	0
Line	$\ell_2$	$\ell_3$	$\ell_5$	$\ell_6$	$\ell_7$	$\ell_8$	$\ell_{12}$	$\ell_{13}$
in point	$P_{5168}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{197679}$	$P_{9263}$

Line 5 intersects

Line	$\ell_2$	$\ell_3$	$\ell_4$	$\ell_6$	$\ell_7$	$\ell_8$	$\ell_{11}$	$\ell_{14}$
in point	$P_{6320}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{10415}$	$P_{198831}$

Line 6 intersects

Line	$\ell_1$	$\ell_3$	$\ell_4$	$\ell_5$	$\ell_7$	$\ell_8$	$\ell_{10}$	$\ell_{13}$
in point	$P_{7079}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{11174}$	$P_{154534}$

Line 7 intersects

Line	$\ell_0$	$\ell_3$	$\ell_4$	$\ell_5$	$\ell_6$	$\ell_8$	$\ell_9$	$\ell_{12}$
in point	$P_{7500}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{52555}$	$P_{11595}$

Line 8 intersects

Line	$\ell_0$	$\ell_3$	$\ell_4$	$\ell_5$	$\ell_6$	$\ell_7$	$\ell_{10}$	$\ell_{14}$
in point	$P_{8140}$	$P_2$	$P_2$	$P_2$	$P_2$	$P_2$	$P_{53195}$	$P_{12235}$

Line 9 intersects

Line	$\ell_2$	$\ell_3$	$\ell_7$	$\ell_{10}$	$\ell_{13}$	$\ell_{14}$
in point	$P_{5104}$	$P_{8806}$	$P_{52555}$	$P_{199617}$	$P_{195148}$	$P_{156912}$

#### Line 10 intersects

Line	$\ell_2$	$\ell_6$	$\ell_8$	$\ell_9$	$\ell_{11}$	$\ell_{12}$
in point	$P_{6256}$	$P_{11174}$	$P_{53195}$	$P_{199617}$	$P_{194828}$	$P_{159664}$

#### Line 11 intersects

Line	$\ell_0$	$\ell_3$	$\ell_5$	$\ell_{10}$	$\ell_{12}$	$\ell_{13}$
in point	$P_{7564}$	$P_{152166}$	$P_{10415}$	$P_{194828}$	$P_{47077}$	$P_{49857}$

## Line 12 intersects

Line	$\ell_1$	$\ell_4$	$\ell_7$	$\ell_{10}$	$\ell_{11}$	$\ell_{14}$
in point	$P_{7015}$	$P_{197679}$	$P_{11595}$	$P_{159664}$	$P_{47077}$	$P_{153985}$

## Line 13 intersects

Line	$\ell_0$	$\ell_4$	$\ell_6$	$\ell_9$	$\ell_{11}$	$\ell_{14}$
in point	$P_{8204}$	$P_{9263}$	$P_{154534}$	$P_{195148}$	$P_{49857}$	$P_{48869}$

#### Line 14 intersects

Line	$\ell_1$	$\ell_5$	$\ell_8$	$\ell_9$	$\ell_{12}$	$\ell_{13}$
in point	$P_{4775}$	$P_{198831}$	$P_{12235}$	$P_{156912}$	$P_{153985}$	$P_{48869}$

The surface has 4417 points:

Too many to print.