Rank-74055 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1090789445

General information

Number of lines	10
Number of points	4353
Number of singular points	1
Number of Eckardt points	2
Number of double points	9
Number of single points	621
Number of points off lines	3720
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^{10}
Type of lines on points	$5, 3^2, 2^9, 1^{621}, 0^{3720}$

Singular Points

The surface has 1 singular points:

$0: P_{8322} = \mathbf{P}(0, 1, 1, 1) = \mathbf{P}(0, 1, 1, 1)$

The 10 Lines

The lines and their Pluecker coordinates are:

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

$$\ell_1 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \mathbf{Pl}(0,0,0,1,0,0)_{129}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \mathbf{Pl}(1,0,0,1,0,0)_{130}$$

$$\ell_3 = \begin{bmatrix} 1 & 0 & \epsilon^{21} & \epsilon^{21} \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15416570} = \begin{bmatrix} 1 & 0 & 57 & 57 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15416570} = \mathbf{Pl}(1,0,1,1,56,1)_{14958979}$$

$$\ell_4 = \begin{bmatrix} 1 & 0 & \epsilon^{42} & \epsilon^{42} \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15146105} = \begin{bmatrix} 1 & 0 & 56 & 56 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15146105} = \mathbf{Pl}(1,0,1,1,57,1)_{15221059}$$

$$\ell_5 = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \mathbf{Pl}(0,1,0,1,0,0)_{193}$$

$$\ell_6 = \begin{bmatrix} 1 & 0 & 1 & \epsilon^{42} \\ 0 & 1 & 0 & 1 \end{bmatrix}_{14917249} = \begin{bmatrix} 1 & 0 & 1 & 56 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{14917249} = \mathbf{Pl}(1,1,0,56,1,1)_{544074}$$

$$\ell_7 = \begin{bmatrix} 1 & 0 & \epsilon^{21} & \epsilon^{42} \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15150266} = \begin{bmatrix} 1 & 0 & 57 & 56 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15150266} = \mathbf{Pl}(57,56,56,57,56,1)_{15185330}$$

$$\ell_8 = \begin{bmatrix} 1 & 0 & 1 & \epsilon^{21} \\ 0 & 1 & 0 & 1 \end{bmatrix}_{15183553} = \begin{bmatrix} 1 & 0 & 1 & 57 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{15183553} = \mathbf{Pl}(1,1,0,57,1,1)_{544137}$$

$$\ell_9 = \begin{bmatrix} 1 & 0 & \epsilon^{42} & \epsilon^{21} \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15412409} = \begin{bmatrix} 1 & 0 & 56 & 57 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{15412409} = \mathbf{Pl}(56,57,57,56,57,1)_{15451252}$$

Rank of lines: (0, 17043520, 266304, 15416570, 15146105, 17043585, 14917249, 15150266, 15183553, 15412409)

Rank of points on Klein quadric: (0, 129, 130, 14958979, 15221059, 193, 544074, 15185330, 544137, 15451252)

Eckardt Points

The surface has 2 Eckardt points:
$0 : P_1 = \mathbf{P}(0,1,0,0) = \mathbf{P}(0,1,0,0),$
$1 : P_{4226} = \mathbf{P}(0,1,0,1) = \mathbf{P}(0,1,0,1).$

Double Points

The surface has 9 Double points:
The double points on the surface are:

$P_{60} = (56,1,0,0) = \ell_0 \cap \ell_3$ $P_{11842} = (1,56,1,1) = \ell_3 \cap \ell_8$

$P_{61} = (57,1,0,0) = \ell_0 \cap \ell_4$ $P_{11906} = (1,57,1,1) = \ell_4 \cap \ell_6$

$P_3 = (0,0,0,1) = \ell_1 \cap \ell_5$ $P_{3652} = (1,56,1,0) = \ell_6 \cap \ell_7$

$P_{7811} = (1,57,0,1) = \ell_2 \cap \ell_7$ $P_{3716} = (1,57,1,0) = \ell_8 \cap \ell_9$

$P_{7747} = (1,56,0,1) = \ell_2 \cap \ell_9$

Single Points

The surface has 621 single points:
The single points on the surface are:

$0: P_0 = (1,0,0,0)$ lies on line ℓ_0
$1: P_5 = (1,1,0,0)$ lies on line ℓ_0
$2: P_6 = (2,1,0,0)$ lies on line ℓ_0
$3: P_7 = (3,1,0,0)$ lies on line ℓ_0
$4: P_8 = (4,1,0,0)$ lies on line ℓ_0
$5: P_9 = (5,1,0,0)$ lies on line ℓ_0
$6: P_{10} = (6,1,0,0)$ lies on line ℓ_0
$7: P_{11} = (7,1,0,0)$ lies on line ℓ_0
$8: P_{12} = (8,1,0,0)$ lies on line ℓ_0
$9: P_{13} = (9,1,0,0)$ lies on line ℓ_0
$10: P_{14} = (10,1,0,0)$ lies on line ℓ_0
$11: P_{15} = (11,1,0,0)$ lies on line ℓ_0
$12: P_{16} = (12,1,0,0)$ lies on line ℓ_0
$13: P_{17} = (13,1,0,0)$ lies on line ℓ_0
$14: P_{18} = (14,1,0,0)$ lies on line ℓ_0
$15: P_{19} = (15,1,0,0)$ lies on line ℓ_0
$16: P_{20} = (16,1,0,0)$ lies on line ℓ_0
$17: P_{21} = (17,1,0,0)$ lies on line ℓ_0
$18: P_{22} = (18,1,0,0)$ lies on line ℓ_0
$19: P_{23} = (19,1,0,0)$ lies on line ℓ_0
$20: P_{24} = (20,1,0,0)$ lies on line ℓ_0
$21: P_{25} = (21,1,0,0)$ lies on line ℓ_0
$22: P_{26} = (22,1,0,0)$ lies on line ℓ_0
$23: P_{27} = (23,1,0,0)$ lies on line ℓ_0
$24: P_{28} = (24,1,0,0)$ lies on line ℓ_0
$25: P_{29} = (25,1,0,0)$ lies on line ℓ_0
$26: P_{30} = (26,1,0,0)$ lies on line ℓ_0
$27: P_{31} = (27,1,0,0)$ lies on line ℓ_0
$28: P_{32} = (28,1,0,0)$ lies on line ℓ_0
$29: P_{33} = (29,1,0,0)$ lies on line ℓ_0
$30: P_{34} = (30,1,0,0)$ lies on line ℓ_0
$31: P_{35} = (31,1,0,0)$ lies on line ℓ_0
$32: P_{36} = (32,1,0,0)$ lies on line ℓ_0
$33: P_{37} = (33,1,0,0)$ lies on line ℓ_0
$34: P_{38} = (34,1,0,0)$ lies on line ℓ_0
$35: P_{39} = (35,1,0,0)$ lies on line ℓ_0
$36: P_{40} = (36,1,0,0)$ lies on line ℓ_0
$37: P_{41} = (37,1,0,0)$ lies on line ℓ_0
$38: P_{42} = (38,1,0,0)$ lies on line ℓ_0
$39: P_{43} = (39,1,0,0)$ lies on line ℓ_0
$40: P_{44} = (40,1,0,0)$ lies on line ℓ_0
$41: P_{45} = (41,1,0,0)$ lies on line ℓ_0
$42: P_{46} = (42,1,0,0)$ lies on line ℓ_0
$43: P_{47} = (43,1,0,0)$ lies on line ℓ_0
$44: P_{48} = (44,1,0,0)$ lies on line ℓ_0
$45: P_{49} = (45,1,0,0)$ lies on line ℓ_0
$46: P_{50} = (46,1,0,0)$ lies on line ℓ_0
$47: P_{51} = (47,1,0,0)$ lies on line ℓ_0
$48: P_{52} = (48,1,0,0)$ lies on line ℓ_0
$49: P_{53} = (49,1,0,0)$ lies on line ℓ_0
$50: P_{54} = (50,1,0,0)$ lies on line ℓ_0
$51: P_{55} = (51,1,0,0)$ lies on line ℓ_0
$52: P_{56} = (52,1,0,0)$ lies on line ℓ_0
$53: P_{57} = (53,1,0,0)$ lies on line ℓ_0

$54: P_{58} = (54,1,0,0)$ lies on line ℓ_0
$55: P_{59} = (55,1,0,0)$ lies on line ℓ_0
$56: P_{62} = (58,1,0,0)$ lies on line ℓ_0
$57: P_{63} = (59,1,0,0)$ lies on line ℓ_0
$58: P_{64} = (60,1,0,0)$ lies on line ℓ_0
$59: P_{65} = (61,1,0,0)$ lies on line ℓ_0
$60: P_{66} = (62,1,0,0)$ lies on line ℓ_0
$61: P_{67} = (63,1,0,0)$ lies on line ℓ_0
$62: P_{131} = (0,1,1,0)$ lies on line ℓ_5
$63: P_{4163} = (1,0,0,1)$ lies on line ℓ_2
$64: P_{4227} = (1,1,0,1)$ lies on line ℓ_2
$65: P_{4290} = (0,2,0,1)$ lies on line ℓ_1
$66: P_{4291} = (1,2,0,1)$ lies on line ℓ_2
$67: P_{4354} = (0,3,0,1)$ lies on line ℓ_1
$68: P_{4355} = (1,3,0,1)$ lies on line ℓ_2
$69: P_{4418} = (0,4,0,1)$ lies on line ℓ_1
$70: P_{4419} = (1,4,0,1)$ lies on line ℓ_2
$71: P_{4482} = (0,5,0,1)$ lies on line ℓ_1
$72: P_{4483} = (1,5,0,1)$ lies on line ℓ_2
$73: P_{4546} = (0,6,0,1)$ lies on line ℓ_1
$74: P_{4547} = (1,6,0,1)$ lies on line ℓ_2
$75: P_{4610} = (0,7,0,1)$ lies on line ℓ_1
$76: P_{4611} = (1,7,0,1)$ lies on line ℓ_2
$77: P_{4674} = (0,8,0,1)$ lies on line ℓ_1
$78: P_{4675} = (1,8,0,1)$ lies on line ℓ_2
$79: P_{4738} = (0,9,0,1)$ lies on line ℓ_1
$80: P_{4739} = (1,9,0,1)$ lies on line ℓ_2
$81: P_{4802} = (0,10,0,1)$ lies on line ℓ_1
$82: P_{4803} = (1,10,0,1)$ lies on line ℓ_2
$83: P_{4866} = (0,11,0,1)$ lies on line ℓ_1
$84: P_{4867} = (1,11,0,1)$ lies on line ℓ_2
$85: P_{4930} = (0,12,0,1)$ lies on line ℓ_1
$86: P_{4931} = (1,12,0,1)$ lies on line ℓ_2
$87: P_{4994} = (0,13,0,1)$ lies on line ℓ_1
$88: P_{4995} = (1,13,0,1)$ lies on line ℓ_2
$89: P_{5058} = (0,14,0,1)$ lies on line ℓ_1
$90: P_{5059} = (1,14,0,1)$ lies on line ℓ_2
$91: P_{5122} = (0,15,0,1)$ lies on line ℓ_1
$92: P_{5123} = (1,15,0,1)$ lies on line ℓ_2
$93: P_{5186} = (0,16,0,1)$ lies on line ℓ_1
$94: P_{5187} = (1,16,0,1)$ lies on line ℓ_2
$95: P_{5250} = (0,17,0,1)$ lies on line ℓ_1
$96: P_{5251} = (1,17,0,1)$ lies on line ℓ_2
$97: P_{5314} = (0,18,0,1)$ lies on line ℓ_1
$98: P_{5315} = (1,18,0,1)$ lies on line ℓ_2
$99: P_{5378} = (0,19,0,1)$ lies on line ℓ_1
$100: P_{5379} = (1,19,0,1)$ lies on line ℓ_2
$101: P_{5442} = (0,20,0,1)$ lies on line ℓ_1
$102: P_{5443} = (1,20,0,1)$ lies on line ℓ_2
$103: P_{5506} = (0,21,0,1)$ lies on line ℓ_1
$104: P_{5507} = (1,21,0,1)$ lies on line ℓ_2
$105: P_{5570} = (0,22,0,1)$ lies on line ℓ_1
$106: P_{5571} = (1,22,0,1)$ lies on line ℓ_2
$107: P_{5634} = (0,23,0,1)$ lies on line ℓ_1

$108: P_{5635} = (1, 23, 0, 1)$ lies on line ℓ_2

$109: P_{5698} = (0, 24, 0, 1)$ lies on line ℓ_1

$110: P_{5699} = (1, 24, 0, 1)$ lies on line ℓ_2

$111: P_{5762} = (0, 25, 0, 1)$ lies on line ℓ_1

$112: P_{5763} = (1, 25, 0, 1)$ lies on line ℓ_2

$113: P_{5826} = (0, 26, 0, 1)$ lies on line ℓ_1

$114: P_{5827} = (1, 26, 0, 1)$ lies on line ℓ_2

$115: P_{5890} = (0, 27, 0, 1)$ lies on line ℓ_1

$116: P_{5891} = (1, 27, 0, 1)$ lies on line ℓ_2

$117: P_{5954} = (0, 28, 0, 1)$ lies on line ℓ_1

$118: P_{5955} = (1, 28, 0, 1)$ lies on line ℓ_2

$119: P_{6018} = (0, 29, 0, 1)$ lies on line ℓ_1

$120: P_{6019} = (1, 29, 0, 1)$ lies on line ℓ_2

$121: P_{6082} = (0, 30, 0, 1)$ lies on line ℓ_1

$122: P_{6083} = (1, 30, 0, 1)$ lies on line ℓ_2

$123: P_{6146} = (0, 31, 0, 1)$ lies on line ℓ_1

$124: P_{6147} = (1, 31, 0, 1)$ lies on line ℓ_2

$125: P_{6210} = (0, 32, 0, 1)$ lies on line ℓ_1

$126: P_{6211} = (1, 32, 0, 1)$ lies on line ℓ_2

$127: P_{6274} = (0, 33, 0, 1)$ lies on line ℓ_1

$128: P_{6275} = (1, 33, 0, 1)$ lies on line ℓ_2

$129: P_{6338} = (0, 34, 0, 1)$ lies on line ℓ_1

$130: P_{6339} = (1, 34, 0, 1)$ lies on line ℓ_2

$131: P_{6402} = (0, 35, 0, 1)$ lies on line ℓ_1

$132: P_{6403} = (1, 35, 0, 1)$ lies on line ℓ_2

$133: P_{6466} = (0, 36, 0, 1)$ lies on line ℓ_1

$134: P_{6467} = (1, 36, 0, 1)$ lies on line ℓ_2

$135: P_{6530} = (0, 37, 0, 1)$ lies on line ℓ_1

$136: P_{6531} = (1, 37, 0, 1)$ lies on line ℓ_2

$137: P_{6594} = (0, 38, 0, 1)$ lies on line ℓ_1

$138: P_{6595} = (1, 38, 0, 1)$ lies on line ℓ_2

$139: P_{6658} = (0, 39, 0, 1)$ lies on line ℓ_1

$140: P_{6659} = (1, 39, 0, 1)$ lies on line ℓ_2

$141: P_{6722} = (0, 40, 0, 1)$ lies on line ℓ_1

$142: P_{6723} = (1, 40, 0, 1)$ lies on line ℓ_2

$143: P_{6786} = (0, 41, 0, 1)$ lies on line ℓ_1

$144: P_{6787} = (1, 41, 0, 1)$ lies on line ℓ_2

$145: P_{6850} = (0, 42, 0, 1)$ lies on line ℓ_1

$146: P_{6851} = (1, 42, 0, 1)$ lies on line ℓ_2

$147: P_{6914} = (0, 43, 0, 1)$ lies on line ℓ_1

$148: P_{6915} = (1, 43, 0, 1)$ lies on line ℓ_2

$149: P_{6978} = (0, 44, 0, 1)$ lies on line ℓ_1

$150: P_{6979} = (1, 44, 0, 1)$ lies on line ℓ_2

$151: P_{7042} = (0, 45, 0, 1)$ lies on line ℓ_1

$152: P_{7043} = (1, 45, 0, 1)$ lies on line ℓ_2

$153: P_{7106} = (0, 46, 0, 1)$ lies on line ℓ_1

$154: P_{7107} = (1, 46, 0, 1)$ lies on line ℓ_2

$155: P_{7170} = (0, 47, 0, 1)$ lies on line ℓ_1

$156: P_{7171} = (1, 47, 0, 1)$ lies on line ℓ_2

$157: P_{7234} = (0, 48, 0, 1)$ lies on line ℓ_1

$158: P_{7235} = (1, 48, 0, 1)$ lies on line ℓ_2

$159: P_{7298} = (0, 49, 0, 1)$ lies on line ℓ_1

$160: P_{7299} = (1, 49, 0, 1)$ lies on line ℓ_2

$161: P_{7362} = (0, 50, 0, 1)$ lies on line ℓ_1

$162: P_{7363} = (1, 50, 0, 1)$ lies on line ℓ_2

$163: P_{7426} = (0, 51, 0, 1)$ lies on line ℓ_1

$164: P_{7427} = (1, 51, 0, 1)$ lies on line ℓ_2

$165: P_{7490} = (0, 52, 0, 1)$ lies on line ℓ_1

$166: P_{7491} = (1, 52, 0, 1)$ lies on line ℓ_2

$167: P_{7554} = (0, 53, 0, 1)$ lies on line ℓ_1

$168: P_{7555} = (1, 53, 0, 1)$ lies on line ℓ_2

$169: P_{7618} = (0, 54, 0, 1)$ lies on line ℓ_1

$170: P_{7619} = (1, 54, 0, 1)$ lies on line ℓ_2

$171: P_{7682} = (0, 55, 0, 1)$ lies on line ℓ_1

$172: P_{7683} = (1, 55, 0, 1)$ lies on line ℓ_2

$173: P_{7746} = (0, 56, 0, 1)$ lies on line ℓ_1

$174: P_{7810} = (0, 57, 0, 1)$ lies on line ℓ_1

$175: P_{7874} = (0, 58, 0, 1)$ lies on line ℓ_1

$176: P_{7875} = (1, 58, 0, 1)$ lies on line ℓ_2

$177: P_{7938} = (0, 59, 0, 1)$ lies on line ℓ_1

$178: P_{7939} = (1, 59, 0, 1)$ lies on line ℓ_2

$179: P_{8002} = (0, 60, 0, 1)$ lies on line ℓ_1

$180: P_{8003} = (1, 60, 0, 1)$ lies on line ℓ_2

$181: P_{8066} = (0, 61, 0, 1)$ lies on line ℓ_1

$182: P_{8067} = (1, 61, 0, 1)$ lies on line ℓ_2

$183: P_{8130} = (0, 62, 0, 1)$ lies on line ℓ_1

$184: P_{8131} = (1, 62, 0, 1)$ lies on line ℓ_2

$185: P_{8194} = (0, 63, 0, 1)$ lies on line ℓ_1

$186: P_{8195} = (1, 63, 0, 1)$ lies on line ℓ_2

$187: P_{8314} = (56, 0, 1, 1)$ lies on line ℓ_3

$188: P_{8315} = (57, 0, 1, 1)$ lies on line ℓ_4

$189: P_{8426} = (41, 2, 1, 1)$ lies on line ℓ_3

$190: P_{8427} = (42, 2, 1, 1)$ lies on line ℓ_4

$191: P_{8466} = (17, 3, 1, 1)$ lies on line ℓ_3

$192: P_{8468} = (19, 3, 1, 1)$ lies on line ℓ_4

$193: P_{8539} = (26, 4, 1, 1)$ lies on line ℓ_3

$194: P_{8544} = (31, 4, 1, 1)$ lies on line ℓ_4

$195: P_{8611} = (34, 5, 1, 1)$ lies on line ℓ_3

$196: P_{8615} = (38, 5, 1, 1)$ lies on line ℓ_4

$197: P_{8652} = (11, 6, 1, 1)$ lies on line ℓ_3

$198: P_{8653} = (12, 6, 1, 1)$ lies on line ℓ_4

$199: P_{8756} = (51, 7, 1, 1)$ lies on line ℓ_3

$200: P_{8758} = (53, 7, 1, 1)$ lies on line ℓ_4

$201: P_{8789} = (20, 8, 1, 1)$ lies on line ℓ_4

$202: P_{8798} = (29, 8, 1, 1)$ lies on line ℓ_3

$203: P_{8870} = (37, 9, 1, 1)$ lies on line ℓ_3

$204: P_{8878} = (45, 9, 1, 1)$ lies on line ℓ_4

$205: P_{8904} = (7, 10, 1, 1)$ lies on line ℓ_4

$206: P_{8909} = (12, 10, 1, 1)$ lies on line ℓ_3

$207: P_{9013} = (52, 11, 1, 1)$ lies on line ℓ_3

$208: P_{9023} = (62, 11, 1, 1)$ lies on line ℓ_4

$209: P_{9075} = (50, 12, 1, 1)$ lies on line ℓ_4

$210: P_{9088} = (63, 12, 1, 1)$ lies on line ℓ_3

$211: P_{9096} = (7, 13, 1, 1)$ lies on line ℓ_3

$212: P_{9100} = (11, 13, 1, 1)$ lies on line ℓ_4

$213: P_{9186} = (33, 14, 1, 1)$ lies on line ℓ_4

$214: P_{9199} = (46, 14, 1, 1)$ lies on line ℓ_3

$215: P_{9239} = (22, 15, 1, 1)$ lies on line ℓ_3

216 : $P_{9241} = (24, 15, 1, 1)$ lies on line ℓ_4
217 : $P_{9283} = (2, 16, 1, 1)$ lies on line ℓ_4
218 : $P_{9300} = (19, 16, 1, 1)$ lies on line ℓ_3
219 : $P_{9388} = (43, 17, 1, 1)$ lies on line ℓ_3
220 : $P_{9404} = (59, 17, 1, 1)$ lies on line ℓ_4
221 : $P_{9411} = (2, 18, 1, 1)$ lies on line ℓ_3
222 : $P_{9426} = (17, 18, 1, 1)$ lies on line ℓ_4
223 : $P_{9513} = (40, 19, 1, 1)$ lies on line ℓ_4
224 : $P_{9531} = (58, 19, 1, 1)$ lies on line ℓ_3
225 : $P_{9573} = (36, 20, 1, 1)$ lies on line ℓ_4
226 : $P_{9586} = (49, 20, 1, 1)$ lies on line ℓ_3
227 : $P_{9610} = (9, 21, 1, 1)$ lies on line ℓ_3
228 : $P_{9630} = (29, 21, 1, 1)$ lies on line ℓ_4
229 : $P_{9697} = (32, 22, 1, 1)$ lies on line ℓ_3
230 : $P_{9720} = (55, 22, 1, 1)$ lies on line ℓ_4
231 : $P_{9743} = (14, 23, 1, 1)$ lies on line ℓ_4
232 : $P_{9753} = (24, 23, 1, 1)$ lies on line ℓ_3
233 : $P_{9840} = (47, 24, 1, 1)$ lies on line ℓ_4
234 : $P_{9847} = (54, 24, 1, 1)$ lies on line ℓ_3
235 : $P_{9871} = (14, 25, 1, 1)$ lies on line ℓ_3
236 : $P_{9879} = (22, 25, 1, 1)$ lies on line ℓ_4
237 : $P_{9960} = (39, 26, 1, 1)$ lies on line ℓ_3
238 : $P_{9981} = (60, 26, 1, 1)$ lies on line ℓ_4
239 : $P_{9990} = (5, 27, 1, 1)$ lies on line ℓ_4
240 : $P_{10016} = (31, 27, 1, 1)$ lies on line ℓ_3
241 : $P_{10058} = (9, 28, 1, 1)$ lies on line ℓ_4
242 : $P_{10069} = (20, 28, 1, 1)$ lies on line ℓ_3
243 : $P_{10157} = (44, 29, 1, 1)$ lies on line ℓ_3
244 : $P_{10161} = (48, 29, 1, 1)$ lies on line ℓ_4
245 : $P_{10182} = (5, 30, 1, 1)$ lies on line ℓ_3
246 : $P_{10203} = (26, 30, 1, 1)$ lies on line ℓ_4
247 : $P_{10276} = (35, 31, 1, 1)$ lies on line ℓ_4
248 : $P_{10302} = (61, 31, 1, 1)$ lies on line ℓ_3
249 : $P_{10320} = (15, 32, 1, 1)$ lies on line ℓ_3
250 : $P_{10351} = (46, 32, 1, 1)$ lies on line ℓ_4
251 : $P_{10392} = (23, 33, 1, 1)$ lies on line ℓ_4
252 : $P_{10424} = (55, 33, 1, 1)$ lies on line ℓ_3
253 : $P_{10463} = (30, 34, 1, 1)$ lies on line ℓ_3
254 : $P_{10494} = (61, 34, 1, 1)$ lies on line ℓ_4
255 : $P_{10501} = (4, 35, 1, 1)$ lies on line ℓ_4
256 : $P_{10535} = (38, 35, 1, 1)$ lies on line ℓ_3
257 : $P_{10569} = (8, 36, 1, 1)$ lies on line ℓ_4
258 : $P_{10606} = (45, 36, 1, 1)$ lies on line ℓ_3
259 : $P_{10646} = (21, 37, 1, 1)$ lies on line ℓ_3
260 : $P_{10674} = (49, 37, 1, 1)$ lies on line ℓ_4
261 : $P_{10716} = (27, 38, 1, 1)$ lies on line ℓ_4
262 : $P_{10749} = (60, 38, 1, 1)$ lies on line ℓ_3
263 : $P_{10757} = (4, 39, 1, 1)$ lies on line ℓ_3
264 : $P_{10787} = (34, 39, 1, 1)$ lies on line ℓ_4
265 : $P_{10820} = (3, 40, 1, 1)$ lies on line ℓ_4
266 : $P_{10859} = (42, 40, 1, 1)$ lies on line ℓ_3
267 : $P_{10899} = (18, 41, 1, 1)$ lies on line ℓ_3
268 : $P_{10939} = (58, 41, 1, 1)$ lies on line ℓ_4
269 : $P_{10961} = (16, 42, 1, 1)$ lies on line ℓ_4
270 : $P_{11004} = (59, 42, 1, 1)$ lies on line ℓ_3
271 : $P_{11012} = (3, 43, 1, 1)$ lies on line ℓ_3
272 : $P_{11050} = (41, 43, 1, 1)$ lies on line ℓ_4
273 : $P_{11081} = (8, 44, 1, 1)$ lies on line ℓ_3
274 : $P_{11110} = (37, 44, 1, 1)$ lies on line ℓ_4
275 : $P_{11165} = (28, 45, 1, 1)$ lies on line ℓ_4
276 : $P_{11185} = (48, 45, 1, 1)$ lies on line ℓ_3
277 : $P_{11226} = (25, 46, 1, 1)$ lies on line ℓ_3
278 : $P_{11255} = (54, 46, 1, 1)$ lies on line ℓ_4
279 : $P_{11280} = (15, 47, 1, 1)$ lies on line ℓ_4
280 : $P_{11298} = (33, 47, 1, 1)$ lies on line ℓ_3
281 : $P_{11350} = (21, 48, 1, 1)$ lies on line ℓ_4
282 : $P_{11365} = (36, 48, 1, 1)$ lies on line ℓ_3
283 : $P_{11421} = (28, 49, 1, 1)$ lies on line ℓ_3
284 : $P_{11437} = (44, 49, 1, 1)$ lies on line ℓ_4
285 : $P_{11463} = (6, 50, 1, 1)$ lies on line ℓ_4
286 : $P_{11510} = (53, 50, 1, 1)$ lies on line ℓ_3
287 : $P_{11534} = (13, 51, 1, 1)$ lies on line ℓ_3
288 : $P_{11584} = (63, 51, 1, 1)$ lies on line ℓ_4
289 : $P_{11591} = (6, 52, 1, 1)$ lies on line ℓ_3
290 : $P_{11636} = (51, 52, 1, 1)$ lies on line ℓ_4
291 : $P_{11659} = (10, 53, 1, 1)$ lies on line ℓ_4
292 : $P_{11711} = (62, 53, 1, 1)$ lies on line ℓ_3
293 : $P_{11736} = (23, 54, 1, 1)$ lies on line ℓ_3
294 : $P_{11745} = (32, 54, 1, 1)$ lies on line ℓ_4
295 : $P_{11802} = (25, 55, 1, 1)$ lies on line ℓ_4
296 : $P_{11824} = (47, 55, 1, 1)$ lies on line ℓ_3
297 : $P_{11897} = (56, 56, 1, 1)$ lies on line ℓ_4
298 : $P_{11962} = (57, 57, 1, 1)$ lies on line ℓ_3
299 : $P_{11985} = (16, 58, 1, 1)$ lies on line ℓ_3
300 : $P_{12012} = (43, 58, 1, 1)$ lies on line ℓ_4
301 : $P_{12051} = (18, 59, 1, 1)$ lies on line ℓ_4
302 : $P_{12073} = (40, 59, 1, 1)$ lies on line ℓ_3
303 : $P_{12127} = (30, 60, 1, 1)$ lies on line ℓ_4
304 : $P_{12132} = (35, 60, 1, 1)$ lies on line ℓ_3
305 : $P_{12188} = (27, 61, 1, 1)$ lies on line ℓ_3
306 : $P_{12200} = (39, 61, 1, 1)$ lies on line ℓ_4
307 : $P_{12238} = (13, 62, 1, 1)$ lies on line ℓ_4
308 : $P_{12275} = (50, 62, 1, 1)$ lies on line ℓ_3
309 : $P_{12299} = (10, 63, 1, 1)$ lies on line ℓ_3
310 : $P_{12341} = (52, 63, 1, 1)$ lies on line ℓ_4
311 : $P_{12481} = (0, 2, 2, 1)$ lies on line ℓ_5
312 : $P_{13379} = (2, 16, 2, 1)$ lies on line ℓ_6
313 : $P_{13507} = (2, 18, 2, 1)$ lies on line ℓ_8
314 : $P_{14916} = (3, 40, 2, 1)$ lies on line ℓ_7
315 : $P_{15108} = (3, 43, 2, 1)$ lies on line ℓ_9
316 : $P_{16641} = (0, 3, 3, 1)$ lies on line ℓ_5
317 : $P_{17475} = (2, 16, 3, 1)$ lies on line ℓ_7
318 : $P_{17603} = (2, 18, 3, 1)$ lies on line ℓ_9
319 : $P_{19012} = (3, 40, 3, 1)$ lies on line ℓ_6
320 : $P_{19204} = (3, 43, 3, 1)$ lies on line ℓ_8
321 : $P_{20801} = (0, 4, 4, 1)$ lies on line ℓ_5
322 : $P_{22278} = (5, 27, 4, 1)$ lies on line ℓ_7
323 : $P_{22470} = (5, 30, 4, 1)$ lies on line ℓ_9

$324 : P_{22789} = (4, 35, 4, 1)$ lies on line ℓ_6
$325 : P_{23045} = (4, 39, 4, 1)$ lies on line ℓ_8
$326 : P_{24961} = (0, 5, 5, 1)$ lies on line ℓ_5
$327 : P_{26374} = (5, 27, 5, 1)$ lies on line ℓ_6
$328 : P_{26566} = (5, 30, 5, 1)$ lies on line ℓ_8
$329 : P_{26885} = (4, 35, 5, 1)$ lies on line ℓ_7
$330 : P_{27141} = (4, 39, 5, 1)$ lies on line ℓ_9
$331 : P_{29121} = (0, 6, 6, 1)$ lies on line ℓ_5
$332 : P_{29384} = (7, 10, 6, 1)$ lies on line ℓ_7
$333 : P_{29576} = (7, 13, 6, 1)$ lies on line ℓ_9
$334 : P_{31943} = (6, 50, 6, 1)$ lies on line ℓ_6
$335 : P_{32071} = (6, 52, 6, 1)$ lies on line ℓ_8
$336 : P_{33281} = (0, 7, 7, 1)$ lies on line ℓ_5
$337 : P_{33480} = (7, 10, 7, 1)$ lies on line ℓ_6
$338 : P_{33672} = (7, 13, 7, 1)$ lies on line ℓ_8
$339 : P_{36039} = (6, 50, 7, 1)$ lies on line ℓ_7
$340 : P_{36167} = (6, 52, 7, 1)$ lies on line ℓ_9
$341 : P_{37441} = (0, 8, 8, 1)$ lies on line ℓ_5
$342 : P_{38282} = (9, 21, 8, 1)$ lies on line ℓ_9
$343 : P_{38730} = (9, 28, 8, 1)$ lies on line ℓ_7
$344 : P_{39241} = (8, 36, 8, 1)$ lies on line ℓ_6
$345 : P_{39753} = (8, 44, 8, 1)$ lies on line ℓ_8
$346 : P_{41601} = (0, 9, 9, 1)$ lies on line ℓ_5
$347 : P_{42378} = (9, 21, 9, 1)$ lies on line ℓ_8
$348 : P_{42826} = (9, 28, 9, 1)$ lies on line ℓ_6
$349 : P_{43337} = (8, 36, 9, 1)$ lies on line ℓ_7
$350 : P_{43849} = (8, 44, 9, 1)$ lies on line ℓ_9
$351 : P_{45516} = (11, 6, 10, 1)$ lies on line ℓ_9
$352 : P_{45761} = (0, 10, 10, 1)$ lies on line ℓ_5
$353 : P_{45964} = (11, 13, 10, 1)$ lies on line ℓ_7
$354 : P_{48523} = (10, 53, 10, 1)$ lies on line ℓ_6
$355 : P_{49163} = (10, 63, 10, 1)$ lies on line ℓ_8
$356 : P_{49612} = (11, 6, 11, 1)$ lies on line ℓ_8
$357 : P_{49921} = (0, 11, 11, 1)$ lies on line ℓ_5
$358 : P_{50060} = (11, 13, 11, 1)$ lies on line ℓ_6
$359 : P_{52619} = (10, 53, 11, 1)$ lies on line ℓ_7
$360 : P_{53259} = (10, 63, 11, 1)$ lies on line ℓ_9
$361 : P_{53709} = (12, 6, 12, 1)$ lies on line ℓ_6
$362 : P_{53965} = (12, 10, 12, 1)$ lies on line ℓ_8
$363 : P_{54081} = (0, 12, 12, 1)$ lies on line ℓ_5
$364 : P_{56590} = (13, 51, 12, 1)$ lies on line ℓ_9
$365 : P_{57294} = (13, 62, 12, 1)$ lies on line ℓ_7
$366 : P_{57805} = (12, 6, 13, 1)$ lies on line ℓ_7
$367 : P_{58061} = (12, 10, 13, 1)$ lies on line ℓ_9
$368 : P_{58241} = (0, 13, 13, 1)$ lies on line ℓ_5
$369 : P_{60686} = (13, 51, 13, 1)$ lies on line ℓ_8
$370 : P_{61390} = (13, 62, 13, 1)$ lies on line ℓ_6
$371 : P_{62401} = (0, 14, 14, 1)$ lies on line ℓ_5
$372 : P_{62991} = (14, 23, 14, 1)$ lies on line ℓ_6
$373 : P_{63119} = (14, 25, 14, 1)$ lies on line ℓ_8
$374 : P_{63568} = (15, 32, 14, 1)$ lies on line ℓ_9
$375 : P_{64528} = (15, 47, 14, 1)$ lies on line ℓ_7
$376 : P_{66561} = (0, 15, 15, 1)$ lies on line ℓ_5
$377 : P_{67087} = (14, 23, 15, 1)$ lies on line ℓ_7

$378 : P_{67215} = (14, 25, 15, 1)$ lies on line ℓ_9
$379 : P_{67664} = (15, 32, 15, 1)$ lies on line ℓ_8
$380 : P_{68624} = (15, 47, 15, 1)$ lies on line ℓ_6
$381 : P_{69906} = (17, 3, 16, 1)$ lies on line ℓ_9
$382 : P_{70721} = (0, 16, 16, 1)$ lies on line ℓ_5
$383 : P_{70866} = (17, 18, 16, 1)$ lies on line ℓ_7
$384 : P_{72401} = (16, 42, 16, 1)$ lies on line ℓ_6
$385 : P_{73425} = (16, 58, 16, 1)$ lies on line ℓ_8
$386 : P_{74002} = (17, 3, 17, 1)$ lies on line ℓ_8
$387 : P_{74881} = (0, 17, 17, 1)$ lies on line ℓ_5
$388 : P_{74962} = (17, 18, 17, 1)$ lies on line ℓ_6
$389 : P_{76497} = (16, 42, 17, 1)$ lies on line ℓ_7
$390 : P_{77521} = (16, 58, 17, 1)$ lies on line ℓ_9
$391 : P_{78100} = (19, 3, 18, 1)$ lies on line ℓ_7
$392 : P_{78932} = (19, 16, 18, 1)$ lies on line ℓ_9
$393 : P_{79041} = (0, 18, 18, 1)$ lies on line ℓ_5
$394 : P_{80531} = (18, 41, 18, 1)$ lies on line ℓ_8
$395 : P_{81683} = (18, 59, 18, 1)$ lies on line ℓ_6
$396 : P_{82196} = (19, 3, 19, 1)$ lies on line ℓ_6
$397 : P_{83028} = (19, 16, 19, 1)$ lies on line ℓ_8
$398 : P_{83201} = (0, 19, 19, 1)$ lies on line ℓ_5
$399 : P_{84627} = (18, 41, 19, 1)$ lies on line ℓ_9
$400 : P_{85779} = (18, 59, 19, 1)$ lies on line ℓ_7
$401 : P_{86613} = (20, 8, 20, 1)$ lies on line ℓ_6
$402 : P_{87361} = (0, 20, 20, 1)$ lies on line ℓ_5
$403 : P_{87893} = (20, 28, 20, 1)$ lies on line ℓ_8
$404 : P_{88470} = (21, 37, 20, 1)$ lies on line ℓ_9
$405 : P_{89174} = (21, 48, 20, 1)$ lies on line ℓ_7
$406 : P_{90709} = (20, 8, 21, 1)$ lies on line ℓ_7
$407 : P_{91521} = (0, 21, 21, 1)$ lies on line ℓ_5
$408 : P_{91989} = (20, 28, 21, 1)$ lies on line ℓ_9
$409 : P_{92566} = (21, 37, 21, 1)$ lies on line ℓ_8
$410 : P_{93270} = (21, 48, 21, 1)$ lies on line ℓ_6
$411 : P_{95255} = (22, 15, 22, 1)$ lies on line ℓ_8
$412 : P_{95681} = (0, 22, 22, 1)$ lies on line ℓ_5
$413 : P_{95895} = (22, 25, 22, 1)$ lies on line ℓ_6
$414 : P_{96408} = (23, 33, 22, 1)$ lies on line ℓ_7
$415 : P_{97752} = (23, 54, 22, 1)$ lies on line ℓ_9
$416 : P_{99351} = (22, 15, 23, 1)$ lies on line ℓ_9
$417 : P_{99841} = (0, 23, 23, 1)$ lies on line ℓ_5
$418 : P_{99991} = (22, 25, 23, 1)$ lies on line ℓ_7
$419 : P_{100504} = (23, 33, 23, 1)$ lies on line ℓ_6
$420 : P_{101848} = (23, 54, 23, 1)$ lies on line ℓ_8
$421 : P_{103449} = (24, 15, 24, 1)$ lies on line ℓ_6
$422 : P_{103961} = (24, 23, 24, 1)$ lies on line ℓ_8
$423 : P_{104001} = (0, 24, 24, 1)$ lies on line ℓ_5
$424 : P_{105434} = (25, 46, 24, 1)$ lies on line ℓ_9
$425 : P_{106010} = (25, 55, 24, 1)$ lies on line ℓ_7
$426 : P_{107545} = (24, 15, 25, 1)$ lies on line ℓ_7
$427 : P_{108057} = (24, 23, 25, 1)$ lies on line ℓ_9
$428 : P_{108161} = (0, 25, 25, 1)$ lies on line ℓ_5
$429 : P_{109530} = (25, 46, 25, 1)$ lies on line ℓ_8
$430 : P_{110106} = (25, 55, 25, 1)$ lies on line ℓ_6
$431 : P_{110939} = (26, 4, 26, 1)$ lies on line ℓ_8

$432: P_{112321} = (0, 26, 26, 1)$ lies on line ℓ_5
$433: P_{112603} = (26, 30, 26, 1)$ lies on line ℓ_6
$434: P_{113116} = (27, 38, 26, 1)$ lies on line ℓ_7
$435: P_{114588} = (27, 61, 26, 1)$ lies on line ℓ_9
$436: P_{115035} = (26, 4, 27, 1)$ lies on line ℓ_9
$437: P_{116481} = (0, 27, 27, 1)$ lies on line ℓ_5
$438: P_{116699} = (26, 30, 27, 1)$ lies on line ℓ_7
$439: P_{117212} = (27, 38, 27, 1)$ lies on line ℓ_6
$440: P_{118684} = (27, 61, 27, 1)$ lies on line ℓ_8
$441: P_{119390} = (29, 8, 28, 1)$ lies on line ℓ_9
$442: P_{120222} = (29, 21, 28, 1)$ lies on line ℓ_7
$443: P_{120641} = (0, 28, 28, 1)$ lies on line ℓ_5
$444: P_{121757} = (28, 45, 28, 1)$ lies on line ℓ_6
$445: P_{122013} = (28, 49, 28, 1)$ lies on line ℓ_8
$446: P_{123486} = (29, 8, 29, 1)$ lies on line ℓ_8
$447: P_{124318} = (29, 21, 29, 1)$ lies on line ℓ_6
$448: P_{124801} = (0, 29, 29, 1)$ lies on line ℓ_5
$449: P_{125853} = (28, 45, 29, 1)$ lies on line ℓ_7
$450: P_{126109} = (28, 49, 29, 1)$ lies on line ℓ_9
$451: P_{127328} = (31, 4, 30, 1)$ lies on line ℓ_7
$452: P_{128800} = (31, 27, 30, 1)$ lies on line ℓ_9
$453: P_{128961} = (0, 30, 30, 1)$ lies on line ℓ_5
$454: P_{129247} = (30, 34, 30, 1)$ lies on line ℓ_8
$455: P_{130911} = (30, 60, 30, 1)$ lies on line ℓ_6
$456: P_{131424} = (31, 4, 31, 1)$ lies on line ℓ_6
$457: P_{132896} = (31, 27, 31, 1)$ lies on line ℓ_8
$458: P_{133121} = (0, 31, 31, 1)$ lies on line ℓ_5
$459: P_{133343} = (30, 34, 31, 1)$ lies on line ℓ_9
$460: P_{135007} = (30, 60, 31, 1)$ lies on line ℓ_7
$461: P_{136162} = (33, 14, 32, 1)$ lies on line ℓ_7
$462: P_{136673} = (32, 22, 32, 1)$ lies on line ℓ_8
$463: P_{137281} = (0, 32, 32, 1)$ lies on line ℓ_5
$464: P_{138274} = (33, 47, 32, 1)$ lies on line ℓ_9
$465: P_{138721} = (32, 54, 32, 1)$ lies on line ℓ_6
$466: P_{140258} = (33, 14, 33, 1)$ lies on line ℓ_6
$467: P_{140769} = (32, 22, 33, 1)$ lies on line ℓ_9
$468: P_{141441} = (0, 33, 33, 1)$ lies on line ℓ_5
$469: P_{142370} = (33, 47, 33, 1)$ lies on line ℓ_8
$470: P_{142817} = (32, 54, 33, 1)$ lies on line ℓ_7
$471: P_{143779} = (34, 5, 34, 1)$ lies on line ℓ_8
$472: P_{145444} = (35, 31, 34, 1)$ lies on line ℓ_7
$473: P_{145601} = (0, 34, 34, 1)$ lies on line ℓ_5
$474: P_{145955} = (34, 39, 34, 1)$ lies on line ℓ_6
$475: P_{147300} = (35, 60, 34, 1)$ lies on line ℓ_9
$476: P_{147875} = (34, 5, 35, 1)$ lies on line ℓ_9
$477: P_{149540} = (35, 31, 35, 1)$ lies on line ℓ_6
$478: P_{149761} = (0, 35, 35, 1)$ lies on line ℓ_5
$479: P_{150051} = (34, 39, 35, 1)$ lies on line ℓ_7
$480: P_{151396} = (35, 60, 35, 1)$ lies on line ℓ_8
$481: P_{152230} = (37, 9, 36, 1)$ lies on line ℓ_9
$482: P_{152933} = (36, 20, 36, 1)$ lies on line ℓ_6
$483: P_{153921} = (0, 36, 36, 1)$ lies on line ℓ_5
$484: P_{154470} = (37, 44, 36, 1)$ lies on line ℓ_7
$485: P_{154725} = (36, 48, 36, 1)$ lies on line ℓ_8

$486: P_{156326} = (37, 9, 37, 1)$ lies on line ℓ_8
$487: P_{157029} = (36, 20, 37, 1)$ lies on line ℓ_7
$488: P_{158081} = (0, 37, 37, 1)$ lies on line ℓ_5
$489: P_{158566} = (37, 44, 37, 1)$ lies on line ℓ_6
$490: P_{158821} = (36, 48, 37, 1)$ lies on line ℓ_9
$491: P_{160167} = (38, 5, 38, 1)$ lies on line ℓ_6
$492: P_{161512} = (39, 26, 38, 1)$ lies on line ℓ_9
$493: P_{162087} = (38, 35, 38, 1)$ lies on line ℓ_8
$494: P_{162241} = (0, 38, 38, 1)$ lies on line ℓ_5
$495: P_{163752} = (39, 61, 38, 1)$ lies on line ℓ_7
$496: P_{164263} = (38, 5, 39, 1)$ lies on line ℓ_7
$497: P_{165608} = (39, 26, 39, 1)$ lies on line ℓ_8
$498: P_{166183} = (38, 35, 39, 1)$ lies on line ℓ_9
$499: P_{166401} = (0, 39, 39, 1)$ lies on line ℓ_5
$500: P_{167848} = (39, 61, 39, 1)$ lies on line ℓ_6
$501: P_{168170} = (41, 2, 40, 1)$ lies on line ℓ_9
$502: P_{169257} = (40, 19, 40, 1)$ lies on line ℓ_6
$503: P_{170561} = (0, 40, 40, 1)$ lies on line ℓ_5
$504: P_{170794} = (41, 43, 40, 1)$ lies on line ℓ_7
$505: P_{171817} = (40, 59, 40, 1)$ lies on line ℓ_8
$506: P_{172266} = (41, 2, 41, 1)$ lies on line ℓ_8
$507: P_{173353} = (40, 19, 41, 1)$ lies on line ℓ_7
$508: P_{174721} = (0, 41, 41, 1)$ lies on line ℓ_5
$509: P_{174890} = (41, 43, 41, 1)$ lies on line ℓ_6
$510: P_{175913} = (40, 59, 41, 1)$ lies on line ℓ_9
$511: P_{176363} = (42, 2, 42, 1)$ lies on line ℓ_6
$512: P_{177324} = (43, 17, 42, 1)$ lies on line ℓ_9
$513: P_{178795} = (42, 40, 42, 1)$ lies on line ℓ_8
$514: P_{178881} = (0, 42, 42, 1)$ lies on line ℓ_5
$515: P_{179948} = (43, 58, 42, 1)$ lies on line ℓ_7
$516: P_{180459} = (42, 2, 43, 1)$ lies on line ℓ_7
$517: P_{181420} = (43, 17, 43, 1)$ lies on line ℓ_8
$518: P_{182891} = (42, 40, 43, 1)$ lies on line ℓ_9
$519: P_{183041} = (0, 43, 43, 1)$ lies on line ℓ_5
$520: P_{184044} = (43, 58, 43, 1)$ lies on line ℓ_6
$521: P_{185006} = (45, 9, 44, 1)$ lies on line ℓ_7
$522: P_{186285} = (44, 29, 44, 1)$ lies on line ℓ_8
$523: P_{186734} = (45, 36, 44, 1)$ lies on line ℓ_9
$524: P_{187201} = (0, 44, 44, 1)$ lies on line ℓ_5
$525: P_{187565} = (44, 49, 44, 1)$ lies on line ℓ_6
$526: P_{189102} = (45, 9, 45, 1)$ lies on line ℓ_6
$527: P_{190381} = (44, 29, 45, 1)$ lies on line ℓ_9
$528: P_{190830} = (45, 36, 45, 1)$ lies on line ℓ_8
$529: P_{191361} = (0, 45, 45, 1)$ lies on line ℓ_5
$530: P_{191661} = (44, 49, 45, 1)$ lies on line ℓ_7
$531: P_{193519} = (46, 14, 46, 1)$ lies on line ℓ_8
$532: P_{194160} = (47, 24, 46, 1)$ lies on line ℓ_7
$533: P_{194671} = (46, 32, 46, 1)$ lies on line ℓ_6
$534: P_{195521} = (0, 46, 46, 1)$ lies on line ℓ_5
$535: P_{196144} = (47, 55, 46, 1)$ lies on line ℓ_9
$536: P_{197615} = (46, 14, 47, 1)$ lies on line ℓ_9
$537: P_{198256} = (47, 24, 47, 1)$ lies on line ℓ_6
$538: P_{198767} = (46, 32, 47, 1)$ lies on line ℓ_7
$539: P_{199681} = (0, 47, 47, 1)$ lies on line ℓ_5

540 : $P_{200240} = (47, 55, 47, 1)$ lies on line ℓ_8
541 : $P_{202098} = (49, 20, 48, 1)$ lies on line ℓ_9
542 : $P_{202673} = (48, 29, 48, 1)$ lies on line ℓ_6
543 : $P_{203186} = (49, 37, 48, 1)$ lies on line ℓ_7
544 : $P_{203697} = (48, 45, 48, 1)$ lies on line ℓ_8
545 : $P_{203841} = (0, 48, 48, 1)$ lies on line ℓ_5
546 : $P_{206194} = (49, 20, 49, 1)$ lies on line ℓ_8
547 : $P_{206769} = (48, 29, 49, 1)$ lies on line ℓ_7
548 : $P_{207282} = (49, 37, 49, 1)$ lies on line ℓ_6
549 : $P_{207793} = (48, 45, 49, 1)$ lies on line ℓ_9
550 : $P_{208001} = (0, 49, 49, 1)$ lies on line ℓ_5
551 : $P_{209460} = (51, 7, 50, 1)$ lies on line ℓ_9
552 : $P_{209779} = (50, 12, 50, 1)$ lies on line ℓ_6
553 : $P_{212161} = (0, 50, 50, 1)$ lies on line ℓ_5
554 : $P_{212340} = (51, 52, 50, 1)$ lies on line ℓ_7
555 : $P_{212979} = (50, 62, 50, 1)$ lies on line ℓ_8
556 : $P_{213556} = (51, 7, 51, 1)$ lies on line ℓ_8
557 : $P_{213875} = (50, 12, 51, 1)$ lies on line ℓ_7
558 : $P_{216321} = (0, 51, 51, 1)$ lies on line ℓ_5
559 : $P_{216436} = (51, 52, 51, 1)$ lies on line ℓ_6
560 : $P_{217075} = (50, 62, 51, 1)$ lies on line ℓ_9
561 : $P_{217654} = (53, 7, 52, 1)$ lies on line ℓ_7
562 : $P_{217909} = (52, 11, 52, 1)$ lies on line ℓ_8
563 : $P_{220406} = (53, 50, 52, 1)$ lies on line ℓ_9
564 : $P_{220481} = (0, 52, 52, 1)$ lies on line ℓ_5
565 : $P_{221237} = (52, 63, 52, 1)$ lies on line ℓ_6
566 : $P_{221750} = (53, 7, 53, 1)$ lies on line ℓ_6
567 : $P_{222005} = (52, 11, 53, 1)$ lies on line ℓ_9
568 : $P_{224502} = (53, 50, 53, 1)$ lies on line ℓ_8
569 : $P_{224641} = (0, 53, 53, 1)$ lies on line ℓ_5
570 : $P_{225333} = (52, 63, 53, 1)$ lies on line ℓ_7
571 : $P_{226808} = (55, 22, 54, 1)$ lies on line ℓ_7
572 : $P_{226935} = (54, 24, 54, 1)$ lies on line ℓ_8
573 : $P_{227512} = (55, 33, 54, 1)$ lies on line ℓ_9
574 : $P_{228343} = (54, 46, 54, 1)$ lies on line ℓ_6
575 : $P_{228801} = (0, 54, 54, 1)$ lies on line ℓ_5
576 : $P_{230904} = (55, 22, 55, 1)$ lies on line ℓ_6
577 : $P_{231031} = (54, 24, 55, 1)$ lies on line ℓ_9
578 : $P_{231608} = (55, 33, 55, 1)$ lies on line ℓ_8
579 : $P_{232439} = (54, 46, 55, 1)$ lies on line ℓ_7
580 : $P_{232961} = (0, 55, 55, 1)$ lies on line ℓ_5

581 : $P_{233593} = (56, 0, 56, 1)$ lies on line ℓ_8
582 : $P_{233594} = (57, 0, 56, 1)$ lies on line ℓ_7
583 : $P_{237121} = (0, 56, 56, 1)$ lies on line ℓ_5
584 : $P_{237177} = (56, 56, 56, 1)$ lies on line ℓ_6
585 : $P_{237242} = (57, 57, 56, 1)$ lies on line ℓ_9
586 : $P_{237689} = (56, 0, 57, 1)$ lies on line ℓ_9
587 : $P_{237690} = (57, 0, 57, 1)$ lies on line ℓ_6
588 : $P_{241273} = (56, 56, 57, 1)$ lies on line ℓ_7
589 : $P_{241281} = (0, 57, 57, 1)$ lies on line ℓ_5
590 : $P_{241338} = (57, 57, 57, 1)$ lies on line ℓ_8
591 : $P_{242876} = (59, 17, 58, 1)$ lies on line ℓ_7
592 : $P_{243003} = (58, 19, 58, 1)$ lies on line ℓ_8
593 : $P_{244411} = (58, 41, 58, 1)$ lies on line ℓ_6
594 : $P_{244476} = (59, 42, 58, 1)$ lies on line ℓ_9
595 : $P_{245441} = (0, 58, 58, 1)$ lies on line ℓ_5
596 : $P_{246972} = (59, 17, 59, 1)$ lies on line ℓ_6
597 : $P_{247099} = (58, 19, 59, 1)$ lies on line ℓ_9
598 : $P_{248507} = (58, 41, 59, 1)$ lies on line ℓ_7
599 : $P_{248572} = (59, 42, 59, 1)$ lies on line ℓ_8
600 : $P_{249601} = (0, 59, 59, 1)$ lies on line ℓ_5
601 : $P_{251645} = (60, 26, 60, 1)$ lies on line ℓ_6
602 : $P_{251966} = (61, 31, 60, 1)$ lies on line ℓ_9
603 : $P_{252158} = (61, 34, 60, 1)$ lies on line ℓ_7
604 : $P_{252413} = (60, 38, 60, 1)$ lies on line ℓ_8
605 : $P_{253761} = (0, 60, 60, 1)$ lies on line ℓ_5
606 : $P_{255741} = (60, 26, 61, 1)$ lies on line ℓ_7
607 : $P_{256062} = (61, 31, 61, 1)$ lies on line ℓ_8
608 : $P_{256254} = (61, 34, 61, 1)$ lies on line ℓ_6
609 : $P_{256509} = (60, 38, 61, 1)$ lies on line ℓ_9
610 : $P_{257921} = (0, 61, 61, 1)$ lies on line ℓ_5
611 : $P_{258879} = (62, 11, 62, 1)$ lies on line ℓ_6
612 : $P_{258944} = (63, 12, 62, 1)$ lies on line ℓ_9
613 : $P_{261440} = (63, 51, 62, 1)$ lies on line ℓ_7
614 : $P_{261567} = (62, 53, 62, 1)$ lies on line ℓ_8
615 : $P_{262081} = (0, 62, 62, 1)$ lies on line ℓ_5
616 : $P_{262975} = (62, 11, 63, 1)$ lies on line ℓ_7
617 : $P_{263040} = (63, 12, 63, 1)$ lies on line ℓ_8
618 : $P_{265536} = (63, 51, 63, 1)$ lies on line ℓ_6
619 : $P_{265663} = (62, 53, 63, 1)$ lies on line ℓ_9
620 : $P_{266241} = (0, 63, 63, 1)$ lies on line ℓ_5

The single points on the surface are:

Points on surface but on no line

The surface has 3720 points not on any line:
Too many to print.

Line Intersection Graph

```
  │0 1 2 3 4 5 6 7 8 9
──┼───────────────────
0 │0 1 1 1 1 0 0 0 0 0
1 │1 0 1 0 0 1 1 0 1 0
2 │1 1 0 0 0 0 0 1 0 1
3 │1 0 0 0 1 1 0 1 1 1
4 │1 0 0 1 0 1 1 1 0 1
5 │0 1 0 1 1 0 0 1 0 1
6 │0 1 0 0 1 0 0 1 1 0
7 │0 0 1 1 1 1 1 0 0 1
8 │0 1 0 1 0 0 1 0 0 1
9 │0 0 1 1 1 1 0 1 1 0
```

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4
in point	P_1	P_1	P_{60}	P_{61}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_5	ℓ_6	ℓ_8
in point	P_1	P_1	P_3	P_{4226}	P_{4226}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_7	ℓ_9
in point	P_1	P_1	P_{7811}	P_{7747}

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_7	ℓ_8	ℓ_9
in point	P_{60}	P_{8322}	P_{8322}	P_{8322}	P_{11842}	P_{8322}

Line 4 intersects

Line	ℓ_0	ℓ_3	ℓ_5	ℓ_6	ℓ_7	ℓ_9
in point	P_{61}	P_{8322}	P_{8322}	P_{11906}	P_{8322}	P_{8322}

Line 5 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_7	ℓ_9
in point	P_3	P_{8322}	P_{8322}	P_{8322}	P_{8322}

Line 6 intersects

Line	ℓ_1	ℓ_4	ℓ_7	ℓ_8
in point	P_{4226}	P_{11906}	P_{3652}	P_{4226}

Line 7 intersects

Line	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_9
in point	P_{7811}	P_{8322}	P_{8322}	P_{8322}	P_{3652}	P_{8322}

Line 8 intersects

Line	ℓ_1	ℓ_3	ℓ_6	ℓ_9
in point	P_{4226}	P_{11842}	P_{4226}	P_{3716}

Line 9 intersects

Line	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_7	ℓ_8
in point	P_{7747}	P_{8322}	P_{8322}	P_{8322}	P_{8322}	P_{3716}

The surface has 4353 points:
Too many to print.