Rank-65546 over GF(4)

The equation

The equation of the surface is :

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

(1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over $GF(4)$ is 1431655790

General information

Number of lines	60
Number of points	49
Number of singular points	13
Number of Eckardt points	0
Number of double points	0
Number of single points	0
Number of points off lines	0
Number of Hesse planes	0
Number of axes	0
Type of points on lines	5^{60}
Type of lines on points	$12, 9^{12}, 5^{36}$

Singular Points

The surface has 13 singular points:

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

$1: P_4 = \mathbf{P}(1,1,1,1) = \mathbf{P}(1,1,1,1)$

$2: P_{12} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0)$

$3: P_{18} = \mathbf{P}(\omega^2,\omega,1,0) = \mathbf{P}(3,2,1,0)$

$4: P_{21} = \mathbf{P}(\omega,\omega^2,1,0) = \mathbf{P}(2,3,1,0)$

$5: P_{48} = \mathbf{P}(\omega^2,\omega,1,1) = \mathbf{P}(3,2,1,1)$

$6: P_{51} = \mathbf{P}(\omega,\omega^2,1,1) = \mathbf{P}(2,3,1,1)$

$7: P_{60} = \mathbf{P}(\omega^2,1,\omega,1) = \mathbf{P}(3,1,2,1)$

$8: P_{63} = \mathbf{P}(\omega,\omega,\omega,1) = \mathbf{P}(2,2,2,1)$

$9: P_{66} = \mathbf{P}(1,\omega^2,\omega,1) = \mathbf{P}(1,3,2,1)$

$10: P_{75} = \mathbf{P}(\omega,1,\omega^2,1) = \mathbf{P}(2,1,3,1)$

$11: P_{78} = \mathbf{P}(1,\omega,\omega^2,1) = \mathbf{P}(1,2,3,1)$

$12: P_{84} = \mathbf{P}(\omega^2,\omega^2,\omega^2,1) = \mathbf{P}(3,3,3,1)$

The 60 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{22} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{22} = \mathbf{Pl}(1,0,1,0,0,1)_{109}$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & \omega & 0 \\ 0 & 1 & \omega^2 & 0 \end{bmatrix}_{45} = \begin{bmatrix} 1 & 0 & 2 & 0 \\ 0 & 1 & 3 & 0 \end{bmatrix}_{45} = \mathbf{Pl}(3,0,2,0,0,1)_{118}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & \omega^2 & 0 \\ 0 & 1 & \omega & 0 \end{bmatrix}_{65} = \begin{bmatrix} 1 & 0 & 3 & 0 \\ 0 & 1 & 2 & 0 \end{bmatrix}_{65} = \mathbf{Pl}(2,0,3,0,0,1)_{124}$$

$$\ell_3 = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{41} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{41} = \mathbf{Pl}(0,0,0,1,1,0)_{53}$$

$$\ell_4 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{110} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{110} = \mathbf{Pl}(1,0,1,1,1,1)_{199}$$

$$\ell_5 = \begin{bmatrix} 1 & 0 & 1 & \omega^2 \\ 0 & 1 & 1 & \omega^2 \end{bmatrix}_{286} = \begin{bmatrix} 1 & 0 & 1 & 3 \\ 0 & 1 & 1 & 3 \end{bmatrix}_{286} = \mathbf{Pl}(2,0,2,3,3,1)_{327}$$

$$\ell_6 = \begin{bmatrix} 1 & 0 & 1 & \omega \\ 0 & 1 & 1 & \omega \end{bmatrix}_{198} = \begin{bmatrix} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 2 \end{bmatrix}_{198} = \mathbf{Pl}(3,0,3,2,2,1)_{275}$$

$$\ell_7 = \begin{bmatrix} 1 & \omega^2 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{83} = \begin{bmatrix} 1 & 3 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{83} = \mathbf{Pl}(0,0,0,3,1,0)_{67}$$

$$\ell_8 = \begin{bmatrix} 1 & 0 & \omega & \omega \\ 0 & 1 & \omega^2 & \omega^2 \end{bmatrix}_{225} = \begin{bmatrix} 1 & 0 & 2 & 2 \\ 0 & 1 & 3 & 3 \end{bmatrix}_{225} = \mathbf{Pl}(2,0,1,1,2,1)_{260}$$

$$\ell_9 = \begin{bmatrix} 1 & 0 & \omega & 1 \\ 0 & 1 & \omega^2 & \omega \end{bmatrix}_{137} = \begin{bmatrix} 1 & 0 & 2 & 1 \\ 0 & 1 & 3 & 2 \end{bmatrix}_{137} = \mathbf{Pl}(3,0,2,3,1,1)_{208}$$

$$\ell_{10} = \begin{bmatrix} 1 & 0 & \omega & \omega^2 \\ 0 & 1 & \omega^2 & 1 \end{bmatrix}_{301} = \begin{bmatrix} 1 & 0 & 2 & 3 \\ 0 & 1 & 3 & 1 \end{bmatrix}_{301} = \mathbf{Pl}(1,0,3,2,3,1)_{333}$$

$$\ell_{11} = \begin{bmatrix} 1 & \omega & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{62} = \begin{bmatrix} 1 & 2 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{62} = \mathbf{Pl}(0,0,0,2,1,0)_{60}$$

$$\ell_{12} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega^2 \\ 0 & 1 & \omega & \omega \end{bmatrix}_{325} = \begin{bmatrix} 1 & 0 & 3 & 3 \\ 0 & 1 & 2 & 2 \end{bmatrix}_{325} = \mathbf{Pl}(3,0,1,1,3,1)_{321}$$

$$\ell_{13} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega \\ 0 & 1 & \omega & 1 \end{bmatrix}_{237} = \begin{bmatrix} 1 & 0 & 3 & 2 \\ 0 & 1 & 2 & 1 \end{bmatrix}_{237} = \mathbf{Pl}(1,0,2,3,2,1)_{266}$$

$$\ell_{14} = \begin{bmatrix} 1 & 0 & \omega^2 & 1 \\ 0 & 1 & \omega & \omega^2 \end{bmatrix}_{161} = \begin{bmatrix} 1 & 0 & 3 & 1 \\ 0 & 1 & 2 & 3 \end{bmatrix}_{161} = \mathbf{Pl}(2,0,3,2,1,1)_{214}$$

$$\ell_{15} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{104} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{104} = \mathbf{Pl}(0,1,0,0,1,0)_{29}$$

$$\ell_{16} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{26} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{26} = \mathbf{Pl}(1,1,1,0,1,1)_{180}$$

$$\ell_{17} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & \omega^2 \end{bmatrix}_{34} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 3 \end{bmatrix}_{34} = \mathbf{Pl}(2,3,2,0,3,1)_{304}$$

$$\ell_{18} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & \omega \end{bmatrix}_{30} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 2 \end{bmatrix}_{30} = \mathbf{Pl}(3,2,3,0,2,1)_{248}$$

$$\ell_{19} = \begin{bmatrix} 1 & 0 & \omega^2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{272} = \begin{bmatrix} 1 & 0 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{272} = \mathbf{Pl}(0,3,0,0,1,0)_{31}$$

$$\ell_{20} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & 0 \\ 0 & 1 & \omega & 1 \end{array} \right]_{69} = \left[\begin{array}{cccc} 1 & 0 & 3 & 0 \\ 0 & 1 & 2 & 1 \end{array} \right]_{69} = \mathbf{Pl}(1,1,2,0,2,1)_{243}$$

$$\ell_{21} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & 0 \\ 0 & 1 & \omega & \omega^2 \end{array} \right]_{77} = \left[\begin{array}{cccc} 1 & 0 & 3 & 0 \\ 0 & 1 & 2 & 3 \end{array} \right]_{77} = \mathbf{Pl}(2,3,3,0,1,1)_{187}$$

$$\ell_{22} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & 0 \\ 0 & 1 & \omega & \omega \end{array} \right]_{73} = \left[\begin{array}{cccc} 1 & 0 & 3 & 0 \\ 0 & 1 & 2 & 2 \end{array} \right]_{73} = \mathbf{Pl}(3,2,1,0,3,1)_{302}$$

$$\ell_{23} = \left[\begin{array}{cccc} 1 & 0 & \omega & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{188} = \left[\begin{array}{cccc} 1 & 0 & 2 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{188} = \mathbf{Pl}(0,2,0,0,1,0)_{30}$$

$$\ell_{24} = \left[\begin{array}{cccc} 1 & 0 & \omega & 0 \\ 0 & 1 & \omega^2 & 1 \end{array} \right]_{49} = \left[\begin{array}{cccc} 1 & 0 & 2 & 0 \\ 0 & 1 & 3 & 1 \end{array} \right]_{49} = \mathbf{Pl}(1,1,3,0,3,1)_{306}$$

$$\ell_{25} = \left[\begin{array}{cccc} 1 & 0 & \omega & 0 \\ 0 & 1 & \omega^2 & \omega^2 \end{array} \right]_{57} = \left[\begin{array}{cccc} 1 & 0 & 2 & 0 \\ 0 & 1 & 3 & 3 \end{array} \right]_{57} = \mathbf{Pl}(2,3,1,0,2,1)_{241}$$

$$\ell_{26} = \left[\begin{array}{cccc} 1 & 0 & \omega & 0 \\ 0 & 1 & \omega^2 & \omega \end{array} \right]_{53} = \left[\begin{array}{cccc} 1 & 0 & 2 & 0 \\ 0 & 1 & 3 & 2 \end{array} \right]_{53} = \mathbf{Pl}(3,2,2,0,1,1)_{185}$$

$$\ell_{27} = \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{345} = \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{345} = \mathbf{Pl}(0,1,0,1,0,0)_{13}$$

$$\ell_{28} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{array} \right]_{106} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{array} \right]_{106} = \mathbf{Pl}(1,1,1,1,0,1)_{150}$$

$$\ell_{29} = \left[\begin{array}{cccc} 1 & 0 & 1 & \omega^2 \\ 0 & 1 & 1 & 0 \end{array} \right]_{274} = \left[\begin{array}{cccc} 1 & 0 & 1 & 3 \\ 0 & 1 & 1 & 0 \end{array} \right]_{274} = \mathbf{Pl}(2,3,1,3,0,1)_{169}$$

$$\ell_{30} = \left[\begin{array}{cccc} 1 & 0 & 1 & \omega \\ 0 & 1 & 1 & 0 \end{array} \right]_{190} = \left[\begin{array}{cccc} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 0 \end{array} \right]_{190} = \mathbf{Pl}(3,2,1,2,0,1)_{161}$$

$$\ell_{31} = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{125} = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{125} = \mathbf{Pl}(0,1,0,1,1,0)_{57}$$

$$\ell_{32} = \left[\begin{array}{cccc} 1 & 0 & \omega & \omega \\ 0 & 1 & \omega^2 & \omega \end{array} \right]_{221} = \left[\begin{array}{cccc} 1 & 0 & 2 & 2 \\ 0 & 1 & 3 & 2 \end{array} \right]_{221} = \mathbf{Pl}(1,1,1,1,1,1)_{219}$$

$$\ell_{33} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & \omega^2 \\ 0 & 1 & \omega & \omega^2 \end{array} \right]_{329} = \left[\begin{array}{cccc} 1 & 0 & 3 & 3 \\ 0 & 1 & 2 & 3 \end{array} \right]_{329} = \mathbf{Pl}(1,1,1,1,1,1)_{222}$$

$$\ell_{34} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & \omega \\ 0 & 1 & \omega & \omega \end{array} \right]_{241} = \left[\begin{array}{cccc} 1 & 0 & 3 & 2 \\ 0 & 1 & 2 & 2 \end{array} \right]_{241} = \mathbf{Pl}(2,3,2,3,3,1)_{349}$$

$$\ell_{35} = \left[\begin{array}{cccc} 1 & 0 & \omega & 1 \\ 0 & 1 & \omega^2 & 1 \end{array} \right]_{133} = \left[\begin{array}{cccc} 1 & 0 & 2 & 1 \\ 0 & 1 & 3 & 1 \end{array} \right]_{133} = \mathbf{Pl}(2,3,2,3,3,1)_{346}$$

$$\ell_{36} = \left[\begin{array}{cccc} 1 & 0 & \omega & \omega^2 \\ 0 & 1 & \omega^2 & \omega^2 \end{array} \right]_{309} = \left[\begin{array}{cccc} 1 & 0 & 2 & 3 \\ 0 & 1 & 3 & 3 \end{array} \right]_{309} = \mathbf{Pl}(3,2,3,2,2,1)_{293}$$

$$\ell_{37} = \left[\begin{array}{cccc} 1 & 0 & \omega^2 & 1 \\ 0 & 1 & \omega & 1 \end{array} \right]_{153} = \left[\begin{array}{cccc} 1 & 0 & 3 & 1 \\ 0 & 1 & 2 & 1 \end{array} \right]_{153} = \mathbf{Pl}(3,2,3,2,2,1)_{296}$$

$$\ell_{38} = \left[\begin{array}{cccc} 0 & 1 & \omega^2 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{355} = \left[\begin{array}{cccc} 0 & 1 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{355} = \mathbf{Pl}(0,3,0,1,0,0)_{15}$$

$$\ell_{39} = \left[\begin{array}{cccc} 1 & 0 & \omega & 1 \\ 0 & 1 & \omega^2 & 0 \end{array} \right]_{129} = \left[\begin{array}{cccc} 1 & 0 & 2 & 1 \\ 0 & 1 & 3 & 0 \end{array} \right]_{129} = \mathbf{Pl}(3,2,2,3,0,1)_{173}$$

$$\ell_{40} = \left[\begin{array}{cccc} 1 & 0 & \omega & \omega^2 \\ 0 & 1 & \omega^2 & 0 \end{array} \right]_{297} = \left[\begin{array}{cccc} 1 & 0 & 2 & 3 \\ 0 & 1 & 3 & 0 \end{array} \right]_{297} = \mathbf{Pl}(1,1,2,2,0,1)_{162}$$

$$\ell_{41} = \begin{bmatrix} 1 & 0 & \omega & \omega \\ 0 & 1 & \omega^2 & 0 \end{bmatrix}_{213} = \begin{bmatrix} 1 & 0 & 2 & 2 \\ 0 & 1 & 3 & 0 \end{bmatrix}_{213} = \mathbf{Pl}(2,3,2,1,0,1)_{154}$$

$$\ell_{42} = \begin{bmatrix} 1 & \omega^2 & \omega & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{251} = \begin{bmatrix} 1 & 3 & 2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{251} = \mathbf{Pl}(0,2,0,3,1,0)_{72}$$

$$\ell_{43} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega \\ 0 & 1 & \omega & \omega^2 \end{bmatrix}_{245} = \begin{bmatrix} 1 & 0 & 3 & 2 \\ 0 & 1 & 2 & 3 \end{bmatrix}_{245} = \mathbf{Pl}(3,2,2,3,1,1)_{227}$$

$$\ell_{44} = \begin{bmatrix} 1 & 0 & 1 & \omega \\ 0 & 1 & 1 & \omega^2 \end{bmatrix}_{202} = \begin{bmatrix} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 3 \end{bmatrix}_{202} = \mathbf{Pl}(1,1,3,2,3,1)_{354}$$

$$\ell_{45} = \begin{bmatrix} 1 & 0 & \omega^2 & 1 \\ 0 & 1 & \omega & \omega \end{bmatrix}_{157} = \begin{bmatrix} 1 & 0 & 3 & 1 \\ 0 & 1 & 2 & 2 \end{bmatrix}_{157} = \mathbf{Pl}(1,1,3,2,3,1)_{351}$$

$$\ell_{46} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega^2 \\ 0 & 1 & \omega & 1 \end{bmatrix}_{321} = \begin{bmatrix} 1 & 0 & 3 & 3 \\ 0 & 1 & 2 & 1 \end{bmatrix}_{321} = \mathbf{Pl}(2,3,1,1,2,1)_{280}$$

$$\ell_{47} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & \omega \end{bmatrix}_{114} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 2 \end{bmatrix}_{114} = \mathbf{Pl}(2,3,1,1,2,1)_{283}$$

$$\ell_{48} = \begin{bmatrix} 1 & 0 & 1 & \omega^2 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{278} = \begin{bmatrix} 1 & 0 & 1 & 3 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{278} = \mathbf{Pl}(3,2,2,3,1,1)_{230}$$

$$\ell_{49} = \begin{bmatrix} 0 & 1 & \omega & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{350} = \begin{bmatrix} 0 & 1 & 2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{350} = \mathbf{Pl}(0,2,0,1,0,0)_{14}$$

$$\ell_{50} = \begin{bmatrix} 1 & 0 & \omega^2 & 1 \\ 0 & 1 & \omega & 0 \end{bmatrix}_{149} = \begin{bmatrix} 1 & 0 & 3 & 1 \\ 0 & 1 & 2 & 0 \end{bmatrix}_{149} = \mathbf{Pl}(2,3,3,2,0,1)_{166}$$

$$\ell_{51} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega \\ 0 & 1 & \omega & 0 \end{bmatrix}_{233} = \begin{bmatrix} 1 & 0 & 3 & 2 \\ 0 & 1 & 2 & 0 \end{bmatrix}_{233} = \mathbf{Pl}(1,1,3,3,0,1)_{174}$$

$$\ell_{52} = \begin{bmatrix} 1 & 0 & \omega^2 & \omega^2 \\ 0 & 1 & \omega & 0 \end{bmatrix}_{317} = \begin{bmatrix} 1 & 0 & 3 & 3 \\ 0 & 1 & 2 & 0 \end{bmatrix}_{317} = \mathbf{Pl}(3,2,3,1,0,1)_{158}$$

$$\ell_{53} = \begin{bmatrix} 1 & \omega & \omega^2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{314} = \begin{bmatrix} 1 & 2 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{314} = \mathbf{Pl}(0,3,0,2,1,0)_{66}$$

$$\ell_{54} = \begin{bmatrix} 1 & 0 & \omega & \omega^2 \\ 0 & 1 & \omega^2 & \omega \end{bmatrix}_{305} = \begin{bmatrix} 1 & 0 & 2 & 3 \\ 0 & 1 & 3 & 2 \end{bmatrix}_{305} = \mathbf{Pl}(2,3,3,2,1,1)_{235}$$

$$\ell_{55} = \begin{bmatrix} 1 & 0 & 1 & \omega^2 \\ 0 & 1 & 1 & \omega \end{bmatrix}_{282} = \begin{bmatrix} 1 & 0 & 1 & 3 \\ 0 & 1 & 1 & 2 \end{bmatrix}_{282} = \mathbf{Pl}(1,1,2,3,2,1)_{285}$$

$$\ell_{56} = \begin{bmatrix} 1 & 0 & \omega & 1 \\ 0 & 1 & \omega^2 & \omega^2 \end{bmatrix}_{141} = \begin{bmatrix} 1 & 0 & 2 & 1 \\ 0 & 1 & 3 & 3 \end{bmatrix}_{141} = \mathbf{Pl}(1,1,2,3,2,1)_{288}$$

$$\ell_{57} = \begin{bmatrix} 1 & 0 & 1 & \omega \\ 0 & 1 & 1 & 1 \end{bmatrix}_{194} = \begin{bmatrix} 1 & 0 & 1 & 2 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{194} = \mathbf{Pl}(2,3,3,2,1,1)_{232}$$

$$\ell_{58} = \begin{bmatrix} 1 & 0 & \omega & \omega \\ 0 & 1 & \omega^2 & 1 \end{bmatrix}_{217} = \begin{bmatrix} 1 & 0 & 2 & 2 \\ 0 & 1 & 3 & 1 \end{bmatrix}_{217} = \mathbf{Pl}(3,2,1,1,3,1)_{344}$$

$$\ell_{59} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & \omega^2 \end{bmatrix}_{118} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 3 \end{bmatrix}_{118} = \mathbf{Pl}(3,2,1,1,3,1)_{341}$$

Rank of lines: (22, 45, 65, 41, 110, 286, 198, 83, 225, 137, 301, 62, 325, 237, 161, 104, 26, 34, 30, 272, 69, 77, 73, 188, 49, 57, 53, 345, 106, 274, 190, 125, 221, 329, 241, 133, 309, 153, 355, 129, 297, 213, 251, 245, 202, 157, 321, 114, 278, 350, ...194, 217, 118)

Rank of points on Klein quadric: (109, 118, 124, 53, 199, 327, 275, 67, 260, 208, 333, 60, 321, 266, 214, 29, 180, 304, 248, 31, 243, 187, 302, 30, 306, 241, 185, 13, 150, 169, 161, 57, 219, 222, 349, 346, 293, 296, 15, 173, 162, 154, 72, 227, 354, 351, 280, 283, 230, 14, ...232, 344, 341)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 0 single points:
The single points on the surface are:

The single points on the surface are:

Points on surface but on no line

The surface has 0 points not on any line:
The points on the surface but not on lines are:

Line Intersection Graph

```
    |0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
 ---+-----------------------------------------------------------------------------------------------------------------------------------
  0 |0 1 1 1 1 1 1 1 0 0 0  0  0  0  0  1  1  1  1  0  0  0  0  0  0  0  0  1  1  1  1  0  0  0  0  0  0  0  0  0  0  1  1  1  1  1  1  1
  1 |1 0 1 0 0 0 0 1 1 1 1  0  0  0  0  0  0  0  0  0  0  0  1  1  1  1  0  0  0  0  1  1  1  1  1  1  1  1  1  1  1  0  0  0  0  0  0  0
  2 |1 1 0 0 0 0 0 0 0 0 0  1  1  1  1  0  0  0  0  1  1  1  1  0  0  0  0  0  0  0  0  1  1  1  1  1  1  1  0  0  0  0  1  1  1  1  1  1
  3 |1 0 0 0 1 1 1 1 0 0 0  1  0  0  0  1  1  1  1  0  0  0  1  0  0  0  1  1  1  1  0  0  0  0  0  1  0  0  0  1  0  1  0  1  0  0  1
  4 |1 0 0 1 0 1 1 0 1 0 0  0  1  0  0  1  1  1  1  0  0  1  0  0  0  0  1  1  1  1  0  0  0  0  1  0  1  0  0  1  0  1  0  1  0  0  1
  5 |1 0 0 1 1 0 1 0 1 0 0  1  0  0  0  1  1  1  1  0  0  0  1  0  1  0  0  1  1  1  1  0  0  1  0  0  1  0  0  0  0  1  1  0  1  0  0  1
  6 |1 0 0 1 1 1 0 0 0 0 1  0  0  0  1  1  1  1  1  0  1  0  0  0  0  1  0  1  1  1  1  0  1  0  1  0  0  0  0  1  0  0  1  0  1  0  0  1
  7 |0 1 0 1 0 0 0 0 1 1 1  1  0  0  0  1  0  0  0  1  0  0  0  1  1  1  1  0  0  0  1  1  0  0  1  1  0  1  1  1  1  0  0  0  0
  8 |0 1 0 0 1 0 0 1 0 1 1  0  1  0  0  0  0  0  1  0  1  0  0  1  1  1  1  0  0  1  0  1  1  0  0  1  1  0  1  1  1  1  0  1  1  0  0  0
  9 |0 1 0 0 0 0 1 0 1 1 0  1  0  0  1  0  0  1  0  0  0  0  1  0  1  1  1  1  0  0  0  1  1  1  0  0  1  1  0  1  1  1  1  0  0  0  1  0  1
 10 |0 1 0 0 0 0 1 1 1 1 0  0  0  0  1  0  0  1  0  0  0  0  1  1  1  1  0  1  0  0  1  1  0  0  1  1  0  1  1  1  0  0  0  0  1  0
 11 |0 0 1 1 0 0 0 1 0 0 0  0  1  1  1  1  0  0  0  1  1  1  1  0  0  0  1  0  0  0  1  0  1  1  0  0  1  1  0  0  1  1  0  0  0  1  1  0  1  1  0
 12 |0 0 1 0 1 0 0 0 1 0 0  1  0  1  1  0  0  1  0  1  1  1  1  0  1  0  0  0  0  1  1  0  1  1  0  0  1  0  1  0  0  1  1  0  1  1  0
 13 |0 0 1 0 0 1 0 0 0 1 0  1  1  0  1  0  0  0  1  1  1  1  1  0  0  1  0  0  1  0  0  1  0  1  1  0  0  1  0  0  1  0  1  1  0  1  1  0
 14 |0 0 1 0 0 0 1 0 0 0 1  1  1  1  0  0  1  0  0  1  1  1  1  0  0  0  1  0  0  1  0  1  0  1  1  0  0  1  0  0  0  1  1  1  0  1  1  0
 15 |1 0 0 1 1 1 1 1 0 0 0  1  0  0  0  0  1  1  1  0  0  0  1  0  0  0  0  1  1  1  1  0  0  0  0  0  1  0  0  0  1  0  1  0  0  1
 16 |1 0 0 1 1 1 1 0 0 1 0  0  0  0  1  1  0  1  1  0  1  0  0  0  1  0  0  1  1  1  1  0  0  0  1  0  1  0  0  0  0  1  1  0  1  0  0  1
 17 |1 0 0 1 1 1 1 0 0 0 1  0  1  0  0  1  1  0  1  0  0  1  0  0  0  1  0  1  1  1  1  0  1  0  0  0  0  1  0  1  0  0  1  0  1  0  0  1
 18 |1 0 0 1 1 1 1 0 1 0 0  0  1  0  1  1  1  0  0  0  0  0  1  0  0  0  1  1  1  1  0  0  1  0  1  0  0  0  0  1  0  1  0  1  0  0  1
 19 |0 0 1 1 0 0 0 1 0 0 1  1  0  1  1  1  1  0  0  0  1  1  1  1  0  0  0  1  0  0  0  1  0  1  1  0  0  1  1  0  0  1  1  0  1  1  0
 20 |0 0 1 0 0 1 0 0 0 1 0  1  1  1  1  0  1  0  0  1  0  1  1  0  1  0  0  0  0  1  0  1  0  1  1  0  0  1  0  1  0  0  1  1  0  1  1  0
 21 |0 0 1 0 1 0 0 0 0 1 0  1  1  1  1  0  0  1  0  1  1  0  1  0  0  0  1  0  0  0  0  1  1  0  1  1  0  0  1  0  0  1  0  1  1  0  1  1  0
 22 |0 0 1 0 0 1 0 0 0 0 0  1  1  1  1  0  0  0  1  1  1  1  0  0  0  0  1  0  1  0  0  1  0  1  1  0  0  1  0  0  0  1  1  1  0  1  1  0
 23 |0 1 0 1 0 0 0 1 1 1 1  1  0  0  0  1  0  0  0  1  0  0  0  0  1  1  1  1  0  0  0  1  1  0  0  1  1  0  1  1  0  1  1  1  1  0  0  0  0
 24 |0 1 0 0 0 0 1 0 1 1 1  0  1  0  0  0  0  1  0  0  0  1  0  0  1  1  0  0  0  1  1  1  0  0  1  1  0  1  1  0  1  1  1  1  0  1  0  0  0  1
 25 |0 1 0 0 0 0 1 1 1 1 1  0  0  1  0  0  0  1  0  0  0  1  0  0  0  1  0  1  1  0  1  0  1  0  0  1  1  0  1  1  0  1  1  1  1  0  0  0  1  0  0
 26 |0 1 0 0 1 0 0 1 1 1 1  0  0  0  1  0  0  0  1  0  0  0  1  1  1  1  0  0  0  1  0  1  1  0  0  1  1  0  1  1  0  1  1  1  1  0  0  1  0  1  0
 27 |1 0 0 1 1 1 1 1 0 0 0  1  0  0  0  1  1  1  1  0  0  0  1  0  0  0  0  1  1  1  1  0  0  0  0  0  1  0  0  0  1  0  1  0  1  0  0  1
 28 |1 0 0 1 1 1 1 0 0 0 1  0  0  1  0  1  1  1  1  0  0  0  1  0  0  1  0  1  1  0  1  1  0  1  1  0  0  0  0  1  0  0  1  0  1  0  0  1
 29 |1 0 0 1 1 1 1 0 1 0 0  0  0  0  1  1  1  1  1  0  1  0  0  0  0  0  1  1  1  0  1  0  0  0  0  1  1  0  0  0  0  1  0  1  0  1  0  0  1
 30 |1 0 0 1 1 1 1 0 0 1 0  0  1  0  0  1  1  1  1  0  0  1  0  0  1  0  0  1  1  1  0  0  0  0  0  0  1  1  0  0  0  1  1  0  1  0  0  1
 31 |0 1 1 1 0 0 0 1 1 1 1  1  1  1  1  1  1  0  0  0  1  1  1  1  1  1  1  1  0  0  0  0  1  1  1  1  1  1  1  1  1  1  1  1  0  1  1  0
 32 |0 1 1 0 0 0 1 1 1 1 1  0  0  0  0  0  1  0  0  0  0  1  1  1  1  0  1  0  0  1  0  1  1  1  1  1  1  1  1  1  1  0  0  0  0  0
 33 |0 1 1 0 0 0 1 0 0 0 0  1  1  1  1  0  0  0  1  1  1  1  0  0  0  0  1  0  0  1  1  0  1  1  1  1  0  0  0  0  1  1  0  1  1  0
 34 |0 1 1 0 0 0 1 0 0 0 0  1  1  1  1  0  1  0  0  1  1  1  1  0  0  0  0  0  1  0  1  1  1  0  1  1  1  0  0  0  0  1  1  0  1  1  0
 35 |0 1 1 0 1 0 0 1 1 1 1  0  0  0  0  0  1  0  0  0  0  1  1  1  1  0  0  1  0  1  1  1  1  1  0  1  1  1  1  1  1  0  0  1  0  0  0
 36 |0 1 1 0 0 1 0 1 1 1 1  0  0  0  0  0  1  0  0  0  0  0  1  1  1  1  0  0  0  1  1  1  1  1  1  0  1  1  1  1  1  0  0  0  0  1
 37 |0 1 1 0 1 0 1 0 0 0 0  1  1  1  1  0  0  1  0  1  1  1  1  0  0  0  0  0  0  1  1  1  1  1  1  1  0  0  0  0  1  1  0  1  1  0
 38 |0 1 0 1 0 0 0 1 1 1 1  0  0  0  1  0  0  0  1  0  0  0  1  0  0  0  1  1  1  1  0  0  0  1  1  0  0  1  1  0  0  1  1  1  1  0  0  0  0
 39 |0 1 0 0 0 0 1 1 1 1 1  0  1  0  0  0  0  1  0  0  1  0  0  1  1  1  0  1  0  0  1  1  0  0  1  1  0  1  0  1  1  0  1  0  0  0  0
 40 |0 1 0 0 1 0 0 1 1 1 1  0  0  1  0  0  0  0  1  0  0  1  0  1  1  1  0  0  1  0  1  1  0  0  1  1  0  1  1  0  1  0  0  1  1  0  0
 41 |0 1 0 0 0 1 0 1 1 1 1  0  0  0  1  0  1  0  1  0  0  0  0  1  1  1  1  0  0  0  1  1  1  0  0  1  1  0  1  1  0  1  1  1  0  0  0  0  1  1
 42 |1 0 1 1 1 1 1 1 0 0 0  1  1  1  1  1  1  1  1  1  1  1  1  0  0  0  1  1  1  1  0  1  1  0  0  1  1  0  0  0  0  1  1  1  1
 43 |1 0 1 0 0 0 0 0 1 0 0  1  1  1  1  0  0  0  0  1  1  1  1  0  1  0  0  0  0  0  0  1  0  1  1  0  0  1  0  1  0  0  1  0  1  1  1  1
 44 |1 0 1 1 1 1 1 0 1 0 0  0  0  0  0  1  1  1  1  0  0  0  0  0  1  1  1  1  0  0  0  0  1  0  0  0  0  1  1  0  1  1  1  1
 45 |1 0 1 0 0 0 0 0 0 1 0  1  1  1  1  0  0  0  0  1  1  1  1  0  0  1  0  0  0  0  0  1  0  1  1  0  0  1  0  0  1  0  0  1  0  1  1  1  0  1  1
 46 |1 0 1 0 0 0 0 0 0 0 1  1  1  1  1  0  0  0  0  1  1  1  1  0  0  0  1  0  0  0  0  1  0  1  1  0  0  1  0  0  0  1  1  1  1  0  1
 47 |1 0 1 1 1 1 1 0 0 1 0  0  0  0  0  1  1  1  1  0  0  0  0  0  1  0  0  1  1  1  1  0  0  0  0  0  1  0  0  0  0  1  1  1  1  1  0
 48 |1 0 1 1 1 1 1 0 0 0 1  0  0  0  0  1  1  1  1  0  0  0  0  0  1  0  1  1  1  1  0  1  0  0  0  0  0  0  1  0  0  1  1  1  1  1  1
 49 |0 0 1 1 0 0 0 1 1 0 0  0  1  1  1  1  0  0  0  1  1  1  1  0  0  0  1  0  0  0  1  0  1  1  0  0  1  1  0  0  1  1  0  1  1  0
 50 |0 0 1 0 1 0 0 1 0 0 1  1  1  1  1  0  0  0  1  1  1  1  0  1  0  0  0  1  0  0  1  0  1  1  0  0  1  0  1  0  0  1  1  0  1  1  0
 51 |0 0 1 0 1 0 0 0 0 0 0  1  1  1  1  1  0  0  1  0  1  1  1  1  0  0  0  1  0  0  0  1  1  0  1  1  0  0  1  0  0  0  1  1  1  0  1  1  0
 52 |0 0 1 0 0 0 1 0 0 1 0  1  1  1  1  0  1  0  0  1  1  1  1  0  0  1  0  0  0  1  0  1  0  1  1  0  0  1  0  0  1  0  1  1  0  1  1  0
 53 |1 1 0 1 1 1 1 1 1 1 1  1  0  0  0  1  1  1  1  0  0  0  1  1  1  1  1  1  1  1  0  0  1  1  0  1  1  1  1  1  0  1  0  0  1
 54 |1 1 0 0 0 0 0 1 1 1 1  0  1  0  0  0  0  0  0  0  1  0  0  1  1  1  0  0  0  0  1  1  0  0  1  1  0  1  1  1  0  1  0  0  0  0
 55 |1 1 0 1 1 1 1 0 0 0 0  0  1  0  0  1  1  1  1  0  0  1  0  0  0  0  0  1  1  1  1  0  0  0  0  0  1  0  0  0  0  1  0  1  0  0  1
 56 |1 1 0 0 0 0 0 1 1 1 1  0  0  0  1  0  0  0  0  0  0  0  1  1  1  1  0  0  0  0  1  1  0  0  1  1  0  1  1  1  1  0  0  0  0  1  0
 57 |1 1 0 1 1 1 1 0 0 0 1  0  1  0  0  1  1  1  1  0  0  0  1  0  0  0  1  1  1  1  0  1  0  0  0  0  0  0  1  0  1  0  1  0  0
```

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{42}	ℓ_{43}	ℓ_{44}	ℓ_{45}	ℓ_{46}	ℓ_{47}	ℓ_{48}
in point	P_{21}	P_{18}	P_5	P_5	P_5	P_5	P_8	P_8	P_8	P_8	P_{11}	P_{11}	P_{11}	P_{11}	P_{18}	P_{18}	P_{18}	P_{18}	P_{18}	P_{18}	P_1

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{34}	ℓ_{35}	ℓ_{36}	ℓ_{37}	ℓ_{38}	ℓ_{39}	ℓ_{40}
in point	P_{21}	P_{12}	P_6	P_6	P_6	P_6	P_{10}	P_{10}	P_{10}	P_{10}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{15}	P_{15}	P_{15}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{34}	ℓ_{35}	ℓ_{36}	ℓ_{37}	ℓ_{42}	ℓ_{43}	ℓ_{44}	
in point	P_{18}	P_{12}	P_7	P_7	P_7	P_7	P_9	P_9	P_9	P_9	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{18}	P_{18}	P_{18}	P

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_{11}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{23}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{31}	ℓ_{38}	ℓ_{42}	ℓ_{44}	ℓ_{47}
in point	P_5	P_5	P_5	P_5	P_3	P_3	P_3	P_{27}	P_{32}	P_{37}	P_3	P_3	P_3	P_{27}	P_{32}	P_{37}	P_3	P_3	P_3	P_{27}	P_{32}

Line 4 intersects

Line	ℓ_0	ℓ_3	ℓ_5	ℓ_6	ℓ_8	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{21}	ℓ_{26}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{35}	ℓ_{37}	ℓ_{40}	ℓ_{42}
in point	P_5	P_5	P_5	P_5	P_{51}	P_{48}	P_{39}	P_{42}	P_{48}	P_{51}	P_{48}	P_{51}	P_{42}	P_{39}	P_{51}	P_{48}	P_{51}	P_{48}	P_{51}	P_{48}

Line 5 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_6	ℓ_9	ℓ_{13}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{22}	ℓ_{24}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{33}	ℓ_{36}	ℓ_{41}	ℓ_{42}
in point	P_5	P_5	P_5	P_5	P_{60}	P_{66}	P_{55}	P_{60}	P_{61}	P_{66}	P_{66}	P_{60}	P_{61}	P_{66}	P_{55}	P_{60}	P_{66}	P_{60}	P_{60}	P_{66}

Line 6 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_{10}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{20}	ℓ_{25}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{32}	ℓ_{34}	ℓ_{39}	ℓ_{42}
in point	P_5	P_5	P_5	P_5	P_{78}	P_{75}	P_{72}	P_{75}	P_{78}	P_{81}	P_{75}	P_{78}	P_{81}	P_{78}	P_{75}	P_{72}	P_{78}	P_{75}	P_{78}	P_{75}

Line 7 intersects

Line	ℓ_1	ℓ_3	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{15}	ℓ_{19}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{27}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	ℓ_{41}
in point	P_6	P_3	P_6	P_6	P_6	P_3	P_3	P_3	P_3	P_{28}	P_{33}	P_{35}	P_3	P_3	P_{28}	P_{33}	P_{35}	P_3	P_{35}	P_{28}	P_{33}

Line 8 intersects

Line	ℓ_1	ℓ_4	ℓ_7	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{18}	ℓ_{20}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{29}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	ℓ_{41}
in point	P_6	P_{51}	P_6	P_6	P_6	P_4	P_{51}	P_4	P_{41}	P_4	P_{45}	P_{51}	P_{51}	P_4	P_{41}	P_{51}	P_{45}	P_{45}	P_4	P_{51}	P_4

Line 9 intersects

Line	ℓ_1	ℓ_5	ℓ_7	ℓ_8	ℓ_{10}	ℓ_{13}	ℓ_{16}	ℓ_{21}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{30}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}
in point	P_6	P_{60}	P_6	P_6	P_6	P_{63}	P_{60}	P_{63}	P_{54}	P_{60}	P_{63}	P_{65}	P_{60}	P_{63}	P_{65}	P_{54}	P_{60}	P_{65}	P_{54}	P_{63}

Line 10 intersects

Line	ℓ_1	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{14}	ℓ_{17}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{28}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	
in point	P_6	P_{78}	P_6	P_6	P_6	P_{84}	P_{78}	P_{84}	P_{71}	P_{73}	P_{78}	P_{84}	P_{78}	P_{84}	P_{78}	P_{73}	P_{71}	P_{73}	P_{78}	P_{71}	

Line 11 intersects

Line	ℓ_2	ℓ_3	ℓ_7	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{23}	ℓ_{27}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{38}	ℓ_{42}	ℓ_{43}	ℓ_{45}
in point	P_7	P_3	P_3	P_7	P_7	P_7	P_3	P_3	P_{29}	P_{31}	P_{36}	P_3	P_3	P_3	P_{29}	P_{31}	P_{36}	P_3	P_3	P_{36}	P_{29}

Line 12 intersects

Line	ℓ_2	ℓ_4	ℓ_8	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{24}	ℓ_{30}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{39}	ℓ_{42}	ℓ_{43}	ℓ_{45}
in point	P_7	P_{48}	P_4	P_7	P_7	P_7	P_{48}	P_{40}	P_4	P_{48}	P_{49}	P_4	P_{48}	P_4	P_{40}	P_{49}	P_{48}	P_4	P_{48}	P_4	P_{49}

Line 13 intersects

Line	ℓ_2	ℓ_5	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{25}	ℓ_{28}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{40}	ℓ_{42}	ℓ_{43}
in point	P_7	P_{66}	P_{63}	P_7	P_7	P_7	P_{66}	P_{56}	P_{57}	P_{63}	P_{66}	P_{63}	P_{66}	P_{63}	P_{66}	P_{56}	P_{57}	P_{63}	P_{66}	P_{56}

Line 14 intersects

Line	ℓ_2	ℓ_6	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{16}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{26}	ℓ_{29}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{41}	ℓ_{42}	ℓ_{43}
in point	P_7	P_{75}	P_{84}	P_7	P_7	P_7	P_{75}	P_{70}	P_{75}	P_{77}	P_{84}	P_{84}	P_{75}	P_{84}	P_{77}	P_{75}	P_{70}	P_{84}	P_{75}	P_{77}

Line 15 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_{11}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{23}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{31}	ℓ_{38}	ℓ_{42}	ℓ_{44}	ℓ_{47}
in point	P_8	P_3	P_{39}	P_{55}	P_{72}	P_3	P_3	P_8	P_8	P_8	P_3	P_3	P_3	P_{39}	P_{55}	P_{72}	P_3	P_3	P_3	P_{72}	P_{39}

Line 16 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_9	ℓ_{14}	ℓ_{15}	ℓ_{17}	ℓ_{18}	ℓ_{20}	ℓ_{24}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{34}	ℓ_{36}	ℓ_{41}	ℓ_{42}
in point	P_8	P_{27}	P_{42}	P_{60}	P_{75}	P_{60}	P_{75}	P_8	P_8	P_8	P_{75}	P_{60}	P_{42}	P_{27}	P_{75}	P_{60}	P_{75}	P_{60}	P_{60}	P_{75}

Line 17 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{10}	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{18}	ℓ_{21}	ℓ_{25}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{32}	ℓ_{37}	ℓ_{39}	ℓ_{42}
in point	P_8	P_{32}	P_{48}	P_{61}	P_{78}	P_{78}	P_{48}	P_8	P_8	P_8	P_{48}	P_{78}	P_{61}	P_{78}	P_{32}	P_{48}	P_{78}	P_{48}	P_{78}	P_{48}

Line 18 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_8	ℓ_{13}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{22}	ℓ_{26}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{33}	ℓ_{35}	ℓ_{40}	ℓ_{42}
in point	P_8	P_{37}	P_{51}	P_{66}	P_{81}	P_{51}	P_{66}	P_8	P_8	P_8	P_{66}	P_{51}	P_{81}	P_{66}	P_{51}	P_{37}	P_{66}	P_{51}	P_{51}	P_{66}

Line 19 intersects

Line	ℓ_2	ℓ_3	ℓ_7	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{23}	ℓ_{27}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{38}	ℓ_{42}	ℓ_{43}	ℓ_{45}
in point	P_9	P_3	P_3	P_3	P_{40}	P_{56}	P_{70}	P_3	P_9	P_9	P_9	P_3	P_3	P_3	P_{40}	P_{56}	P_{70}	P_3	P_3	P_{56}	P_{70}

Line 20 intersects

Line	ℓ_2	ℓ_6	ℓ_8	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{16}	ℓ_{19}	ℓ_{21}	ℓ_{22}	ℓ_{24}	ℓ_{29}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{39}	ℓ_{42}	ℓ_{43}	ℓ_{45}
in point	P_9	P_{75}	P_4	P_{29}	P_4	P_{57}	P_{75}	P_{75}	P_9	P_9	P_9	P_4	P_{75}	P_4	P_{29}	P_{75}	P_{57}	P_4	P_{75}	P_4	P_{29}

Line 21 intersects

Line	ℓ_2	ℓ_4	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{19}	ℓ_{20}	ℓ_{22}	ℓ_{25}	ℓ_{30}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{40}	ℓ_{42}	ℓ_{43}
in point	P_9	P_{48}	P_{63}	P_{31}	P_{48}	P_{63}	P_{77}	P_{48}	P_9	P_9	P_9	P_{63}	P_{48}	P_{63}	P_{77}	P_{31}	P_{48}	P_{63}	P_{48}	P_{77}

Line 22 intersects

Line	ℓ_2	ℓ_5	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{26}	ℓ_{28}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{41}	ℓ_{42}	ℓ_{43}
in point	P_9	P_{66}	P_{84}	P_{36}	P_{49}	P_{66}	P_{84}	P_{66}	P_9	P_9	P_9	P_{84}	P_{66}	P_{84}	P_{66}	P_{49}	P_{36}	P_{84}	P_{66}	P_{36}

Line 23 intersects

Line	ℓ_1	ℓ_3	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{15}	ℓ_{19}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{27}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	$\ell_{\dots}$
in point	P_{10}	P_3	P_3	P_{41}	P_{54}	P_{71}	P_3	P_3	P_3	P_{10}	P_{10}	P_{10}	P_3	P_3	P_{41}	P_{54}	P_{71}	P_3	P_{54}	P_{71}	$P_{\dots}$

Line 24 intersects

Line	ℓ_1	ℓ_5	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{16}	ℓ_{20}	ℓ_{23}	ℓ_{25}	ℓ_{26}	ℓ_{30}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}
in point	P_{10}	P_{60}	P_{28}	P_4	P_{60}	P_{73}	P_4	P_{60}	P_4	P_{10}	P_{10}	P_{10}	P_{60}	P_4	P_{28}	P_{73}	P_{60}	P_{73}	P_4	P_{28}

Line 25 intersects

Line	ℓ_1	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{13}	ℓ_{17}	ℓ_{21}	ℓ_{23}	ℓ_{24}	ℓ_{26}	ℓ_{28}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}
in point	P_{10}	P_{78}	P_{33}	P_{45}	P_{63}	P_{78}	P_{63}	P_{78}	P_{63}	P_{10}	P_{10}	P_{10}	P_{78}	P_{63}	P_{78}	P_{33}	P_{45}	P_{45}	P_{78}	P_{63}

Line 26 intersects

Line	ℓ_1	ℓ_4	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}	ℓ_{18}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{29}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}
in point	P_{10}	P_{51}	P_{35}	P_{51}	P_{65}	P_{84}	P_{84}	P_{51}	P_{84}	P_{10}	P_{10}	P_{10}	P_{51}	P_{84}	P_{65}	P_{51}	P_{35}	P_{65}	P_{35}	P_5

Line 27 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_{11}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{23}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{31}	ℓ_{38}	ℓ_{42}	ℓ_{44}	ℓ_4
in point	P_{11}	P_3	P_{42}	P_{61}	P_{81}	P_3	P_3	P_3	P_{42}	P_{61}	P_{81}	P_3	P_3	P_{11}	P_{11}	P_{11}	P_3	P_3	P_3	P_{61}	P_8

Line 28 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{10}	ℓ_{13}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{22}	ℓ_{25}	ℓ_{27}	ℓ_{29}	ℓ_{30}	ℓ_{32}	ℓ_{33}	ℓ_{39}	ℓ_{42}
in point	P_{11}	P_{27}	P_{39}	P_{66}	P_{78}	P_{78}	P_{66}	P_{39}	P_{27}	P_{78}	P_{66}	P_{66}	P_{78}	P_{11}	P_{11}	P_{11}	P_{78}	P_{66}	P_{78}	P_6

Line 29 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_8	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{20}	ℓ_{26}	ℓ_{27}	ℓ_{28}	ℓ_{30}	ℓ_{34}	ℓ_{35}	ℓ_{40}	ℓ_{42}
in point	P_{11}	P_{32}	P_{51}	P_{55}	P_{75}	P_{51}	P_{75}	P_{55}	P_{75}	P_{32}	P_{51}	P_{75}	P_{51}	P_{11}	P_{11}	P_{11}	P_{75}	P_{51}	P_{51}	P_7

Line 30 intersects

Line	ℓ_0	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_9	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{21}	ℓ_{24}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{36}	ℓ_{37}	ℓ_{41}	ℓ_{42}
in point	P_{11}	P_{37}	P_{48}	P_{60}	P_{72}	P_{60}	P_{48}	P_{72}	P_{60}	P_{48}	P_{37}	P_{48}	P_{60}	P_{11}	P_{11}	P_{11}	P_{60}	P_{48}	P_{60}	P_4

Line 31 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{27}
in point	P_{12}	P_{12}	P_3	P_3	P_4	P_{63}	P_{84}	P_3	P_4	P_{63}	P_{84}	P_3	P_3	P_4	P_{63}	P_{84}	P_3	P_4	P_{63}	P_{84}	P_3

Line 32 intersects

Line	ℓ_1	ℓ_2	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{17}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{28}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{35}	ℓ_{36}	ℓ_{37}	ℓ_{38}
in point	P_{12}	P_{12}	P_{78}	P_{28}	P_{41}	P_{65}	P_{78}	P_{78}	P_{41}	P_{28}	P_{78}	P_{65}	P_{78}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_6

Line 33 intersects

Line	ℓ_1	ℓ_2	ℓ_5	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{28}	ℓ_{31}	ℓ_{32}	ℓ_{34}	ℓ_{35}	ℓ_{36}	ℓ_{37}	ℓ_{42}
in point	P_{12}	P_{12}	P_{66}	P_{29}	P_{40}	P_{66}	P_{77}	P_{66}	P_{40}	P_{29}	P_{77}	P_{66}	P_{66}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_6

Line 34 intersects

Line	ℓ_1	ℓ_2	ℓ_6	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{16}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{29}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{35}	ℓ_{36}	ℓ_{37}	ℓ_{42}
in point	P_{12}	P_{12}	P_{75}	P_{31}	P_{49}	P_{56}	P_{75}	P_{75}	P_{56}	P_{75}	P_{31}	P_{49}	P_{75}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_7

Line 35 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{18}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{29}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{34}	ℓ_{36}	ℓ_{37}	ℓ_{38}
in point	P_{12}	P_{12}	P_{51}	P_{33}	P_{51}	P_{54}	P_{73}	P_{51}	P_{54}	P_{73}	P_{33}	P_{51}	P_{51}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_7

Line 36 intersects

Line	ℓ_1	ℓ_2	ℓ_5	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{16}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{30}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{34}	ℓ_{35}	ℓ_{37}	ℓ_{38}
in point	P_{12}	P_{12}	P_{60}	P_{35}	P_{45}	P_{60}	P_{71}	P_{60}	P_{71}	P_{60}	P_{45}	P_{35}	P_{60}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_4

Line 37 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{30}	ℓ_{31}	ℓ_{32}	ℓ_{33}	ℓ_{34}	ℓ_{35}	ℓ_{36}	ℓ_{42}
in point	P_{12}	P_{12}	P_{48}	P_{36}	P_{48}	P_{57}	P_{70}	P_{48}	P_{70}	P_{57}	P_{48}	P_{36}	P_{48}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_{12}	P_4

Line 38 intersects

Line	ℓ_1	ℓ_3	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{15}	ℓ_{19}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{27}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{39}	ℓ_{40}	ℓ_4
in point	P_{15}	P_3	P_3	P_{45}	P_{65}	P_{73}	P_3	P_3	P_3	P_3	P_{73}	P_{45}	P_{65}	P_3	P_3	P_{65}	P_{73}	P_{45}	P_{15}	P_{15}	P

Line 39 intersects

Line	ℓ_1	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{17}	ℓ_{20}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{28}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{40}
in point	P_{15}	P_{78}	P_{35}	P_4	P_{54}	P_{78}	P_4	P_{78}	P_4	P_{54}	P_4	P_{78}	P_{35}	P_{78}	P_4	P_{78}	P_{54}	P_{35}	P_{15}	P_{15}

Line 40 intersects

Line	ℓ_1	ℓ_4	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{13}	ℓ_{18}	ℓ_{21}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{29}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}
in point	P_{15}	P_{51}	P_{28}	P_{51}	P_{63}	P_{71}	P_{63}	P_{51}	P_{63}	P_{71}	P_{28}	P_{63}	P_{51}	P_{51}	P_{63}	P_{28}	P_{51}	P_{71}	P_{15}	P_{15}

Line 41 intersects

Line	ℓ_1	ℓ_5	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}	ℓ_{16}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{30}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}
in point	P_{15}	P_{60}	P_{33}	P_{41}	P_{60}	P_{84}	P_{84}	P_{60}	P_{84}	P_{41}	P_{60}	P_{33}	P_{84}	P_{60}	P_{84}	P_{41}	P_{33}	P_{60}	P_{15}	P_{15}

Line 42 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{23}
in point	P_{18}	P_{18}	P_3	P_{48}	P_{66}	P_{75}	P_3	P_3	P_{48}	P_{66}	P_{75}	P_3	P_{75}	P_{48}	P_{66}	P_3	P_{75}	P_{48}	P_{66}	P_3

Line 43 intersects

Line	ℓ_0	ℓ_2	ℓ_8	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{24}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{39}	ℓ_{42}	ℓ_{44}	ℓ_{45}
in point	P_{18}	P_{18}	P_4	P_{36}	P_4	P_{56}	P_{77}	P_{56}	P_4	P_{77}	P_{36}	P_4	P_4	P_{77}	P_{56}	P_{36}	P_4	P_{18}	P_{18}	P_{18}

Line 44 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_8	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{26}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{35}	ℓ_{40}	ℓ_{42}	ℓ_{43}
in point	P_{18}	P_{18}	P_{27}	P_{51}	P_{61}	P_{72}	P_{51}	P_{72}	P_{27}	P_{61}	P_{51}	P_{51}	P_{61}	P_{27}	P_{51}	P_{72}	P_{51}	P_{51}	P_{18}	P_{18}

Line 45 intersects

Line	ℓ_0	ℓ_2	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{25}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{40}	ℓ_{42}	ℓ_{43}	ℓ_{44}
in point	P_{18}	P_{18}	P_{63}	P_{29}	P_{49}	P_{63}	P_{70}	P_{70}	P_{29}	P_{63}	P_{49}	P_{63}	P_{63}	P_{29}	P_{49}	P_{70}	P_{63}	P_{18}	P_{18}	P_{18}

Line 46 intersects

Line	ℓ_0	ℓ_2	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{26}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{41}	ℓ_{42}	ℓ_{43}	ℓ_{44}
in point	P_{18}	P_{18}	P_{84}	P_{31}	P_{40}	P_{57}	P_{84}	P_{40}	P_{57}	P_{31}	P_{84}	P_{84}	P_{84}	P_{40}	P_{31}	P_{57}	P_{84}	P_{18}	P_{18}	P_{18}

Line 47 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_9	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{24}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{36}	ℓ_{41}	ℓ_{42}	ℓ_{43}
in point	P_{18}	P_{18}	P_{32}	P_{39}	P_{60}	P_{81}	P_{60}	P_{39}	P_{60}	P_{32}	P_{81}	P_{60}	P_{81}	P_{39}	P_{32}	P_{60}	P_{60}	P_{60}	P_{18}	P_{18}

Line 48 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{10}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{25}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{32}	ℓ_{39}	ℓ_{42}	ℓ_{43}
in point	P_{18}	P_{18}	P_{37}	P_{42}	P_{55}	P_{78}	P_{78}	P_{55}	P_{42}	P_{78}	P_{37}	P_{78}	P_{42}	P_{78}	P_{55}	P_{37}	P_{78}	P_{78}	P_{18}	P_{18}

Line 49 intersects

Line	ℓ_2	ℓ_3	ℓ_7	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{23}	ℓ_{27}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{38}	ℓ_{42}	ℓ_{43}
in point	P_{19}	P_3	P_3	P_3	P_{49}	P_{57}	P_{77}	P_3	P_3	P_{57}	P_{77}	P_{49}	P_3	P_3	P_3	P_{77}	P_{49}	P_{57}	P_3	P_3	P_{77}

Line 50 intersects

Line	ℓ_2	ℓ_5	ℓ_8	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{24}	ℓ_{28}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{39}	ℓ_{42}
in point	P_{19}	P_{66}	P_4	P_{31}	P_4	P_{66}	P_{70}	P_{66}	P_{70}	P_4	P_{31}	P_{66}	P_4	P_{66}	P_4	P_{66}	P_{31}	P_{70}	P_4	P_{66}

Line 51 intersects

Line	ℓ_2	ℓ_4	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{26}	ℓ_{30}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{41}	ℓ_{42}
in point	P_{19}	P_{48}	P_{84}	P_{29}	P_{48}	P_{56}	P_{84}	P_{48}	P_{56}	P_{29}	P_{48}	P_{84}	P_{84}	P_{48}	P_{84}	P_{29}	P_{56}	P_{48}	P_{84}	P_{48}

Line 52 intersects

Line	ℓ_2	ℓ_6	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{16}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}	ℓ_{25}	ℓ_{29}	ℓ_{31}	ℓ_{33}	ℓ_{34}	ℓ_{37}	ℓ_{40}	ℓ_{42}
in point	P_{19}	P_{75}	P_{63}	P_{36}	P_{40}	P_{63}	P_{75}	P_{75}	P_{40}	P_{75}	P_{63}	P_{36}	P_{63}	P_{75}	P_{63}	P_{40}	P_{75}	P_{36}	P_{63}	P_{7}

Line 53 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}
in point	P_{21}	P_{21}	P_3	P_{51}	P_{60}	P_{78}	P_3	P_{51}	P_{60}	P_{78}	P_3	P_3	P_{60}	P_{78}	P_{51}	P_3	P_3	P_{60}	P_{78}	P_{51}

Line 54 intersects

Line	ℓ_0	ℓ_1	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{20}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	ℓ_{41}
in point	P_{21}	P_{21}	P_{33}	P_4	P_{65}	P_{71}	P_4	P_4	P_{71}	P_4	P_{33}	P_{65}	P_4	P_{65}	P_{33}	P_{71}	P_{65}	P_4	P_{71}	P_{33}

Line 55 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{21}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{37}	ℓ_{42}	ℓ_{44}	ℓ_{47}
in point	P_{21}	P_{21}	P_{27}	P_{48}	P_{55}	P_{81}	P_{48}	P_{55}	P_{27}	P_{48}	P_{81}	P_{48}	P_{81}	P_{27}	P_{55}	P_{48}	P_{48}	P_{48}	P_{27}	P_{8}

Line 56 intersects

Line	ℓ_0	ℓ_1	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	ℓ_{41}
in point	P_{21}	P_{21}	P_{28}	P_{45}	P_{54}	P_{84}	P_{84}	P_{84}	P_{54}	P_{28}	P_{45}	P_{84}	P_{84}	P_{28}	P_{54}	P_{45}	P_{45}	P_{54}	P_{28}	P_{8}

Line 57 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{13}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{22}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{33}	ℓ_{42}	ℓ_{44}	ℓ_{47}
in point	P_{21}	P_{21}	P_{32}	P_{42}	P_{66}	P_{72}	P_{66}	P_{72}	P_{42}	P_{32}	P_{66}	P_{66}	P_{42}	P_{66}	P_{32}	P_{72}	P_{66}	P_{66}	P_{72}	P_{3}

Line 58 intersects

Line	ℓ_0	ℓ_1	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{13}	ℓ_{21}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}	ℓ_{31}	ℓ_{32}	ℓ_{35}	ℓ_{36}	ℓ_{38}	ℓ_{39}	ℓ_{40}	ℓ_{41}
in point	P_{21}	P_{21}	P_{35}	P_{41}	P_{63}	P_{73}	P_{63}	P_{63}	P_{41}	P_{73}	P_{63}	P_{35}	P_{63}	P_{41}	P_{73}	P_{35}	P_{73}	P_{35}	P_{63}	P_{4}

Line 59 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{20}	ℓ_{27}	ℓ_{28}	ℓ_{29}	ℓ_{30}	ℓ_{34}	ℓ_{42}	ℓ_{44}	ℓ_{47}
in point	P_{21}	P_{21}	P_{37}	P_{39}	P_{61}	P_{75}	P_{75}	P_{39}	P_{75}	P_{61}	P_{37}	P_{75}	P_{61}	P_{39}	P_{75}	P_{37}	P_{75}	P_{75}	P_{61}	P_{3}

The surface has 49 points:
The points on the surface are:

0 : $P_3 = (0,0,0,1)$
1 : $P_4 = (1,1,1,1)$
2 : $P_5 = (1,1,0,0)$
3 : $P_6 = (2,1,0,0)$
4 : $P_7 = (3,1,0,0)$
5 : $P_8 = (1,0,1,0)$
6 : $P_9 = (2,0,1,0)$
7 : $P_{10} = (3,0,1,0)$
8 : $P_{11} = (0,1,1,0)$

9 : $P_{12} = (1,1,1,0)$
10 : $P_{15} = (0,2,1,0)$
11 : $P_{18} = (3,2,1,0)$
12 : $P_{19} = (0,3,1,0)$
13 : $P_{21} = (2,3,1,0)$
14 : $P_{27} = (1,1,0,1)$
15 : $P_{28} = (2,1,0,1)$
16 : $P_{29} = (3,1,0,1)$
17 : $P_{31} = (1,2,0,1)$

18 : $P_{32} = (2,2,0,1)$
19 : $P_{33} = (3,2,0,1)$
20 : $P_{35} = (1,3,0,1)$
21 : $P_{36} = (2,3,0,1)$
22 : $P_{37} = (3,3,0,1)$
23 : $P_{39} = (1,0,1,1)$
24 : $P_{40} = (2,0,1,1)$
25 : $P_{41} = (3,0,1,1)$
26 : $P_{42} = (0,1,1,1)$

11

$27 : P_{45} = (0, 2, 1, 1)$

$28 : P_{48} = (3, 2, 1, 1)$

$29 : P_{49} = (0, 3, 1, 1)$

$30 : P_{51} = (2, 3, 1, 1)$

$31 : P_{54} = (1, 0, 2, 1)$

$32 : P_{55} = (2, 0, 2, 1)$

$33 : P_{56} = (3, 0, 2, 1)$

$34 : P_{57} = (0, 1, 2, 1)$

$35 : P_{60} = (3, 1, 2, 1)$

$36 : P_{61} = (0, 2, 2, 1)$

$37 : P_{63} = (2, 2, 2, 1)$

$38 : P_{65} = (0, 3, 2, 1)$

$39 : P_{66} = (1, 3, 2, 1)$

$40 : P_{70} = (1, 0, 3, 1)$

$41 : P_{71} = (2, 0, 3, 1)$

$42 : P_{72} = (3, 0, 3, 1)$

$43 : P_{73} = (0, 1, 3, 1)$

$44 : P_{75} = (2, 1, 3, 1)$

$45 : P_{77} = (0, 2, 3, 1)$

$46 : P_{78} = (1, 2, 3, 1)$

$47 : P_{81} = (0, 3, 3, 1)$

$48 : P_{84} = (3, 3, 3, 1)$