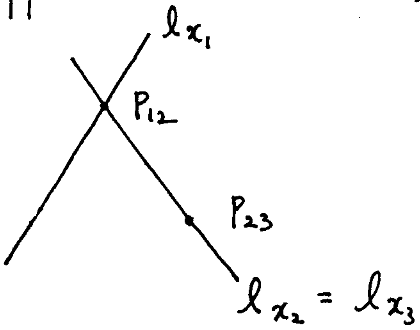
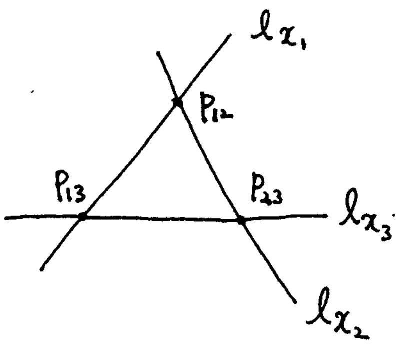
l_{x_2}, and l_{x_3}, if and only if it passes through the point $p = P_{12}$.

⊢ By the assumption, since x_1, x_2 and x_3 are not collinear and $\sigma_{2,1}(p,h)$ is a line, they do not lie all on a $\sigma_{2,1}(p,h)$.

Suppose $P_{12} = P_{13} \neq P_{23}$. $\Rightarrow$ $l_{x_2} = l_{x_3}$ $\Rightarrow$ Contradiction to the assumption that x_i's are not collinear.



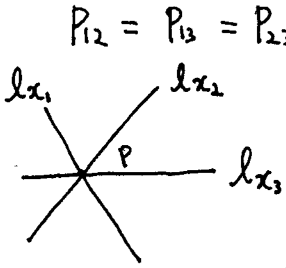
1. P_{12}, P_{13} and P_{23} are distinct



$\Rightarrow$ $\overline{P_{12}, P_{13}, P_{23}} = \overline{l_{x_1}, l_{x_2}, l_{x_3}} = \mathbb{P}^2 = h$

$\Rightarrow$ a line l meets l_{x_i}, $i = 1, 2, 3$ $\Leftrightarrow$ $l \subset h$

2. $P_{12} = P_{13} = P_{23} = P$, and let $h_{ij} = \overline{l_{x_i}, l_{x_j}}$.



$\overline{x_i, x_j} = \tilde{\phi}(\sigma_{2,1}(p, h_{ij}))$

If l_{x_i}'s span a 2-plane, then $l_{x_3} \subset \overline{l_{x_1}, l_{x_2}} = h_{12}$, and $l_{x_3} \subset \sigma_{2,1}(p, h_{12})$.