Formation et Analyse d'Images

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Two lines make a point, two points make a line

Given two points $\quad P = \begin{matrix} x \\ y \\ 1 \end{matrix} \quad$ and $\quad Q = \begin{matrix} u \\ v \\ 1 \end{matrix}$

and two lines $\quad L = (a\ \ b\ \ c\ ) \quad$ and $\quad M = (d\ \ e\ \ f\ )$

1) Two lines make a point. $P = L \times M$

a) Use the cross product to derive the formula for the coefficients for the point P at the intersection of two lines L, M

b) Derive the formula for the same coefficients using the determinant.

2) Two points make a line $L^T = P \times Q$

a) Use the cross product to derive the formula for the coefficients for the line L^T passing through two points P, Q

b) Derive the formula for the same coefficients using the determinant. .