1 Find a parametric equation of the line in R^3 passing through the points $\bar{x}_1 = \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix}$

and $\bar{x}_2 = \begin{pmatrix} 1 \\ 3 \\ 2 \end{pmatrix}$

   a Find a parametric equation of the line passing through the origin parallel to this line.

   b Find the symmetric equations of this line.

2 Repeat the procedures above for the line in R^4 passing through the points $\bar{x}_1 = \begin{pmatrix} 1 \\ 2 \\ 1 \\ 3 \end{pmatrix}$

and $\bar{x}_2 = \begin{pmatrix} 1 \\ 3 \\ 2 \\ 1 \end{pmatrix}$

3 Find a parametric of the plane passing through the points $\bar{x}_1 = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$, $\bar{x}_2 = \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}$,

$\bar{x}_3 = \begin{pmatrix} 0 \\ 1 \\ 1 \end{pmatrix}$.

   a Find a parametric equation of the plane passing thorugh the origin parallel to this plane.

   b Find the symmetric equation of the plane.