

3.5 Résolvons le système formé des équations des trois plans :

$$\begin{cases} x - 2y + z - 7 = 0 \\ 2x + y - z + 2 = 0 \\ x - 3y + 2z - 11 = 0 \end{cases} \left| \begin{array}{l} \cdot(-2) \\ \cdot 1 \\ \cdot(-1) \end{array} \right. \left| \begin{array}{l} \cdot 1 \\ \\ \end{array} \right.$$

$$\begin{cases} x - 2y + z - 7 = 0 \\ 5y - 3z + 16 = 0 \\ y - z + 4 = 0 \end{cases} \left| \begin{array}{l} \\ \cdot 1 \\ \cdot(-5) \end{array} \right.$$

$$\begin{cases} x - 2y + z - 7 = 0 \\ y - z + 4 = 0 \\ 2z - 4 = 0 \end{cases} \left| \begin{array}{l} \\ \\ : 2 \end{array} \right.$$

$$\begin{cases} x - 2y + z - 7 = 0 \\ y - z + 4 = 0 \\ z - 2 = 0 \end{cases} \left| \begin{array}{l} \cdot 1 \\ \\ \cdot(-1) \end{array} \right. \left| \begin{array}{l} \cdot 1 \\ \\ \cdot 1 \end{array} \right.$$

$$\begin{cases} x - 2y - 5 = 0 \\ y + 2 = 0 \\ z - 2 = 0 \end{cases} \left| \begin{array}{l} \cdot 1 \\ \cdot 2 \\ \end{array} \right.$$

$$\begin{cases} x - 1 = 0 \\ y + 2 = 0 \\ z - 2 = 0 \end{cases}$$

On conclut que l'intersection de ces trois plans est le point $(1; -2; 2)$.