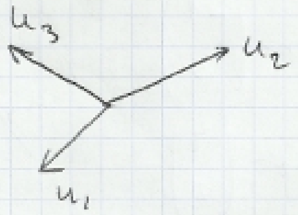

$$u_1 = \begin{pmatrix} -2 \\ -2 \end{pmatrix} \qquad u_2 = \begin{pmatrix} 4 \\ 2 \end{pmatrix} \qquad u_3 = \begin{pmatrix} -3 \\ 2 \end{pmatrix}$$

Cherchons α, β tq $u_3 = \alpha u_1 + \beta u_2$

(cela donnerait une relation de dépendance linéaire : $\alpha u_1 + \beta u_2 - u_3 = 0$)

$$\begin{cases} -2\alpha + 4\beta = -3 \\ -2\alpha + 2\beta = 2 \end{cases}$$

G-J
$$\left(\begin{array}{cc|c} -2 & 4 & -3 \\ -2 & 2 & 2 \end{array}\right) \to \left(\begin{array}{cc|c} 1 & -1 & -1 \\ -2 & 4 & -3 \end{array}\right) \to \left(\begin{array}{cc|c} 1 & -1 & -1 \\ 0 & 2 & -5 \end{array}\right)$$

$$\to \left(\begin{array}{cc|c} 1 & -1 & -1 \\ 0 & 1 & -5/2 \end{array}\right) \to \left(\begin{array}{cc|c} 1 & 0 & -7/2 \\ 0 & 1 & -5/2 \end{array}\right)$$

On a $u_3 = -\frac{7}{2} u_1 - \frac{5}{2} u_2$

soit $\frac{5}{2} u_1 + \frac{7}{2} u_2 + u_3 = 0$: c'est une relation de dépendance linéaire

Exercice 9