

Ex 1.3.2

$$\begin{aligned} \text{a)} \quad & \begin{vmatrix} 1 & -2 \\ 5 & m+4 \end{vmatrix} = 0 & \Leftrightarrow & 1 \cdot (m+4) - 5 \cdot (-2) = 0 \\ & & \Leftrightarrow & m+4+10 = 0 \\ & & \Leftrightarrow & m = -14 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad & \begin{vmatrix} m & 3 \\ m+4 & m-1 \end{vmatrix} = 0 & \Leftrightarrow & m(m-1) - 3(m+4) = 0 \\ & & \Leftrightarrow & m^2 - m - 3m - 12 = 0 \\ & & \Leftrightarrow & m^2 - 4m - 12 = 0 \\ & & \Leftrightarrow & (m-6)(m+2) = 0 \end{aligned}$$

Donc $m=6$ ou $m=-2$

1.3.3

$$\vec{x} \sim \vec{a} \Leftrightarrow \vec{x} = k \cdot \vec{a}$$

$$\vec{x} + \lambda \vec{b} = \vec{c}$$

$$\Rightarrow k\vec{a} + \lambda\vec{b} = \vec{c}$$

$$\Rightarrow k \begin{pmatrix} 7 \\ -2 \end{pmatrix} + \lambda \begin{pmatrix} -3 \\ 5 \end{pmatrix} = \begin{pmatrix} 0 \\ 5 \end{pmatrix}$$

$$\Leftrightarrow \begin{pmatrix} 7k - 3\lambda \\ -2k + 5\lambda \end{pmatrix} = \begin{pmatrix} 0 \\ 5 \end{pmatrix}$$

$$\Leftrightarrow \begin{cases} 7k - 3\lambda = 0 & | 5 & | 2 \\ -2k + 5\lambda = 5 & | 3 & | 7 \end{cases}$$

$$\begin{array}{r} 35k - 15\lambda = 0 \\ + \quad -6k + 15\lambda = 15 \\ \hline 29k = 15 \end{array}$$

$$k = \frac{15}{29}$$

$$\begin{array}{r} 14k - 6\lambda = 0 \\ + \quad -14k + 35\lambda = 35 \\ \hline 29\lambda = 35 \end{array}$$

$$29\lambda = 35$$

$$\lambda = \frac{35}{29}$$

$$\vec{x} = \frac{15}{29} \begin{pmatrix} 7 \\ -2 \end{pmatrix} = \begin{pmatrix} 105/29 \\ -30/29 \end{pmatrix}$$