

Tema 1  $(A|I_3) = \left( \begin{array}{ccc|ccc} 1 & 1 & 2 & 1 & 0 & 0 \\ -1 & 3 & 2 & 0 & 1 & 0 \\ 4 & 3 & -2 & 0 & 0 & 1 \end{array} \right)$   $L_2 \leftarrow L_2 + L_1$   
 $L_3 \leftarrow L_3 - 4L_1$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 1 & 2 & 1 & 0 & 0 \\ 0 & 4 & 4 & 1 & 1 & 0 \\ 0 & -1 & -10 & -4 & 0 & 1 \end{array} \right) \quad L_3 \leftarrow L_3 \cdot (-1)$$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 1 & 2 & 1 & 0 & 0 \\ 0 & 4 & 4 & 1 & 1 & 0 \\ 0 & 1 & 10 & 4 & 0 & -1 \end{array} \right) \quad L_3 \leftrightarrow L_2$$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 1 & 2 & 1 & 0 & 0 \\ 0 & 1 & 10 & 4 & 0 & -1 \\ 0 & 4 & 4 & 1 & 1 & 0 \end{array} \right) \quad L_3 \leftarrow L_3 - 4L_2$$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 1 & 2 & 1 & 0 & 0 \\ 0 & 1 & 10 & 4 & 0 & -1 \\ 0 & 0 & -36 & -15 & 1 & 4 \end{array} \right) \quad \begin{array}{l} L_1 \leftarrow L_1 - L_2 \\ L_3 \leftarrow \frac{1}{-36} L_3 \end{array}$$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 0 & -8 & -3 & 0 & 1 \\ 0 & 1 & 10 & 4 & 0 & -1 \\ 0 & 0 & 1 & \frac{15}{36} & \frac{1}{36} & -\frac{1}{9} \end{array} \right) \quad \begin{array}{l} L_1 \leftarrow L_1 + 8L_3 \\ L_2 \leftarrow L_2 + 10L_3 \end{array}$$

$$\sim \left( \begin{array}{ccc|ccc} 1 & 0 & 0 & -3 + \frac{15}{36} \cdot 8 & -\frac{8}{36} & 1 - \frac{8}{9} \\ 0 & 1 & 0 & 4 - \frac{10}{36} & \frac{10}{36} & -1 + \frac{10}{9} \\ 0 & 0 & 1 & \frac{15}{36} & \frac{1}{36} & -\frac{1}{9} \end{array} \right)$$

$$A^{-1} = \left( \begin{array}{ccc|ccc} -3 + \frac{5 \cdot 2}{3} & -\frac{2}{9} & \frac{1}{9} \\ 4 - \frac{25}{6} & \frac{5}{18} & \frac{1}{9} \\ \frac{5}{12} & -\frac{1}{36} & \frac{1}{9} \end{array} \right) =$$

$$= \left( \begin{array}{ccc} \frac{1}{3} & -\frac{2}{9} & \frac{1}{9} \\ \frac{1}{6} & \frac{5}{18} & \frac{1}{9} \\ \frac{5}{12} & -\frac{1}{36} & \frac{1}{9} \end{array} \right)$$