

$$\xrightarrow{R_3 \rightarrow R_3 - 18.4R_2} \left( \begin{array}{ccc|c} 1 & -1.55 & 8.5 & 30.5 \\ 0 & 1 & -48.7 & -195 \\ 0 & 0 & 831 & 3350 \end{array} \right) \xrightarrow{R_3 \rightarrow \frac{1}{831}R_3} \left( \begin{array}{ccc|c} 1 & -1.55 & 8.5 & 30.5 \\ 0 & 1 & -48.7 & -195 \\ 0 & 0 & 1 & 4.03 \end{array} \right)$$

Esto lleva a

$$x_3 \approx 4.03$$

$$x_2 \approx -195 + (48.7)(4.03) = 1.26$$

$$x_1 \approx 30.5 + (1.55)(1.26) - 8.5(4.03) = -1.8$$

En este caso los errores son significativos. Los errores relativos, dados como porcentajes, son

$$x_1: \varepsilon_r = \left| \frac{-0.2}{2} \right| = 10\%$$

$$x_2: \varepsilon_r = \left| \frac{0.26}{1} \right| = 26\%$$

$$x_3: \varepsilon_r = \left| \frac{0.03}{4} \right| = 0.75\%$$

Repetiremos este procedimiento *con* pivoteo. Se obtiene (los círculos indican los pivotes)

$$\left( \begin{array}{ccc|c} 0.0002 & -0.00031 & 0.0017 & 0.00609 \\ 5 & -7 & 6 & 7 \\ \textcircled{8} & 6 & 3 & 2 \end{array} \right)$$

$$\xrightarrow{R_1 \rightleftharpoons R_3} \left( \begin{array}{ccc|c} \textcircled{8} & 6 & 3 & 2 \\ 5 & -7 & 6 & 7 \\ 0.0002 & -0.00031 & 0.0017 & 0.00609 \end{array} \right)$$

$$\xrightarrow{R_1 \rightarrow \frac{1}{8}R_1} \left( \begin{array}{ccc|c} 8 & 0.75 & 0.375 & 0.25 \\ 5 & -7 & 6 & 7 \\ 0.0002 & -0.00031 & 0.0017 & 0.00609 \end{array} \right)$$

$$\xrightarrow{\begin{array}{l} R_2 \rightarrow R_2 - 5R_1 \\ R_3 \rightarrow R_3 - 0.0002R_1 \end{array}} \left( \begin{array}{ccc|c} 1 & 0.75 & 0.375 & 0.25 \\ 0 & \textcircled{-10.8} & 4.13 & 5.75 \\ 0 & -0.00046 & 0.00163 & 0.00604 \end{array} \right)$$

$$\xrightarrow{R_2 \rightarrow \frac{1}{-10.8}R_2} \left( \begin{array}{ccc|c} 1 & 0.75 & 0.375 & 0.25 \\ 0 & 1 & -0.382 & -0.532 \\ 0 & -0.00046 & 0.00163 & 0.00604 \end{array} \right)$$

$$\xrightarrow{R_3 \rightarrow R_3 - 0.00046R_2} \left( \begin{array}{ccc|c} 1 & 0.75 & 0.375 & 0.25 \\ 0 & 1 & -0.382 & -0.532 \\ 0 & 0 & \textcircled{0.00145} & 0.0058 \end{array} \right)$$

$$\xrightarrow{R_3 \rightarrow \frac{1}{0.00145}R_3} \left( \begin{array}{ccc|c} 1 & 0.75 & 0.375 & 0.25 \\ 0 & 1 & -0.382 & -0.532 \\ 0 & 0 & 1 & 4.00 \end{array} \right)$$