

$$\begin{cases} 3x_1 + 2x_2 + 4x_3 = 1 \\ x_1 + x_2 + 2x_3 = 2 \\ 4x_1 + 3x_2 - 2x_3 = 3 \end{cases}$$

$$\begin{array}{l} i \\ ii \\ iii \end{array} \left[\begin{array}{ccc|c} 3 & 2 & 4 & 1 \\ 1 & 1 & 2 & 2 \\ 4 & 3 & -2 & 3 \end{array} \right]$$

$$ii = 3 \cdot ii - i$$

$$\begin{array}{r} (3, 3, 6, 6) \\ - (3, 2, 4, 1) \end{array}$$

$$ii = (0, 1, 2, 5)$$

$$\begin{array}{l} i \\ \rightarrow ii \\ iii \end{array} \left[\begin{array}{ccc|c} 3 & 2 & 4 & 1 \\ 0 & 1 & 2 & 5 \\ 4 & 3 & -2 & 3 \end{array} \right]$$

$$iii = 3 \cdot iii - 4 \cdot i$$

$$\begin{array}{r} 12, 9, -6, 9 \\ - \\ 12, 8, 16, 4 \end{array}$$

$$iii = 0 \quad 1 \quad -22 \quad 5$$

$$\rightarrow \begin{array}{l} i \\ ii \\ iii \end{array} \left[\begin{array}{ccc|c} 3 & 2 & 4 & 1 \\ 0 & 1 & 2 & 5 \\ 0 & 1 & -22 & 5 \end{array} \right]$$

$$iii = iii - ii$$

$$\begin{array}{r} 0 \quad 1 \quad -22 \quad 5 \\ - \\ 0 \quad 1 \quad 2 \quad 5 \\ \hline 0 \quad 0 \quad -24 \quad 0 \end{array}$$

$$\rightarrow \begin{array}{l} i \\ ii \\ iii \end{array} \left[\begin{array}{ccc|c} 3 & 2 & 4 & 1 \\ 0 & 1 & 2 & 5 \\ 0 & 0 & -22 & 0 \end{array} \right]$$

$$\begin{cases} 3x_1 + 2x_2 + 4x_3 = 1 \\ 0 + x_2 + 2x_3 = 5 \\ 0 + 0 - 22x_3 = 0 \end{cases}$$

$$-22x_3 = 0$$

$$x_3 = 0$$

$$x_2 + 2 \cdot 0 = 5$$

$$x_2 = 5$$

$$3x_1 + 2 \cdot 5 = 1$$

$$3x_1 + 10 = 1$$

$$x_1 = \frac{-9}{3} \rightarrow$$

$$x_1 = -3$$

DAí: $x_1 = -3$

$$x_2 = 5$$

$$x_3 = 0$$