

SOLUCIÓN DE Ej. NOTA 3.2.1: ELIMINACIÓN GAUSSIANA

Hacia atrás

$$\textcircled{1} \quad 3x_4 = 6$$

$$x_4 = 6/3 = 2$$

$$4x_1 - 1x_2 + 2x_3 + 3x_4 = 20$$

$$4x_1 - 1(-4) + 2(-1) + 3(2) = 20$$

$$4x_1 + 4 - 2 + 6 = 20$$

$$6x_3 + 5x_4 = 4$$

$$6x_3 + 5(2) = 4$$

$$6x_3 + 10 = 4$$

$$6x_3 = -6$$

$$x_3 = -1$$

$$-2x_2 + 7x_3 - 4x_4 = -7$$

$$-2x_2 + 7(-1) - 4(2) = -7$$

$$-2x_2 - 7 - 8 = -7$$

$$-2x_2 - 15 = -7$$

$$-2x_2 = 8$$

$$x_2 = 8/-2 = -4$$

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{pmatrix} = \begin{pmatrix} 3 \\ -4 \\ -1 \\ 2 \end{pmatrix}$$

Hacia adelante

$$3x_1 = 5$$

$$x_1 = 5/3$$

$$-1x_1 + 1x_2 = 6$$

$$-(5/3) + 1x_2 = 6$$

$$x_2 = 6 + 5/3$$

$$x_2 = 18/3 + 5/3$$

$$x_2 = 23/3$$

$$1x_1 - 2x_2 + 6x_3 + 2x_4 = 2$$

$$1(5/3) - 2(23/3) + 6(-4/3) + 2x_4 = 2$$

$$5/3 - (46/3) - 258/3 + 2x_4 = 2$$

$$-41/3 - 258/3 + 2x_4 = 2$$

$$-299/3 + 2x_4 = 2$$

$$2x_4 = 2 + 299/3 = 305/3$$

$$x_4 = 305/6$$

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{pmatrix} = \begin{pmatrix} 5/3 \\ 23/3 \\ -4/3 \\ 305/6 \end{pmatrix}$$

$$3x_1 - 2x_2 - 1x_3 = 4$$

$$3(5/3) - 2(23/3) - x_3 = 4$$

$$5 - 46/3 - x_3 = 4$$

$$-31/3 - x_3 = 4$$

$$-x_3 = 4 + 31/3 \rightarrow x_3 = -43/3$$

Scribe