

Taller Extra clase

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$$\begin{aligned} a) \quad & 3x_1 + 6x_2 - 6x_3 = 9 \\ & 2x_1 - 5x_2 + 4x_3 = 6 \\ & -x_1 + 16x_2 - 14x_3 = -3 \end{aligned} \quad \begin{pmatrix} 3 & 6 & -6 & | & 9 \\ 2 & -5 & 4 & | & 6 \\ -1 & 16 & -14 & | & -3 \end{pmatrix} \quad \begin{aligned} & \frac{2}{3}F_1 + F_2 \\ & \frac{4}{3}F_1 + F_3 \end{aligned}$$

$$\approx \begin{pmatrix} 3 & 6 & -6 & | & 9 \\ 0 & -17 & 16 & | & 0 \\ 0 & 22 & -20 & | & 0 \end{pmatrix} \quad \begin{aligned} & \frac{22}{17}F_2 + F_3 \end{aligned}$$

$$\approx \begin{pmatrix} 3 & 6 & -6 & | & 9 \\ 0 & -17 & 16 & | & 0 \\ 0 & 0 & -8 & | & 0 \end{pmatrix}$$

$$-8z = 0$$

$$z = 0 //$$

$$-17y + 16z = 0$$

$$-17y = 0$$

$$y = 0 //$$

$$3x + 6y - 6z = 9$$

$$3x = 9$$

$$x = \frac{9}{3}$$

$$x = 3 //$$

1)

$$w - 2x + 2y - 3z = 15$$

$$-2x + 2y - 3z + w = 15$$

$$3w + 4x - y + z = -6$$

$$4x - y + z + 3w = -6$$

$$2w - 3x + 2y - z = 17$$

$$-3x + 2y - z + 2w = 17$$

$$w + x - 3y - 2z = -7$$

$$x - 3y - 2z = w = -7$$

$$\begin{vmatrix} -2 & 2 & -3 & 1 \\ 4 & -1 & 1 & 3 \\ -3 & 2 & -1 & 2 \\ 1 & -3 & -2 & 1 \end{vmatrix}$$

$$\Delta = -142$$

$$\begin{vmatrix} 15 & 2 & -3 & 1 \\ -6 & -1 & 1 & 3 \\ 17 & 2 & -1 & 2 \\ -7 & -3 & -2 & 1 \end{vmatrix}$$

$$\Delta_x = \frac{-284}{-142}$$

$$= \frac{284}{-142}$$

$$\begin{vmatrix} -2 & 15 & -3 & 1 \\ 4 & -6 & 1 & 3 \\ -3 & 17 & -1 & 2 \\ 1 & -7 & -2 & 1 \end{vmatrix}$$

$$\Delta_y = \frac{-426}{-142}$$

$$= y = \frac{-426}{-142}$$

$$x = -2 //$$

$$y = 3 //$$

$$\begin{vmatrix} -2 & 2 & 15 & 1 \\ 4 & -1 & -6 & 3 \\ -3 & 2 & 17 & 2 \\ 1 & -3 & -7 & 1 \end{vmatrix}$$

$$\Delta_z = \frac{142}{-142}$$

$$z = \frac{142}{-142}$$

$$z = -1 //$$

$$\begin{vmatrix} -2 & 2 & -3 & 15 \\ 4 & -1 & 1 & -6 \\ -3 & 2 & -1 & 17 \\ 1 & -3 & -2 & -7 \end{vmatrix}$$

$$\Delta_w = \frac{-284}{-142}$$

$$w = \frac{-284}{-142}$$

$$w = 2 //$$