

EXERCICIO MIBE 3408:

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$$\begin{cases} 2x + y - z = 1 \\ x - 2y + 2z = 3 \\ 3x - 2y + z = 2 \end{cases}$$

$$\left(\begin{array}{ccc|c} 2 & 1 & -1 & 1 \\ 1 & -2 & 2 & 3 \\ 3 & -2 & 1 & 2 \end{array} \right)$$

$$a) \quad x = \frac{|Ax|}{|A|} = \frac{\begin{vmatrix} 1 & 1 & -1 \\ 3 & -2 & 2 \\ 2 & -2 & 1 \end{vmatrix}}{\begin{vmatrix} 2 & 1 & -1 \\ 1 & -2 & 2 \\ 3 & -2 & 1 \end{vmatrix}} = \frac{5}{5} = 1 \quad \boxed{x=1}$$

b) Si $x=1$

$$\begin{cases} 2 \cdot 1 + y - z = 1 & (1) \quad y - z = -1 \\ 1 - 2y + 2z = 3 & (2) \quad -2y + 2z = 2 \\ 3 \cdot 1 - 2y + z = 2 & (3) \quad -2y + z = -1 \end{cases}$$

$$\begin{array}{rcl} (1) & y - z & = -1 \\ (3) & -2y + z & = -1 \\ \hline & -y & = -2 \\ & y & = 2 \end{array} \quad \boxed{y=2}$$

$$\begin{array}{rcl} (1) & y - z & = -1 \\ & 2 - z & = -1 \\ & -z & = -1 - 2 \\ & z & = 3 \end{array} \quad \boxed{z=3}$$