

$$\begin{array}{c|ccc} & a_{11} & b_1 & a_{13} \\ & a_{21} & b_2 & a_{23} \\ x_2 & a_{31} & b_3 & a_{33} \end{array}$$

①

$$\begin{array}{c|ccc} & a_{11} & a_{12} & b_1 \\ & a_{21} & a_{22} & b_2 \\ y_3 & a_{31} & a_{32} & b_3 \end{array}$$

②

Ejemplo

$$0.3x_1 + 0.52x_2 + x_3 = -0.01$$

$$0.5x_1 + x_2 + 1.9x_3 = 0.67$$

$$0.1x_1 + 0.3x_2 + 0.5x_3 = -0.44$$

$$A = \begin{bmatrix} 0.3 & 0.52 & 1 \\ 0.5 & 1 & 1.9 \\ 0.1 & 0.3 & 0.5 \end{bmatrix}$$

$$x = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}$$

$$b = \begin{bmatrix} -0.01 \\ 0.67 \\ -0.44 \end{bmatrix}$$

$$D = 0.3 \begin{vmatrix} 1 & 1.9 \\ 0.3 & 0.5 \end{vmatrix} - 0.52 \begin{vmatrix} 0.5 & 1.9 \\ 0.1 & 0.5 \end{vmatrix} + \begin{vmatrix} 0.5 & 1 \\ 0.1 & 0.3 \end{vmatrix}$$

$$= 0.3(0.5 - 0.57) - 0.52(0.25 - 0.19) + (0.15 - 0.1)$$

$$= -2.2 \times 10^{-3}$$

$$x_1 = \frac{\begin{vmatrix} -0.01 & 0.67 & 1 \\ 0.67 & 1 & 1.9 \\ -0.44 & 0.3 & 0.5 \end{vmatrix}}{-0.0022} = \frac{\begin{vmatrix} -0.01 & 1 & 1.9 \\ 0.3 & 0.5 \end{vmatrix} + 0.52 \begin{vmatrix} 0.67 & 1.9 \\ -0.44 & 0.5 \end{vmatrix}}{-0.0022} + 1 \begin{vmatrix} 0.67 & 1 \\ -0.44 & 0.3 \end{vmatrix}$$

$$= \frac{-0.01(0.5 - 0.57) - 0.52(0.335 - 0.836) + (0.201 + 0.44)}{-0.0022}$$

$$x_1 = \frac{0.32278}{-0.0022} = -14.9$$

$$X_2 = \begin{vmatrix} 0.3 & -0.01 & 1 \\ 0.5 & 0.67 & 1.9 \\ 0.1 & -0.44 & 0.5 \end{vmatrix} = 0.3 \begin{vmatrix} 0.67 & 1.9 \\ -0.44 & 0.5 \end{vmatrix} - (-0.01) \begin{vmatrix} 0.5 & 1.9 \\ 0.1 & 0.5 \end{vmatrix} + 1 \begin{vmatrix} 0.5 & 0.67 \\ 0.1 & -0.44 \end{vmatrix}$$

$$X_2 = 0.3((0.5)(0.67) - ((-0.44)(1.9))) + 0.01((0.5)(0.5) - ((1.9)(0.1))) + ((0.5)(-0.44) - ((0.1)(0.67)))$$

$$X_2 = 0.3(0.335 + 0.836) + 0.01(0.25 - 0.19) + (-0.22 - 0.067)$$

$$X_2 = \frac{0.0649}{-0.0022} = -29.5$$

$$X_3 = \begin{vmatrix} 0.3 & 0.52 & -0.01 \\ 0.5 & 1 & 0.67 \\ 0.1 & 0.3 & -0.44 \end{vmatrix} = 0.3 \begin{vmatrix} 1 & 0.67 \\ 0.3 & -0.44 \end{vmatrix} - 0.52 \begin{vmatrix} 0.5 & 0.67 \\ 0.1 & -0.44 \end{vmatrix} + (-0.01) \begin{vmatrix} 0.5 & 1 \\ 0.1 & 0.3 \end{vmatrix}$$

$$X_3 = 0.3((1)(-0.44) - ((0.3)(0.67))) - 0.52((0.5)(-0.44) - ((0.1)(0.67))) + (-0.01)((0.5)(0.3) - ((1)(0.1)))$$

$$X_3 = 0.3(-0.44 - 0.201) - 0.52(-0.22 - 0.067) + (-0.01)(0.15 - 0.1)$$

$$X_3 = \frac{-0.04356}{-0.0022} = 19.8$$