Metodos Numericos
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Resolver usando Gauss-Jordan, Factorización LU, y Gauss-Seidel

$$3X_1 - 0.1x_2 - 0.2x_3 = 7.85$$
$$0.1x_1 + 7x_2 - 0.3x_3 = -19.85$$
$$0.3x_1 - 0.2x_2 + 10x_3 = 71.4$$

Metodo Gauss-Jordan.

$$\left(\begin{array}{ccc|c} 3 & -0.1 & -0.2 & 7.85 \\ 0.1 & 7 & -0.3 & -19.85 \\ 0.3 & -0.2 & 10 & 71.4 \end{array}\right) \Rightarrow F_2 - F_1\left(\frac{0.1}{3}\right) \Rightarrow \left(\begin{array}{ccc|c} 3 & -0.1 & -0.2 & 7.85 \\ 0 & 7.003 & -0.306 & -20.111 \\ 0.3 & -0.2 & 10 & 71.4 \end{array}\right)$$

$$\Rightarrow F_3 - F_1\left(\frac{0.3}{3}\right) \Rightarrow \left(\begin{array}{ccc|c} 3 & -0.1 & -0.2 & 7.85 \\ 0 & 7.003 & -0.306 & -20.111 \\ 0 & -0.19 & 10.000 & 70.615 \end{array}\right) \Rightarrow F_3 - F_2\left(\frac{-0.19}{7.003}\right)$$

$$\Rightarrow \left(\begin{array}{ccc|c} 3 & -0.1 & -0.2 & 7.85 \\ 0 & 7.003 & -0.306 & -20.111 \\ 0 & 0 & 10.000 & 70.827 \end{array}\right) \Rightarrow F_1 - F_2\left(\frac{-0.1}{7.003}\right) \simeq \left(\begin{array}{ccc|c} 3 & 0 & -0.195 & 7.862 \\ 0 & 7.003 & -0.306 & -20.111 \\ 0 & 0 & 10.000 & 70.827 \end{array}\right)$$

$$\Rightarrow F_1 - F_3\left(\frac{-0.195}{10.000}\right) \simeq \left(\begin{array}{ccc|c} 3 & 0 & 0 & 8.943 \\ 0 & 7.003 & -0.306 & -20.111 \\ 0 & 0 & 10.000 & 70.827 \end{array}\right) \Rightarrow F_2 - F_3\left(\frac{-0.306}{10.000}\right)$$

$$\simeq \left(\begin{array}{ccc|c} 3 & 0 & 0 & 8.943 \\ 0 & 7.003 & 0 & -17.943 \\ 0 & 0 & 10.000 & 70.827 \end{array}\right) \Rightarrow \begin{array}{l} \text{Divido} \\ F_1/3 \\ F_2/7.003 \\ F_3/10.000 \end{array} \Rightarrow \left(\begin{array}{ccc|c} 1 & 0 & 0 & 2.981 \\ 0 & 1 & 0 & -2.562 \\ 0 & 0 & 1 & 7.082 \end{array}\right)$$

$x_1 = 2.981$
$x_2 = -2.562$
$x_3 = 7.082$