$x_1^0 = 0 \quad x_2^0 = 0 \quad x_3^0 = 0$

$$6x_1 + 18x_2 + 3x_3 = 3$$
$$2x_1 + 12x_2 = 19$$
$$4x_1 + 15x_2 + 3x_3 = 0$$

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

$$x_1^{k=1} = \frac{-\sum a_{ij} x_j^0 + b_1}{a_{11}} = \frac{-(a_{12}x_2^0 + a_{13}x_3^0) + b_1}{a_{11}}$$

$$x_1^{k=1} = \frac{-(18 \cdot 0 + 3 \cdot 0) + 3}{6} = \frac{3}{6} = \frac{1}{2}$$

$$x_2^{k=2} = \frac{-(a_{21}x_1^0 + a_{23}x_3^0) + b_2}{a_{22}} = \frac{-(2 \cdot 1.5 + 0 \cdot 0) + 19}{12} = \frac{18}{12} = \frac{3}{2}$$

$$x_3^{k=3} = \frac{-(a_{31}x_1^0 + a_{32}x_2^0) + b_3}{a_{33}} = \frac{-(4 \cdot 1/2 + 15 \cdot 3/2) + 0}{3} = \frac{-49}{6} = -8.166$$

SEGUNDA ITERACIÓN

$$x_1^{k=2} = \frac{-(18 \cdot 3/2 + 3 \cdot -8.166) + 3}{6} = 0.083$$

$$x_2^{k=2} = \frac{-(2 \cdot (0.083) + 0 \cdot -8.166) + 19}{12} = 1.569$$

$$x_3^{k=2} = \frac{-(4 \cdot (0.083) + 15 \cdot 1.569) + 0}{3} = -7.95$$

TERCERA ITERACION

$$x_1^{k=3} = \frac{-(18 \cdot (1.569) + 3 \cdot (-7.95)) + 3}{6} = -0.229$$

$$x_2^{k=3} = \frac{-(2 \cdot -0.229 + 0 \cdot -7.95) + 19}{12} = 1.621$$

$$x_3^{k=3} = \frac{-(4 \cdot -0.229 + 15 \cdot 1.621) + 0}{3} = -7.799$$