$$\left(\begin{array}{ccc|ccc} 1 & 2 & 1 & 1 & 0 & 0 \\ 2 & 1 & 0 & 0 & 1 & 0 \\ 1 & 1 & 1 & 0 & 0 & 1 \end{array}\right) \begin{matrix} \\ 2L_1-L_2 \\ L_1-L_2 \end{matrix} \sim \left(\begin{array}{ccc|ccc} 1 & 2 & 1 & 1 & 0 & 0 \\ 0 & 3 & 2 & 2 & -1 & 0 \\ 0 & 1 & 0 & 1 & 0 & -1 \end{array}\right) \begin{matrix} \\ \\ 3L_3 \end{matrix} \sim$$

$$\left(\begin{array}{ccc|ccc} 1 & 2 & 1 & 1 & 0 & 0 \\ 0 & 3 & 2 & 2 & -1 & 0 \\ 0 & 3 & 0 & 3 & 0 & -3 \end{array}\right) \begin{matrix} \\ \\ L_3-L_2 \end{matrix} \sim \left(\begin{array}{ccc|ccc} 1 & 2 & 1 & 1 & 0 & 0 \\ 0 & 3 & 2 & 2 & -1 & 0 \\ 0 & 0 & -2 & 1 & 1 & -3 \end{array}\right) \begin{matrix} L_1-L_2 \\ \\ L_3/-2 \end{matrix} \sim$$

$$\left(\begin{array}{ccc|ccc} 1 & -1 & -1 & -1 & 1 & 0 \\ 0 & 3 & 2 & 2 & -1 & 0 \\ 0 & 0 & 1 & -\frac{1}{2} & -\frac{1}{2} & \frac{3}{2} \end{array}\right) \begin{matrix} L_1+L_3 \\ L_2-L_3 \\ \\ \end{matrix} \sim \left(\begin{array}{ccc|ccc} 1 & -1 & 0 & -3/2 & 1/2 & 3/2 \\ 0 & 3 & 1 & 5/2 & -1/2 & -3/2 \\ 0 & 0 & 1 & -1/2 & -1/2 & 3/2 \end{array}\right) \begin{matrix} \\ L_2-L_3 \\ \\ \end{matrix}$$

$$\left(\begin{array}{ccc|ccc} 1 & -1 & 0 & -3/2 & 1/2 & 3/2 \\ 0 & 3 & 0 & 3 & 0 & -3 \\ 0 & 0 & 1 & -1/2 & -1/2 & 3/2 \end{array}\right) \begin{matrix} \\ L_2/3 \\ \\ \end{matrix} \sim \left(\begin{array}{ccc|ccc} 1 & -1 & 0 & -3/2 & 1/2 & 3/2 \\ 0 & 1 & 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & -1/2 & -1/2 & 3/2 \end{array}\right) \begin{matrix} L_1+L_2 \\ \\ \\ \end{matrix} \sim$$

$$\left(\begin{array}{ccc|ccc} 1 & 0 & 0 & -1/2 & 1/2 & 1/2 \\ 0 & 1 & 0 & 1 & 0 & -1 \\ 0 & 0 & 1 & -1/2 & -1/2 & 3/2 \end{array}\right) = \left(I \mid A^{-1}\right)$$

A^{-1}

Logo A^{-1} é a matriz inversa de A.