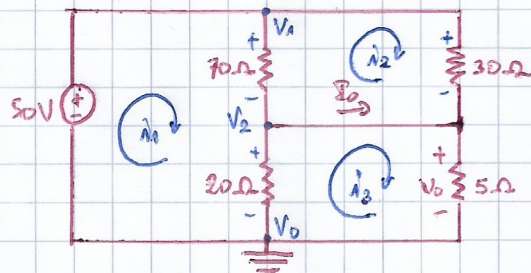


Ejercicio del libro de Sadiku

2.35 Calcule V_o y I_o en el circuito



$$V_1 = 50$$

$$I_o = i_3 - i_2$$

Malla 1

$$\textcircled{1} 50 - 70(i_1 - i_2) - 20(i_1 - i_3) = 0$$

Malla 2

$$\textcircled{2} -30i_2 + (70)(i_1 - i_2) = 0$$

Malla 3

$$\textcircled{3} -5i_3 + (20)(i_1 - i_3) = 0$$

$$\textcircled{1} 70i_1 - 70i_2 + 20i_1 - 20i_3 = 50$$

$$\textcircled{1} 90i_1 - 70i_2 - 20i_3 = 50$$

$$\textcircled{2} 70i_1 - 100i_2 = 0$$

$$\textcircled{3} 20i_1 - 25i_3 = 0$$

$$\begin{bmatrix} 90 & -70 & -20 \\ 70 & -100 & 0 \\ 20 & 0 & -25 \end{bmatrix} \begin{bmatrix} i_1 \\ i_2 \\ i_3 \end{bmatrix} = \begin{bmatrix} 50 \\ 0 \\ 0 \end{bmatrix}$$

$$i_1 = 2 \text{ [A]}$$

$$i_2 = 7/5 \text{ [A]}$$

$$i_3 = 8/5 \text{ [A]}$$

In[2]:= **A = {{90, -70, -20}, {70, -100, 0}, {20, 0, -25}}**

Out[2]= {{90, -70, -20}, {70, -100, 0}, {20, 0, -25}}

In[1]:= **b = {{50}, {0}, {0}}**

Out[1]= {{50}, {0}, {0}}

In[3]:= **MatrixForm[Inverse[A].b]**

[\[forma de mat··](#) [\[matriz inversa](#)

Out[3]/MatrixForm=

$$\begin{pmatrix} 2 \\ 7 \\ 5 \\ 8 \\ 5 \end{pmatrix}$$