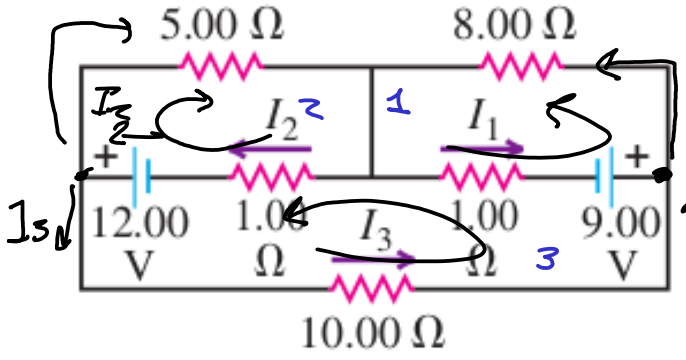
TALLER 7



Malla 1:

$$-1 \cdot I_1 + 9 - 8(I_1 + I_3) = 0$$

$$9 - 9I_1 - 8I_3 = 0 \quad (1)$$

Malla 2:

$$-1 \cdot I_2 + 12 - 5(I_2 - I_3) = 0$$

$$12 - 6I_2 - 5I_3 = 0 \quad (2)$$

Malla 3:

$$-10I_3 - 9 + I_1 - I_2 + 12 = 0$$

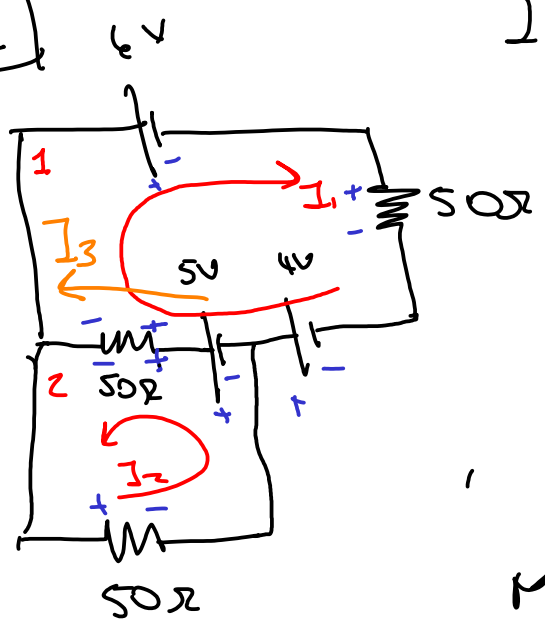
$$3 + I_1 - I_2 - 10I_3 = 0 \quad (3)$$

$$I_1 = 8.48\ A$$

$$I_2 = 7.16\ A$$

$$I_3 = 0.171\ A$$

Ej. 1)



I por cada elemento.

Malla 1:

$\sum_1 V = 0$

$4 + 5 - 50I_1 - 6 - 50I_1 - 50I_2 = 0$

$3 - 100I_1 - 50I_2 = 0$ (1)

Malla 2:

$\sum_2 V = 0$

$5 - 50I_2 - 50I_1 - 50I_2 = 0$

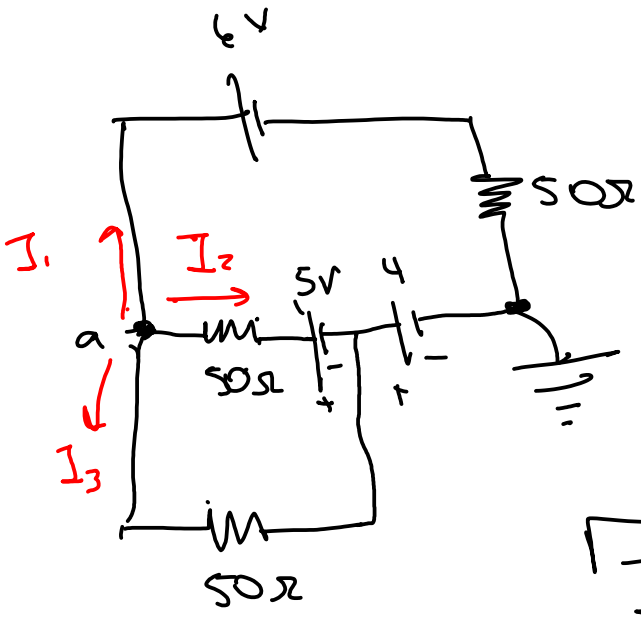
$5 - 50I_1 - 100I_2 = 0$ (2)

$I_1 = 6.67\,mA$

$I_2 = 46.67\,mA$

$I_3 = I_1 + I_2 \sim 53\,mA$

Por Nodos:



$\sum I = 0$

$I_1 + I_2 + I_3 = 0$

$\frac{V_a - 6}{50} + \frac{V_a - 5 - 4}{50} + \frac{V_a - 4}{50} = 0$

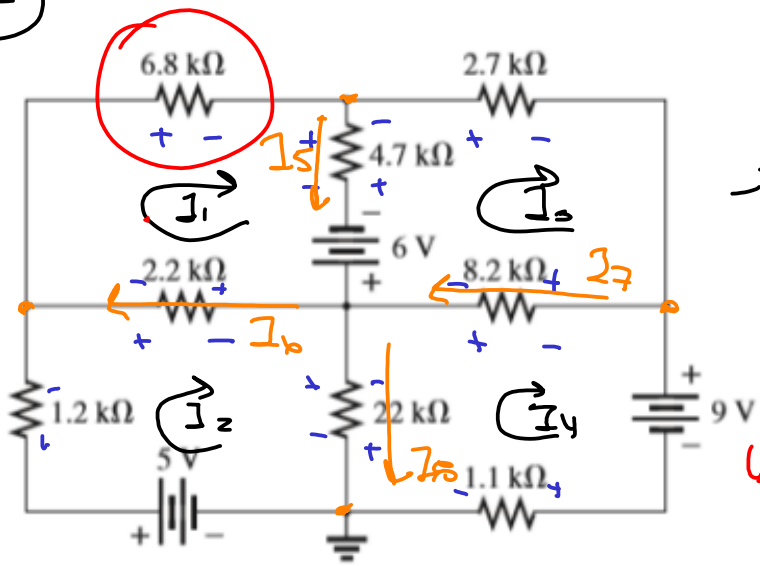
$3V_a = 19 \rightarrow V_a = \frac{19}{3}\,V$

$I_1 = 6.67\,mA$

$I_2 = -53.3\,mA$

$I_3 = 46.67\,mA$

Ej 2)



Malla 1:

$$-2.2I_1 - 6.8I_1 - 4.7I_1 + 6 + 2.2I_2 + 4.7I_3 = 0$$

$$6 - 13.7I_1 + 2.2I_2 + 4.7I_3 = 0 \quad (1)$$

Malla 2:

$$5 - 1.2I_2 - 2.2I_2 - 22I_2 + 2.2I_1 + 22I_4 = 0$$

$$5 - 25.4I_2 + 2.2I_1 + 22I_4 = 0 \quad (2)$$

Malla 3:

$$-6 - 13.6I_3 + 4.7I_1 + 8.2I_4 = 0 \quad (3)$$

Malla 4:

$$-9 - 31.3I_4 + 22I_2 + 8.2I_3 = 0 \quad (4)$$

$I_1 = 33.12\ \mu A$

$I_2 = -638.37\ \mu A$

$I_3 = -883.37\ \mu A$

$I_4 = -962.66\ \mu A$

$I_5 = I_1 - I_3 = 916.49\ \mu A$

$I_6 = I_1 - I_2 = 671.49\ \mu A$

$I_7 = I_3 - I_4 = 84.29\ \mu A$

$I_8 = I_2 - I_4 = 329.29\ \mu A$

$$V_i = I_i R_i$$