Gabriel Conte 2270234
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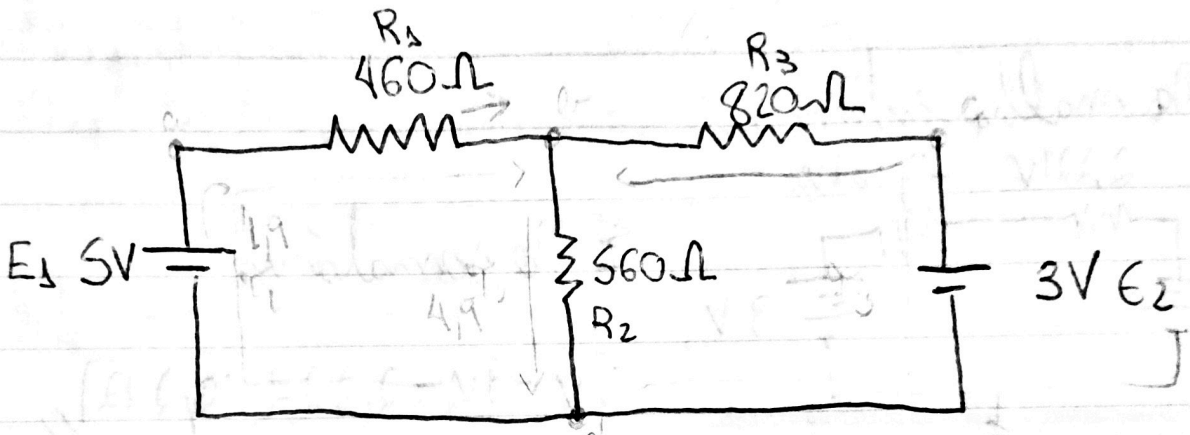
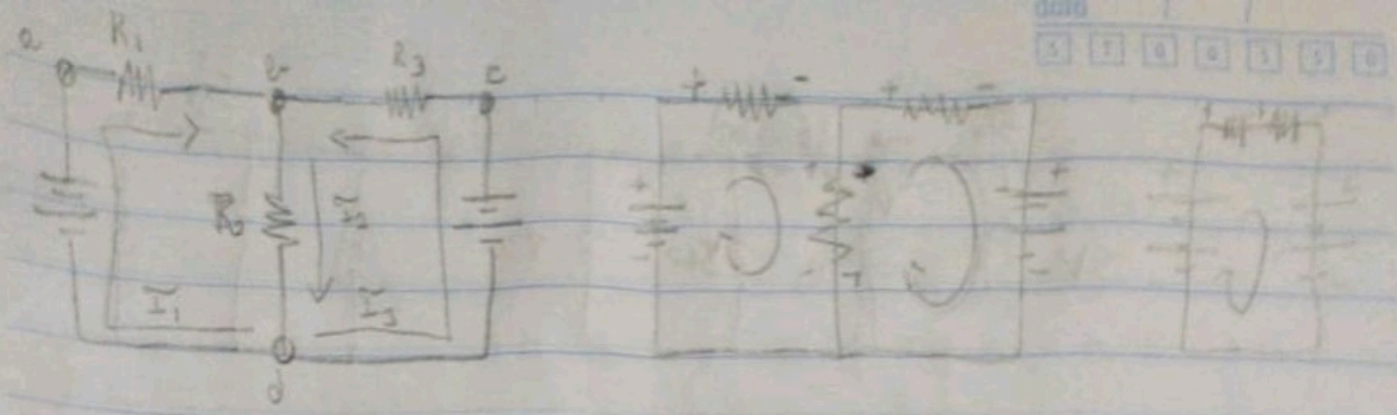


Corrente	Medido (A)	Teorico (A)
I_1	4,72m	4,65m
I_2	5,03m	5,1m
I_3	9,31m	9,45m



$$\begin{cases} V_{R_1} + V_{R_2} - E_1 = 0 \\ V_{R_3} - E_2 + V_{R_2} = 0 \\ V_{R_1} + V_{R_3} + E_2 - E_1 = 0 \end{cases} \Rightarrow \begin{cases} I_1 R_1 + I_2 R_2 = 5 \\ I_3 R_3 + I_2 R_2 = 3 \\ I_1 R_1 + I_3 R_3 = 5 - 3 = 2 \end{cases}$$

Nút b: $I_1 + I_3 - I_2 = 0 \Rightarrow I_2 = I_1 + I_3$

$$\Rightarrow I_1 \cdot 460 + (I_1 + I_3) \cdot 560 = 5 \Rightarrow \begin{cases} 1020 I_1 + 560 I_3 = 5 \\ 460 I_1 + 920 I_3 = 2 \end{cases}$$

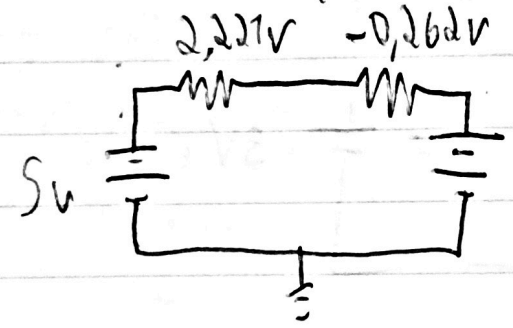
$L_2 \to L_2 - \frac{460}{1020} L_1$

$$\Rightarrow \begin{cases} 1020 I_1 + 560 I_3 = 5 \\ 0 + 567{,}45 I_3 = -0{,}2549 \end{cases} \Rightarrow |I_3| \approx +0{,}45 \text{ mA}$$

$$\Rightarrow I_1 = \frac{5 - 560 \cdot 0{,}45 \cdot 10^{-3}}{1020} \approx 4{,}65 \text{ mA}$$

$$\Rightarrow I_2 = (4{,}65 + 0{,}45)\text{m} = 5{,}1 \text{ mA}$$

iii) Na malha externa:

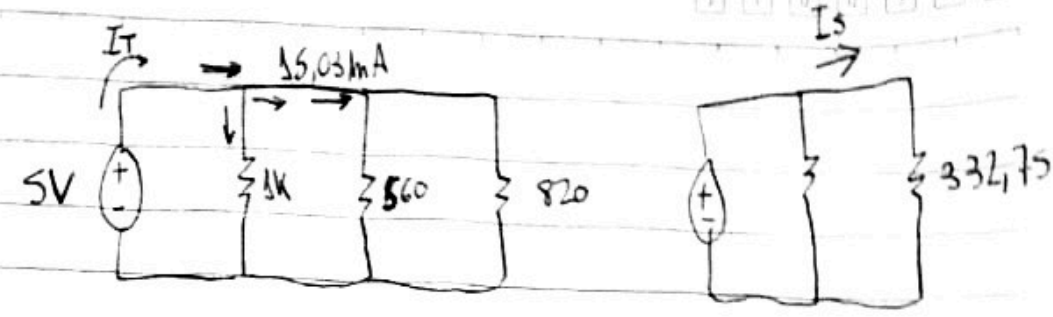


* No somatório

$5V - 3V - 2,22 - (-0,222)$,,

└ Aproximadamente zero,

Logo a tensão total é de aproximadamente $|5-3| = 2V$ //.



$R_T = R_{1\|2\|3} = 249,67\,\Omega$

$I_T = \frac{5}{249,67} = 20,03\,mA$

$5V = I_1 \cdot 1000 \qquad \frac{5}{1000} = 5\,mA$

$5V = I_2 \cdot 560 \qquad I_2 = 8,93\,mA$

$5V = I_3 \cdot 820 \qquad I_3 = 6,10\,mA$

Nodal

$I_T = I_1 + I_S$

$20,03 = 5 - I_S \qquad I_S = 15,03\,mA$

$I_S = I_2 + I_3 \qquad 15,03 = 8,93 + I_3 \qquad I_3 = 6,1\,mA$

$I_2 = \frac{5}{560} = 8,93\,mA$

	Valor medido (A)	Teorica (A)
I_1	4,9 mA	5 mA
I_2	8,79 mA	8,93 mA
I_3	6,03 mA	6,1 mA