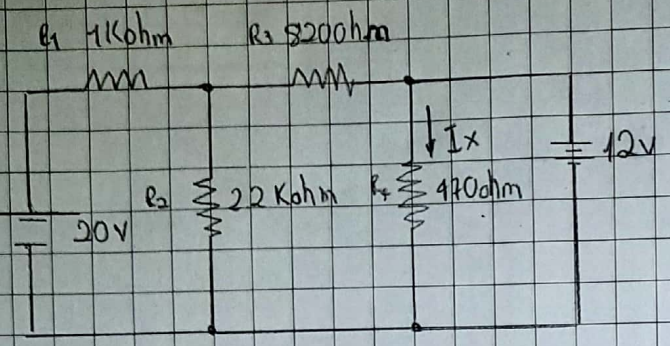
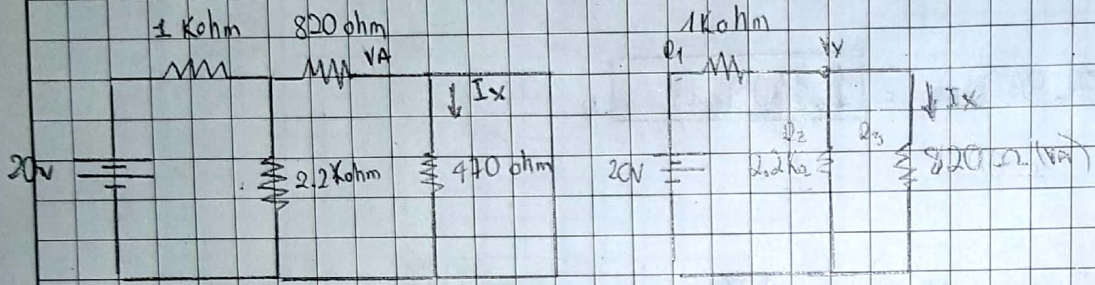
2.2 Kohm = 2200 ohm




• Haciendo cero (cortocircuitando) la fuente de 12v







$$\frac{0.82\,K\Omega \cdot 2.2\,K\Omega}{0.82\,K\Omega + 2.2\,K\Omega} = 0.5973\,K\Omega \quad R_2 \| R_3$$

$$Req = 1\,K\Omega + 0.5973\,K\Omega$$

$$Req = 1.5973\,K\Omega$$

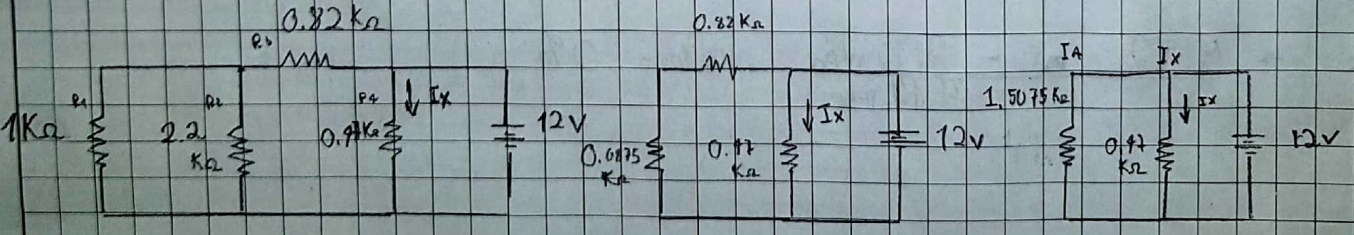
$$I_T = \frac{20v}{1.5973\,K\Omega} = 12.5207\,mA$$

$$I_x = \left(\frac{2200}{2200 + 820}\right) 12.5207\,mA = \boxed{9.121\,mA}$$

$$V_A = 9.121\,mA \cdot 0.82\,K\Omega$$

$$\boxed{V_A = 7.47922\,v}$$

• Haciendo Cortocircuito a la fuente de 20v




$$R_1 \| R_2 = \frac{1\,K\Omega \cdot 2.2\,K\Omega}{1\,K\Omega + 2.2\,K\Omega} = 0.6875\,K\Omega$$

$$R_{1\|2} + R_3 = 0.6875\,K\Omega + 0.82\,K\Omega = 1.5075\,K\Omega$$

$$Req = \frac{1.5075\,K\Omega \cdot 0.47\,K\Omega}{1.5075\,K\Omega + 0.47\,K\Omega} = 0.35829\,K\Omega$$

$$I_T = \frac{12v}{0.35829\,K\Omega} = 33.492\,mA$$

$$I_A = \left(\frac{1507.5\,\Omega}{1507.5\,\Omega + 470\,\Omega}\right) 33.492\,mA$$

$$\boxed{I_A = 25.5318\,mA}$$

$I_x = \left(\frac{470\,\Omega}{1507{,}5\,\Omega + 470\,\Omega}\right) 33.492\,mA$

$I_x = 7.9601\,mA$

$V_A = 7.9601\,mA \cdot 0.82\,K\Omega$

$V_A = 6.5272\,V$

$V_A$ Total:

$V_{AT} = 7.4792\,V - 6.5272\,V = 0.952\,V$ // $952\,mV$ //

$I_x$ Total: $9.121\,mA - 7.9601\,mA = 1.1609\,mA$ //

Errores:

$V_{AT} = \frac{952\,mV - 952\,mV}{952\,mV} \cdot 100\% = 0\%$

$I_{xT} = \frac{1.16\,mA - 1.16\,mA}{1.16\,mA} \cdot 100\% = 0\%$

($V_A$)

$V_{b=0} = \frac{7.479\,V - 7.48\,V}{7.479\,V} \cdot 100\% = 0.01\%$

$(V_A)_{V_1=0} = \frac{6.5272\,V - 6.53}{6.5272\,V} \cdot 100\% = 0.04\%$

$I_{x\,V_2=0} = \frac{9.12\,mA - 9.12\,mA}{9.12\,mA} \cdot 100\% = 0\%$

$I_{x\,V_1=0} = \frac{7.9601\,mA - 7.96}{7.9601\,mA} \cdot 100\% = 0.001\%$