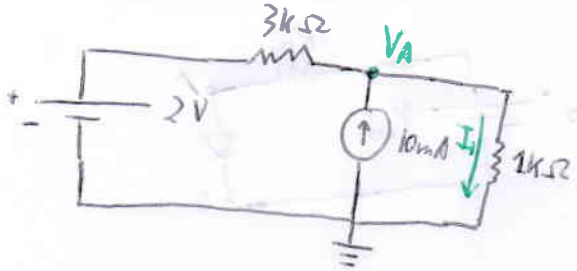
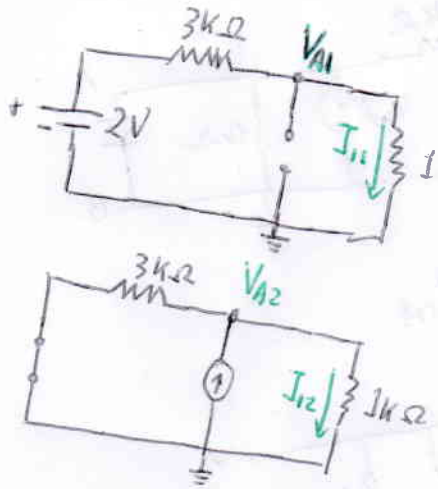
Si lo hacemos por superposición

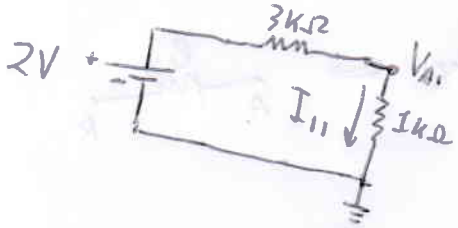




$V_A = V_{A1} + V_{A2}$

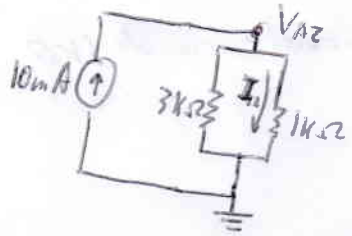
$I_1 = I_{11} + I_{12}$

Simplificando

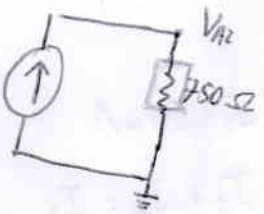


$$\Rightarrow I_{11} = \frac{2V}{3k\Omega + 1k\Omega} = 0{,}5\,mA$$

$$V_{A1} = 1k\Omega \cdot 0{,}5mA = 0{,}5V$$



$\Leftrightarrow$

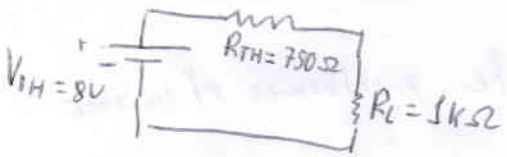


$$\Rightarrow V_{A2} = 750\Omega \cdot 10mA = 7{,}5V$$

$$\Rightarrow I_{12} = \frac{V_{A2}}{1k\Omega} = \frac{7{,}5V}{1k\Omega} = 7{,}5\,mA$$

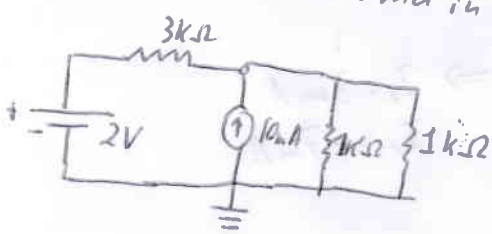
$$\Rightarrow I_1 = 8mA \quad V_A = 8V \quad \Rightarrow V_{AB} = 8V$$

Realizamos la comprobación sustituyendo el diodo por una resistencia de carga de valor $R_L = 1k\Omega$.

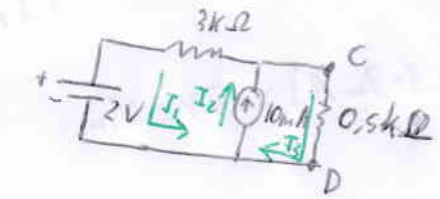


$\Rightarrow$ La intensidad que atraviesa la resistencia de carga es $I_L = \frac{8V}{1{,}75k\Omega} = 4{,}57\,mA$.

Si calculamos esta misma intensidad por Kirchhoff:

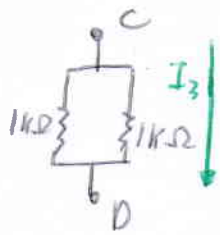


$\sim$



$$I_2 = I_1 + I_3$$

$$-3I_1 + 0{,}5I_3 - 2 = 0 \Rightarrow \begin{cases} I_1 + I_3 = 10 \\ -3I_1 + 0{,}5I_3 = 2 \end{cases} \Rightarrow \begin{cases} I_1 = 0{,}86\,mA \\ I_3 = 9{,}14\,mA \end{cases}$$



$$\Rightarrow I_L = \frac{I_3}{2} = 4{,}57\,mA$$