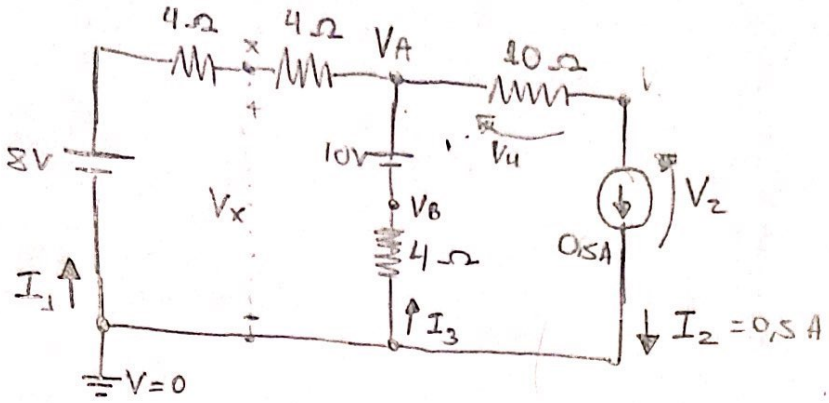
2-



1- nó A

$I_1 + I_3 = I_2$

$I_1 + I_3 = 0,5A$

$I_1 = \frac{8 - V_a}{4}$

$I_3 = \frac{-V_b}{4}$

$I_2 = \frac{V_a - V_2}{10} = 0,5$

2- $V_a - V_b = 10$

$V_a = 10 + V_b$

3- $2 - \frac{V_a}{4} - \frac{V_b}{4} = 0,5$

$\frac{V_a + V_b}{4} = 1,5$

$V_a + V_b = 6$

$(10 + V_b) + V_b = 6$

$2V_b = 6 - 10$

$2V_b = -4$

$V_b = -2$

$V_a = 10 + V_b$

$V_a = 8$

4- $I_1 = \frac{8 - V_a}{4} = \frac{0}{4}$

$\boxed{I_1 = 0\ A}$

5- $V_a - V_2 = 5$

$8 - V_2 = 5$

$\boxed{V_2 = 3,0\ V}$

6- $I_1 = \frac{8 - V_x}{4} \Rightarrow 2 - \frac{V_x}{4}$

$0 = 2 - \frac{V_x}{4} \Rightarrow 2 = \frac{V_x}{4}$

$\boxed{V_x = 8,0\ V}$