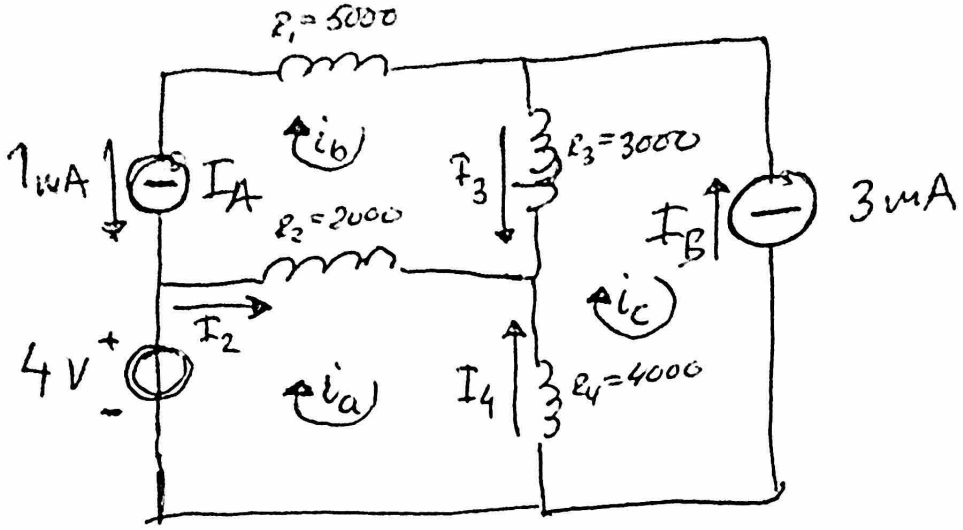
PROBLEM 2



KVL for the left mesh (I_a): $V_A - R_2 i_a + R_2 i_b + R_4 i_a - R_4 i_c = 0 \Rightarrow$

$i_c = -I_B$

$i_b = -I_A$

$$\Rightarrow V_A - (R_2 - R_4) i_a - R_2 I_A + R_4 i_B = 0$$

$$i_a = \frac{V_A - R_2 I_A + R_4 i_B}{R_2 - R_4}$$

$$i_a = \frac{4 - 2000 \cdot 0{,}001 + 4000 \cdot 0{,}003}{2000 - 4000}$$

$$i_a = 0{,}007$$

$$I_2 = i_a$$

$$\begin{cases} I_3 = I_b - I_c \Rightarrow -0{,}001 + 0{,}003 = 0{,}002\ A \\ I_4 = I_a - I_c \Rightarrow -0{,}007 + 0{,}003 = -0{,}004\ A \\ I_2 = 0{,}007\ A \end{cases}$$