Task 2: Kirchhoff rules

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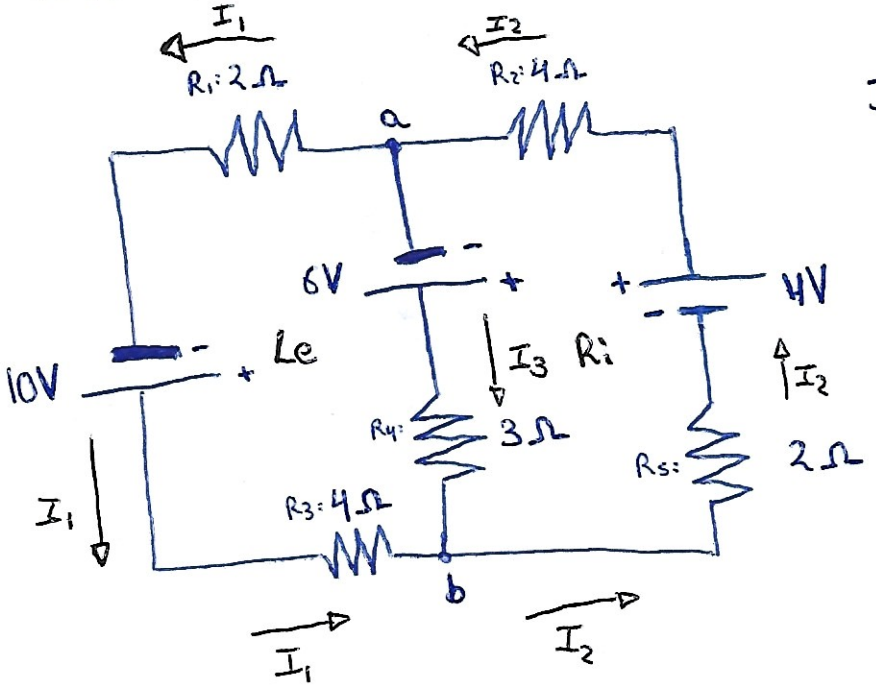

Junctions ② → a: $I_2 = I_1 + I_3$

b: ~~$I_2 = I_3 + I_1$~~

Loops ② → Le: $6 - 3 \cdot I_3 + 4I_1 - 10 + 2I_1 = 0$

Ri: $4 \cdot I_2 - 4 + 2I_2 + 3I_3 - 6 = 0$

$$\begin{cases} I_2 = I_1 + I_3 \\ 6I_1 - 3I_3 - 4 = 0 \\ 6I_2 + 3I_3 - 10 = 0 \end{cases} \rightarrow \begin{cases} 6I_1 - 3I_3 = 4 \\ 6I_1 + 9I_3 = 10 \end{cases} \rightarrow \begin{cases} I_2 = \frac{17}{12}\,A \\ I_3 = \frac{1}{2}\,A \\ I_1 = \frac{11}{12}\,A \end{cases}$$

The current was well oriented

The current through R_1 and R_3 is $\frac{11}{12}A \approx 0'92A$

The current through R_2 and R_5 is $\frac{17}{12}A \approx 1'42A$

The current through R_4 is $\frac{1}{2}A = 0'5A$