

Applying Kirchhoff's Laws in 5 easy steps

1) Label all currents

Choose any direction

2) Label +/− for all elements

Current goes $+$ \Rightarrow $-$ (for resistors)
Long side is $+$ for battery

3) Choose loop and direction

Must start on wire, not element.

4) Write down voltage drops

First sign you hit is sign to use.

5) Write down node equation $I_{in} = I_{out}$

We'll do calculation today

It's actually the easiest thing to do!

$$-E_1 + I_1 R_1 + E_3 - I_4 R_4 + I_5 R_5 = 0$$

