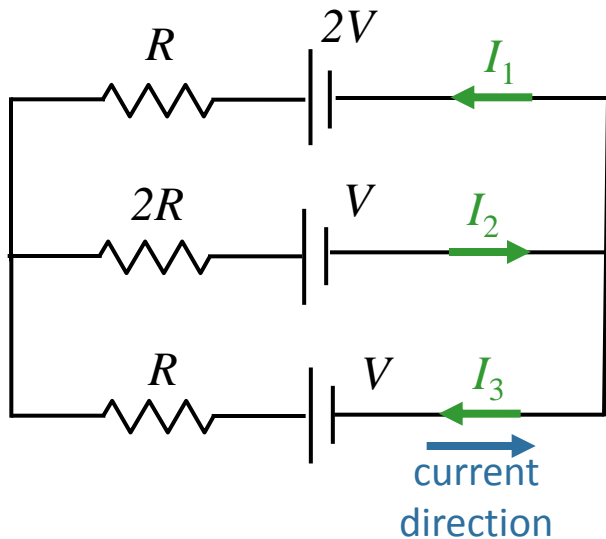


Calculation: Simplify

In this circuit, assume V and R are known.

What is I_2 ?



We have 3 equations and 3 unknowns.

$$I_2 = I_1 + I_3$$

$$-2V + I_1R - I_3R + V = 0 \quad (\text{outside})$$

$$-V - I_2(2R) - I_1R + 2V = 0 \quad (\text{top})$$

With this simplification, you can verify:

$$I_2 = (1/5) V/R$$

$$I_1 = (3/5) V/R$$

$$I_3 = (-2/5) V/R$$