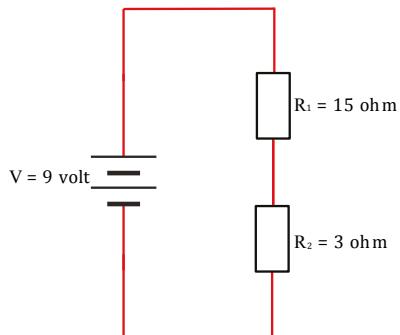


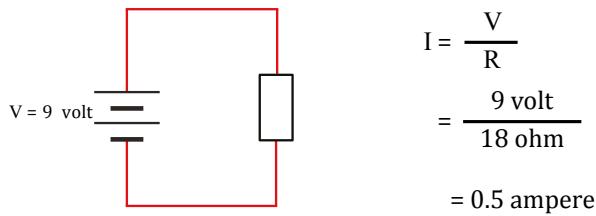
Finding the potential difference across each of a pair of resistors connected in series



$$\begin{aligned}R &= R_1 + R_2 \\&= 15 \text{ ohm} + 3 \text{ ohm} \\&= 18 \text{ ohm}\end{aligned}$$

A diagram of a single resistor with a 7.5 volt potential difference across it, calculated as $V_1 = R_1 \times I$.

$$\begin{aligned}V_1 &= R_1 \times I \\&= 15 \text{ ohm} \times 0.5 \text{ ampere} \\&= 7.5 \text{ volt}\end{aligned}$$



$$\begin{aligned}I &= \frac{V}{R} \\&= \frac{9 \text{ volt}}{18 \text{ ohm}} \\&= 0.5 \text{ ampere}\end{aligned}$$

A diagram of a single resistor with a 1.5 volt potential difference across it, calculated as $V_2 = R_2 \times I$.

$$\begin{aligned}V_2 &= R_2 \times I \\&= 3 \text{ ohm} \times 0.5 \text{ ampere} \\&= 1.5 \text{ volt}\end{aligned}$$

$$\begin{aligned}V &= V_1 + V_2 \\&= 7.5 \text{ volt} + 1.5 \text{ volt} \\&= 9 \text{ volt}\end{aligned}$$