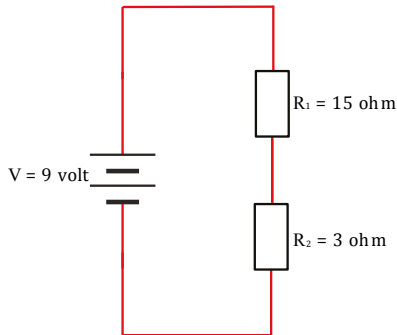


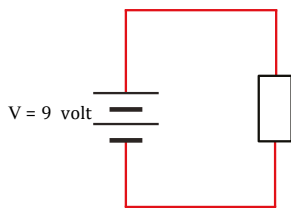
Finding the potential difference across each of a pair of resistors connected in series



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



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



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



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

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