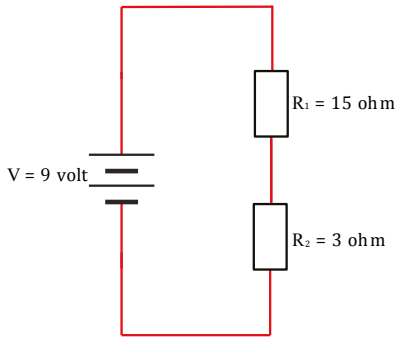
Finding the potential difference across each of a pair of resistors connected in series



$R = R_1 + R_2$

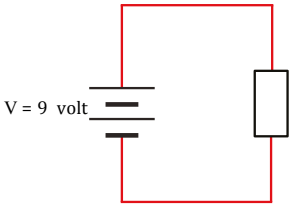
$= 15 \text{ ohm} + 3 \text{ ohm}$

$= 18 \text{ ohm}$

$V_1 = R_1 \times I$

$= 15 \text{ ohm} \times 0.5 \text{ ampere}$

$= 7.5 \text{ volt}$



$I = \frac{V}{R}$

$= \frac{9 \text{ volt}}{18 \text{ ohm}}$

$= 0.5 \text{ ampere}$

$V_2 = R_2 \times I$

$= 3 \text{ ohm} \times 0.5 \text{ ampere}$

$= 1.5 \text{ volt}$

$V = V_1 \text{ x} V_2$

$= 7.5 \text{ volt} + 1.5 \text{ volt}$

$= 9 \text{ volt}$