

Ohm's Law

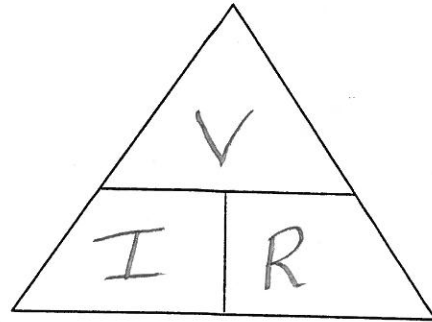
Georg Ohm discovered the mathematical relationship between:

Voltage (V), Current (I), Resistance (R),
 units = volts (V) units = amperes (A) units = ohms (Ω)

Formula:

$$\begin{aligned} V &= I \cdot R \\ I &= V \div R \\ R &= V \div I \end{aligned}$$

OR



When doing calculations, you must Show your work!
3 steps are required for full marks.

- The 3 steps are:
1. Write down the formula you require.
 2. Plug in the known values. + units!
 3. Write down your answer with units.

Sample Calculations: Show your work. 3 steps for each answer!!!

1. If a circuit has a $3V$ battery and a current of $2A$ what is the resistance?



1. $R = V \div I$
2. $R = 3V \div 2A$
3. $R = 1.5 \Omega$

2. What is the voltage through a 10Ω light bulb that has $2A$ flowing through it?

1. $V = I \cdot R$
2. $V = 2A \cdot 10 \Omega$
3. $V = 20V$

3. If a $6V$ battery is used with a 15Ω bulb, what is the current flowing through the circuit?

1. $I = V \div R$
2. $I = 6V \div 15 \Omega$
3. $I = 0.4A$