


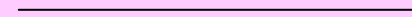

Ohm's Law

	Resistance	Current	Voltage
Definition	The opposition to the flow of charges	The flow of electrons through a circuit	Potential Difference (the push behind electricity)
Symbol	R	I	V
Equation	$R = \frac{V}{I}$	$I = \frac{V}{R}$	$V = I R$

Resistance

Current

Voltage

Label	Ω - Omega symbol	A - amperes	V - volts
Depends on	<p>The size of the wire. Thick wire – Less resistance  Thin wire – More resistance  Long wire – more resistance Short wire- less resistance </p>	<p>The resistance in the circuit</p> <p>Greater resistance- less current</p> <p>Less resistance the greater the current</p>	<p>The voltage source</p> <p>Greater Potential difference = greater voltage</p>

To obey Ohm's law means a conductor has a constant resistance regardless of the voltage.

- If you know two of the three variables you should be able to solve for the third.
- When using Ohm's law always use the 3 step form
 - 1. Write the equation
 - 2. Replace the known values
 - 3. Solve the problem
 - . Label with the correct unit of measurement.

Practice problems

In a circuit, 0.5 A is flowing through the bulb. The voltage across the bulb is 4.0 V. What is the bulb's resistance?

1. Write the equation



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

2. Replace the known values



$$R = \frac{4.0}{0.5}$$

3. Solve



$$R = 8$$

4. Label



$$R = 8 \, \Omega$$

Practice problem

- You light a light bulb with a 1.5 volt battery. If the bulb has a resistance of 10 ohms, how much current is flowing?

1. Write the equation

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

2. Replace the known values

$$I = \frac{1.5}{10}$$

3. Solve

$$I = 0.15$$

4. Label correct sig.fig

$$I = 0.2 \text{ A}$$

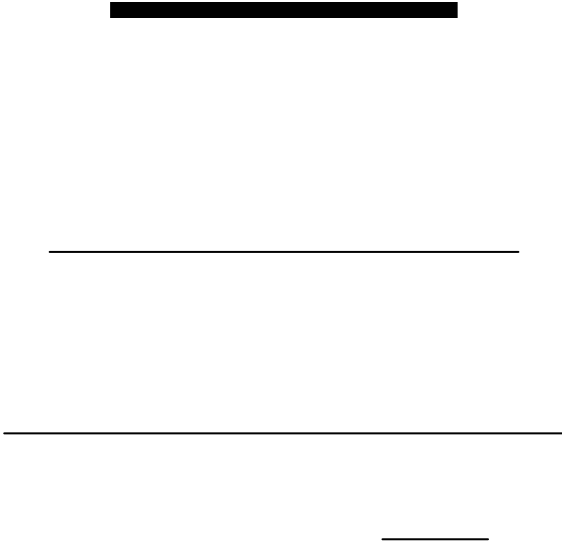
Ohm's Law

	Resistance	Current	Voltage
Definition			
Symbol			
Equation			

Resistance

Current

Voltage

Label			
Depends on	<p>The size of the wire.</p>  <p>The diagram shows a thick horizontal line representing a wire. Below it are three thinner horizontal lines of increasing length, representing a wire that tapers from thick to thin. At the bottom right, there is a very short, thin horizontal line.</p>	The resistance in the circuit	The voltage source

To obey Ohm's law means a conductor has a constant resistance regardless of the voltage.

- If you know two of the three variables you should be able to solve for the third.
- When using Ohm's law always use the 3 step form
 - 1. Write the equation
 - 2. Replace the known values
 - 3. Solve the problemLabel with the correct unit of measurement.

Practice problems

In a circuit, 0.5 A is flowing through the bulb. The voltage across the bulb is 4.0 V. What is the bulb's resistance?

1. Write the equation 

2. Replace the known values 

3. Solve 

4. Label 

Practice problem

- You light a light bulb with a 1.5 volt battery. If the bulb has a resistance of 10 ohms, how much current is flowing?

1. Write the equation 

2. Replace the known values 

3. Solve 

4. Label 