

CALCULATING CURRENT

Name _____

Ohm's Law states that $I = \frac{V}{R}$

where I = current (amperes)

V = voltage (volts)

R = resistance (ohms)

Solve the following problems.

1. What is the current produced with a 9-volt battery through a resistance of 100 ohms?

2. Find the current when a 12-volt battery is connected through a resistance of 25 ohms.

3. If the potential difference is 120 volts and the resistance is 50 ohms, what is the current?

4. What would be the current in Problem 3 if the potential difference were doubled?

5. What would be the current in Problem 3 if the resistance were doubled?

CALCULATING RESISTANCE

Name _____

$$R = \frac{V}{I} \quad \text{Resistance (ohms)} = \frac{\text{Voltage (volts)}}{\text{Current (amperes)}}$$

Solve the following problems.

1. What resistance would produce a current of 200 amperes with a potential difference of 2,000 volts?

2. A 12-volt battery produces a current of 25 amperes. What is the resistance?

3. A 9-volt battery produces a current of 2.0 amperes. What is the resistance?

4. An overhead wire has a potential difference of 2,000 volts. If the current flowing through the wire is one million amperes, what is the resistance of the wire?

5. What is the resistance of a light bulb if a 120-volt potential difference produces a current of 0.8 amperes?

OHM'S LAW PROBLEMS

Name _____

Using Ohm's Law, solve the following problems.

1. What is the current produced by a potential difference of 240 volts through a resistance of 0.2 ohms?

2. What resistance would produce a current of 120 amps from a 6-volt battery?

3. What voltage is necessary to produce a current of 200 amperes through a resistance of 1×10^{-3} ohms?

4. What is the current produced by a 9-volt battery flowing through a resistance of 2×10^{-4} ohms?

5. What is the potential difference if a resistance of 25 ohms produces a current of 250 amperes?
