**Practice Problems Calculating Voltage, Resistance, Current**

In this section, you will find some problems based on diagrams and others without diagrams. In all cases, show your work.

1. How much current is in a circuit that includes a 9-volt battery and a bulb with a resistance of 3 ohms?

2. How much current is in a circuit that includes a 9-volt battery and a bulb with a resistance of 12 ohms?

3. A circuit contains a 1.5 volt battery and a bulb with a resistance of 3 ohms. Calculate the current.

4. A circuit contains two 1.5 volt batteries and a bulb with a resistance of 3 ohms. Calculate the current. **13.3**

5. What is the voltage of a circuit with 15 amps of current and toaster with 8 ohms of resistance?

6. A light bulb has a resistance of 4 ohms and a current of 2 A. What is the voltage across the bulb?

7. How much voltage would be necessary to generate 10 amps of current in a circuit that has 5 ohms of

resistance?

8. How many ohms of resistance must be present in a circuit that has 120 volts and a current of 10 amps?

# 9. An alarm clock draws 0.5 A of current when connected to a 120 volt circuit. Calculate its resistance.

**Circuit Diagram Worksheet**

Convert the following descriptions to schematic circuit diagrams. Remember to always use a ruler when drawing circuit diagrams.

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| 1. | Draw a circuit diagram containing a battery with 2 dry cells in series, one pathway with an open switch and a lamp. Show the direction of electron flow. | 3. | Draw a circuit diagram containing a battery with 3 cells in series, two pathways with a lamp on each path. Add a switch that would control the lamps on both paths. Show the direction of electron flow. |
| 2. | Draw a circuit diagram containing a battery with 2 dry cells in parallel, one pathway with a closed switch and a lamp. Show the direction of electron flow. | 4. | Draw a circuit diagram containing a battery with 4 cells in series, three pathways and a lamp on each path. Add switches to control each of the lamps and a fourth switch to control all of the lamps. Show the direction of electron flow. |