

V = IR and Ohm's Law Worksheet

In this worksheet, 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.
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.
10. A portable CD player uses two 1.5 V batteries. If the current in the CD player is 2 A, what is its resistance?
11. You have a large flashlight that takes 4 D-cell batteries. If the current in the flashlight is 2 amps, what is the resistance of the light bulb? (Hint: A D-cell battery has 1.5 volts.)

12. Use the diagram below to answer the following problems.