

Science 10 Ohms Law Practice Questions

1. How much current is in a circuit that includes a 9 volt battery and a bulb with a resistance of 3 ohms?
2. A circuit contains a 1.5 V battery and a bulb with a resistance of 3 ohms. Calculate the current.
3. A circuit contains two 1.5V batteries and a bulb with a resistance of 3ohms. Calculate the current.
4. What is the voltage of a circuit with 15 amps of current and a toaster with 8 ohms of resistance?
5. A light bulb has a resistance of 4 ohms and a current of 2A. What is the voltage across the bulb?
6. How many ohms of resistance would be present in a circuit that was 120 volts and a current of 10 amps?
7. A portable CD player uses two 1.5V batteries. If the current in the CD player is 2A, what is the resistance?
8. You have a large flashlight bulb that takes 4D cell batteries. If the current in the CD player is 2A, what is the resistance of the light bulb? (HINT: A D-cell battery has 1.5 volts)
9. What happens to the current in a circuit if a 1.5 volt battery is removed and replaced by a 9 volt battery?
10. What is the relationship between resistance and current?
11. What is the relationship between voltage and current?
12. What could you do to a closed circuit consisting of 2 batteries, 2 light bulbs and a switch to INCREASE the current?
13. What could you do to a closed circuit consisting of 2 batteries, 2 light bulbs and a switch to DECREASE the current?
14. Circuit A has a 6 volt source, circuit B has a 12 volt source. Both circuits are wired the same which one has the brighter lights? Explain why using the terms electric potential and current.
15. How many 1.5V batteries would be needed to power a circuit containing 3 amps of current and 6 ohms of resistance?

Answers to problems (so you can check your answers while you work)

- | | |
|----------------|------------------|
| 1. 3A | 7. 1.5 Ω |
| 2. 0.5A | 8. 3 Ω |
| 3. 1A | 15. 12 batteries |
| 4. 120 volts | |
| 5. 8 volts | |
| 6. 12 Ω | |