

Ohms Law Practice

1. How much current is in a circuit that includes a 9- volt battery and a bulb with 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 1.5V battery and a bulb with a resistance of 3 ohms. Calculate the current.
4. A circuit contains two 1.5V 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 a toaster with 8 ohms of resistance.
6. A light bulb has a resistance of 4 ohms and a current of 2A. 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 0.5A 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. a) Circuit A has 6 volts
Circuit B has 12 volts

b) Circuit A $I = ?$
 $V = 6V$
 $R = 6 \Omega$

Circuit B $I = ?$
 $V = 12V$
 $R = 6 \Omega$

c) Circuit A $I = ?$
 $V = 6V$
 $R = 12 \Omega$

Circuit B $I = ?$
 $V = 12V$
 $R = 12 \Omega$

d) Is the bulb brighter in circuit A or B?
13. What happens to the current in a circuit if a 1.5- volt battery is removed and replaced by a 9-volt battery?
14. What is the relationship between resistance and current?
15. What is the relationship between voltage and current?
16. What could you do to a closed circuit consisting of 2 batteries, 2 light bulbs and a switch to INCREASE the current?

17. What could you do to a closed circuit consisting of 2 batteries, 2 light bulbs and a switch to DECREASE the current?
18. You have four 1.5 V batteries, a 1Ω bulb a 2Ω bulb, and a 3Ω bulb. Draw a circuit you could build to create each of the following currents.
- 1.0 A
 - 0.5 A
 - 6.0 A
 - 0.6 A
 - 2.0 A