PROBLEMS BASED ON OHM’S LAW

1. Bicycles with battery operated lights often have different size bulbs for the front and rear lights. The filament in the front lamp has a resistance of 3 ohms. It takes a current of 0.6 A. What voltage does it work at?
2. If a toaster produces 12 ohms of resistance in a 120-volt circuit, what is the amount of current in the circuit?
3. How much current is in a circuit that includes a 9-volt battery and a bulb with a resistance of 3 ohms?
4. A circuit contains a 1.5 volt battery 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. What happens to the current in a circuit if a 1.5-volt battery is removed and is replaced by a 9-volt battery?
12. A 110 volt wall outlet supplies power to a strobe light with a resistance of 2200 ohms. How much current is flowing through the strobe light?
13. A CD player with a resistance of 40 ohms has a current of 0.1 amps flowing through it. Calculate how many volts supply the CD player.
14. A 120-volt power source supplies a lamp with a resistance of 192 ohms. What is the current flow of the circuit?
15. What is the resistance of the circuit conductors when the conductor voltage drop is 3 volts and the current flowing through the conductors is 100 amperes?