ELECTRICITY UNIT ASSIGNMENT

1. 9.87 x 1025 electrons pass a point in 1.5 ms. Determine the current.
2. The current through a 50 Ω resistor is 2.5 A. What is the potential drop across the resistor?
3. Use proper symbols to draw a diagram of the following series circuit. Two cells are connected to a switch, a light bulb, an ammeter and two resistors. Include a voltmeter to measure the light bulb.
4. Use proper symbols to draw a diagram of the following parallel circuit. A DC generator connected to a motor, 2 lights and a master switch. Have a second switch wired to control only the motor and have fuses protect each of the lights.
5. If you were designing an electric toaster, would you use wire of high resistance or extremely low resistance? Why?
6. Three household items wired together in series have a total resistance of 35 Ω. Determine the electrical resistance of the clock, if the toaster has an electrical resistance of 15 Ω and the kettle has an electrical resistance of 17 Ω.
7. The following circuit has a total voltage of 12.0 V. Resistor 1 has a resistance of 6.4 Ω, and resistor 2 has a resistance of 3.9 Ω.
8. Determine the voltage at R1 and R2.
9. Determine the current at R1 and R2.
10. Determine the total resistance for the circuit.
11. Determine the total current for the circuit.



1. Explain how a fuse works and why it is unsafe to replace a fuse with a penny.
2. Explain how a step-up transformer and a step-down transformer work.