

Name: _____

Class Period: _____

Honors Physics: Circuits
Ohm's Law, Power, and Kilowatt-Hours

Conceptual Questions

1. Based on Ohm's Law, if the resistance in a circuit increases, what will happen to the current assuming the battery remains the same?

2. Which requires more current, a 100.0 W light bulb or a 75.0 W assuming a set voltage difference? Which has more resistance?

Mathematical Questions:

3. A hairdryer draws 1080.0 W of power when plugged into a 120.0 v outlet.
 - A. What is the resistance of this device?
 - B. How much charge passes through the hairdryer in 15.0 minutes? (Maybe this is why multiple hairdryers can blow fuses!)

4. What is the maximum amount of voltage that can be applied to a $2.70 \times 10^3 \Omega$ resistor if it is unsafe for this device to draw more than 0.250 Watts?

***See back for kilowatt-hour problems**

