**Problem Set #1**

1. A toaster has a resistance of 0.014k and is plugged into a 120-V outlet.

2. In the arctic, electric socks are useful because they have an electric wire woven into the socks. Usually, a 9-V battery powers the circuit in each of the socks. The current in the wire is 110mA. Determine the resistance of the wire in m.

3. A light bulb that is plugged into 0.120-kV outlet has a resistance of 0.192k.

a. What is the current through the bulb in mA?

b. How much energy the bulb consumes in 3 hours?

4. An electric blanket that is connected to 120-V outlet consumes 0.140kW

a. What is the resistance of the blanket in k?

b. What is the current through the blanket in kA? Step 1. Is not necessary

5. A 0.050k resistor carries a current 25 A.  
a. How much power in mW is used by this resistor?

b. What is the potential difference in kV across this resistor?