## **PROB. OF CHAP. 18: The Flow of Charges**

**18.1.** All commercial electric devices have identifying plates that specify their electrical characteristics. For example, a typical household device may be specified for a current of 6.0 A when connected to a 120 V source. What is the resistance of this device?

**18.3.** A total charge of 8.0 mC flows through the cross-section of a metallic wire in 4 s. What is the current in the wire?

**18.5.** When used at 120 V, a resistor carries a current of 0.6 A. What current is carried if the potential difference is lowered to 70 V?

**18.7.** A potential difference of 12 V causes a current of 0.4 A in a 3.2-m-long metallic wire with uniform radius 4.0 mm. What are (a) the resistance of the wire, and (b) the resistivity of the wire?

**18.13.** You often see birds resting on power lines that carry currents of 50 A. The copper wire on which the bird stands has a radius of 1.1 cm. Assuming that the bird's feet are 4.0 cm apart, calculate the potential difference across its body.