Name _____

Date _____

ISTANBUL INTERNATIONAL COMMUNITY SCHOOL
IICS SINCE 1911

Circuitry I

1. A net charge of 51 mC passes through the cross-sectional area of a wire in 14.0 s.

   A. What is the current in the wire? Give your answer in mA.

   B. How many electrons pass the cross-sectional area in 1.0 min? (Your answer should be between 1×10^{15} and 1×10^{20} electrons)

2. How much charge passes through a cross-sectional area of a copper wire in 1.0 s if I = 6.5 A?

3. The element of an electric heater has a resistance R when in operation. What is the resistance of a second heater that has a power output three times as large at the same operating voltage?

   A. $\frac{R}{9}$
   B. $\frac{R}{3}$
   C. 3R
   D. 9R

4. In the diagram, the voltmeter V has a resistance of 100 kΩ and is connected such as to measure the potential difference across the 100 kΩ resistor. The battery has an emf of 5.0 V and negligible internal resistance.