Name: _____   _____/ 15
Chapter 13.1 Homework
Conceptual Physics   Parent Signature: _____

Each numbered question is worth one point unless otherwise noted.

Reviewing Concepts

1. Draw a circuit diagram for a circuit containing a battery and two bulbs in series.

2. Is the current at every point in a series circuit the same? Explain.

3. One of the bulbs burns out in a string of lights. What happens to the current in the circuit?
What happens to the other bulbs?

4. Explain how to calculate the total resistance in a series circuit.

5. As more bulbs are added to a series circuit, what happens to the resistance of the circuit?
What happens to the brightness of the bulbs?

6. Explain Kirchhoff's voltage law.

Solving Problems

1. A series circuit contains 5-Ω, 3-Ω, and 8-Ω resistors. What is the total resistance of the circuit?

2. A circuit contains a 9-V battery and two identical bulbs. What is the voltage drop across each bulb?

3. A circuit contains a 12-V battery and two 3-Ω bulbs in series. Draw a circuit diagram and use it to find the current in the circuit and the voltage drop across each bulb.

4. A circuit contains a 12-V battery and three 1-Ω bulbs in series. Draw a circuit diagram and use it to find the current in the circuit.

5. Calculate the total resistance of each circuit as shown on #5 on page 335. Then, calculate the current in each. (3 points)
       A.

       B.

       C.

6. A circuit contains two 1-Ω bulbs in series. The current in the circuit is 1.5 A. What is the voltage provided by the batteries?

7. A circuit contains two identical resistors in series. The current is 3 A, and the batteries have a total voltage of 24-V. What is the total resistance of the circuit? What is the resistance of each device?