FLINN SCIENTIFIC

Name_____

AP Physics 1 Review Questions

Integrating Content, Inquiry and Reasoning

1. The resistance through one branch of a circuit is measured to be 15.0 Ω. A resistor is added the branch. The resistance is now measured to be 4.50 Ω.

   a. Was the new resistor added in series or parallel to the branch? Explain how you made your determination.

   b. What is the resistance value of the added resistor?

2. A circuit is constructed with a 12.0-V battery and three resistors, R_1, R_2, and R_3. The resistors are connected in series. The resistance values of R_1 and R_2 are the same. The current entering R_3 is 158 mA, and R_3 has a resistance of 50.0 Ω.

   a. Calculate the resistance of R_1 and R_2.

   b. Calculate the change in potential across the three resistors individually.

3. The circuit below is constructed using a voltage source of 110 V and five resistors of equal resistance, *R*. The current entering R_1 is 2.01 A.

   a. Determine the value of *R*.

   b. Calculate the change in potential (ΔV) across R_1.