

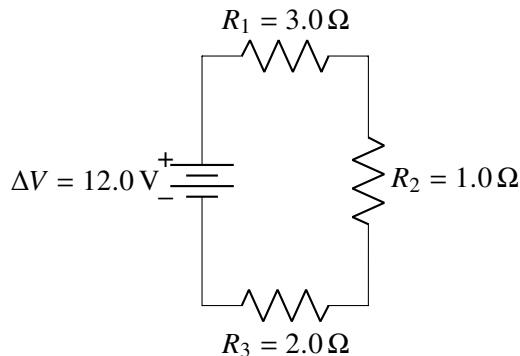
Student #: \_\_\_\_\_

Student Name: \_\_\_\_\_

**AP PHYSICS C: CIRCUIT ANALYSIS**

**Directions:** Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case and place the letter of your choice in the corresponding box on the student answer sheet.

**Note:** To simplify calculations, you may use  $g = 10 \text{ m/s}^2$  in all problems.

**Questions ??-??**

- What is the current flowing through the circuit shown in the diagram?
  - 1 A
  - 2 A
  - 4 A
  - 6 A
  - 12 A
- Which of the following statements is true about the circuit shown in the diagram?
  - The voltage drop is greatest across  $R_1$ , but  $R_1$  has the least amount of current flowing through it.
  - The voltage drop is greatest across  $R_2$ , but  $R_2$  has the least amount of current flowing through it.
  - The voltage drop is greatest across  $R_3$ , but  $R_3$  has the least amount of current flowing through it.
  - The voltage drops and current are equal across all resistors.
  - The voltage drop is greatest across  $R_1$ , but the current is equal at all points in the circuit.
- In this diagram, what is the power dissipated by all of the resistors in the circuit?
  - 2 W
  - 6 W
  - 12 W
  - 24 W
  - 48 W
- In the diagram, what is the voltage drop across the third resistor ( $R_3$ )?
  - 2 V
  - 3 V
  - 4 V
  - 6 V
  - 12 V
- Which of the following statements best summarizes a series circuit with three different resistances?
  - In all parts of the circuit, the resistances are different, the voltage drops are the same, and the current is different.
  - In all parts of the circuit, the resistances are the same, the voltage drops are the same, and the current is different.
  - In all parts of the circuit, the resistances are different, the voltage drops are different, and the current is the same.
  - In all parts of the circuit, the resistances are different, the voltage drops are the same, and the current is the same.
  - In all parts of the circuit, the resistances are the same, the voltage drops are the same, and the current is the same.