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Honors Physics
Period _____

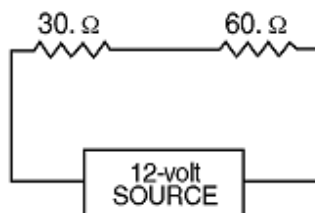
Date _____
Electric Circuits WS #5H
Mrs. Nadworny

A

Series Circuit

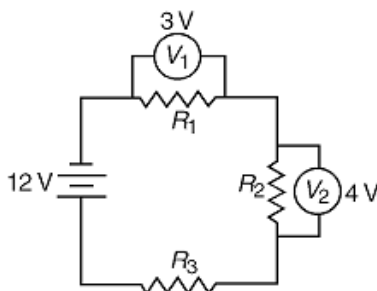
Directions: Read online textbook pages 730 – 740. Solve the following problems using the GUESS method and proper significant figures. Be sure to show ALL work.

1. A 30. ohm resistor and a 60. ohm resistor are connected in an electric circuit as shown below.



Compared to the electric current through the 30. ohm resistor, the electric current through the 60. ohm resistor is

- (A) larger (B) smaller (C) the same
2. The diagram below shows three resistors, R_1 , R_2 , R_3 , connected to a 12 volt battery.



If voltmeter V_1 reads 3 volts and voltmeter V_2 reads 4 volts, what is the potential drop across resistor R_3 ?

- (A) 5 V (B) 12 V (C) 0 V (D) 4 V
3. Three resistors, 5.0 Ω, 8.0 Ω, and 1.0 Ω, are in series in a circuit. The total current flowing through the circuit is 4.23 A.
- Calculate the equivalent resistance of the circuit.
 - Calculate the potential difference supplied by the battery.

Continued on next page

4. A 9.0 volt battery is connected in series to a 10. Ω resistor, a 2.0 Ω resistor and a 6.0 Ω resistor. There is an ammeter to measure the total current flowing through the circuit and a voltmeter to measure the potential difference across the 10. Ω resistor.
- Draw a circuit diagram using proper schematic symbols.
 - Calculate the equivalent resistance of the circuit.
 - Calculate the total current in the circuit.
 - Calculate the potential drop across each resistor.

Answers in size order: 0.50, 1.0, 3.0, 5.0, 14.0, 18, 59.2