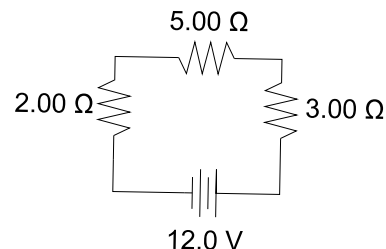


15 Electrical Circuits

BE CAREFUL TO USE PROPER SIGNIFICANT FIGURES ON ALL ANSWERS

1. What would be the required voltage of an energy source in a circuit with a current of 10.0 A and a resistance of 11.0 Ω ?
2. **Three** 1.50 V batteries are connected to form the energy source of a series circuit. The total resistance in the circuit is 100 Ω . How much current moves through the circuit?

3. What is the total resistance of the circuit shown in the diagram at right?



4. How much current moves through the 5.00 Ω resistor in that circuit?

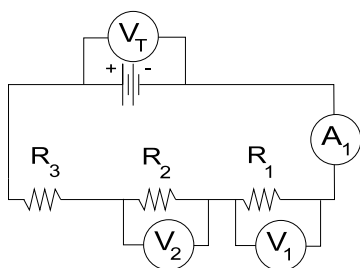
5. How much voltage is dropped across the 5.00 Ω resistor?
(Remember, you **must** use Ohm's Law to get the correct voltage drop.)

6. How much voltage is dropped across the 2.00 Ω resistor?

7. How much voltage is dropped across the 3.00 Ω resistor?

8. What is the **total** of the above three answers? The sum should match the battery voltage. If it doesn't, you need to go back and rework problems 5, 6, and 7.

9. The circuit shown below has three numbered resistors, three voltmeters, and an ammeter positioned as shown. Use Ohm's Law and the properties of series circuits to complete the table. Show any scratchwork in the free space below. Use appropriate significant figures in the table.



| Diagram Position | Voltage (V) | Current (A) | Resistance (Ω) |
|------------------|-------------|-------------|-------------------------|
| 1 | 6.00 | 0.0100 | |
| 2 | 4.00 | | |
| 3 | | | |
| Total | 15.0 | | |