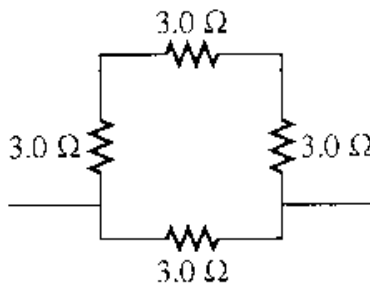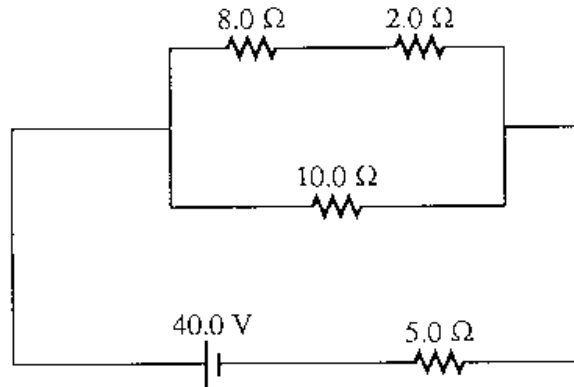# Equivalent Resistance Worksheet

Name:_____

1. Three resistors with values of 3.0 Ω, 6.0 Ω, and 12 Ω are connected in series. What is the equivalent resistance of this combination?

2. Three resistors with values of 4.0 Ω, 6.0 Ω, and 12.0 Ω are connected in parallel. What is their equivalent resistance?

3. Two resistors with values of 6.0 Ω and 12 Ω are connected in parallel. This combination is connected in series with a 4.0 Ω resistor. What is the overall resistance of this combination?

4. Three resistors with values of 18 Ω, 26 Ω, 9 Ω, respectively, are connected in series. What is their equivalent resistance?

5. Four resistors with values of 15 Ω, 20 Ω, 30 Ω, 60 Ω, respectively, are connected in parallel. What is the overall resistance of this combination?

6. Two resistors with values of 6.0 Ω and 12 Ω are connected in parallel. This combination is connected in series with a 2.0 Ω resistor and a 24 V battery. What is the current in the 2.0 Ω resistor?
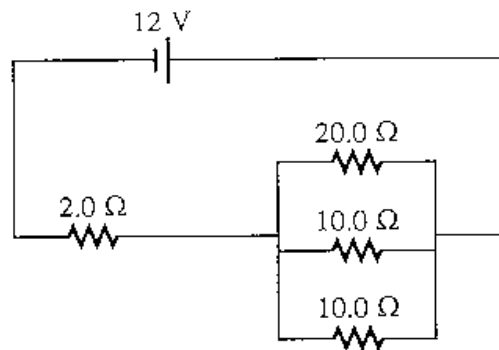

7. What is the equivalent resistance for the resistors in the figure above?
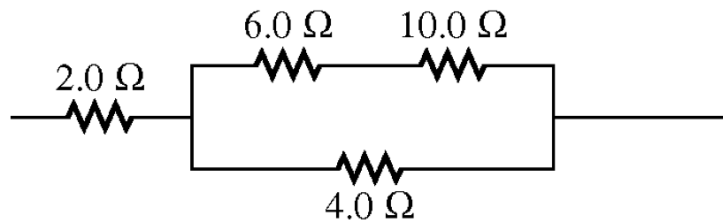
Equivalent Resistance Worksheet

Name:_____

8.0 Ω   2.0 Ω

10.0 Ω

40.0 V   5.0 Ω

8. For the circuit shown above find the following
   a. What is the equivalent resistance for the resistors in the figure above?
   b. What is the total current in the circuit above?

12 V

20.0 Ω

2.0 Ω   10.0 Ω

10.0 Ω

9. For the circuit shown above find the following
   a. What is the equivalent resistance for the resistors in the figure above?
   b. What is the total current in the circuit above?

6.0 Ω   10.0 Ω

2.0 Ω

4.0 Ω

10. For the circuit shown above find the following
    a. What is the equivalent resistance for the resistors in the figure above?
    b. What would the current through the 2 ʌ resistor in the figure above if 120V is applied?