A-day: Due Wed., Apr 22
B-day: Due Thurs., Apr 23

2009 Electricity 8

Name: _____

1. Series or parallel?

   A.____ Only one path for the electricity to flow.

   B.____ Paths are dependent on each other (*one affects the other*).

   C.____ How your house is wired.

   D.____ Paths are independent of each other.

   E. ___ If one light turns off, the others stay on.

   F. ___ If you turn off one light, all the lights turn off.

   G. ___ Has more than one path for the electricity to flow.

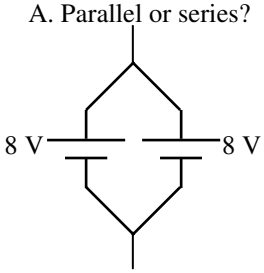
   H. ___ Two devices have the same current.

   I. ___ Two devices have the same voltage.

2. Objects is series have the same _____. Objects in parallel have the same _____.

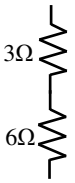
3. Decide if the following are in parallel or series and find the total voltage or total resistance.

   A. Parallel or series?



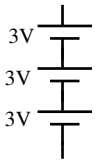
   Vt = _____

   B. Parallel or series?



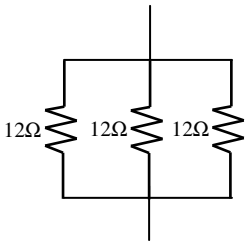
   Rt = _____

   C. Parallel or series?



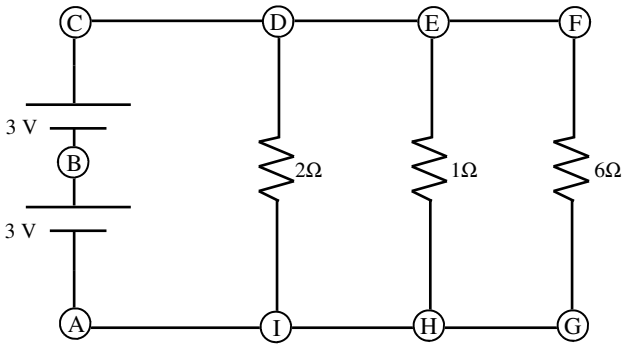
   Vt = _____

   D. Parallel or series?



   Rt = _____

4. A. When resistors are placed in parallel does the total resistance increase or decrease?
   B. Why?



Again—work the diagram first.

5. A. What is the voltage at point H?
   B. What is the voltage at point F?
   C. What is the voltage from point E to point H?
   D. Calculate the current in each branch.

   E. Which resistor has the most voltage across it?

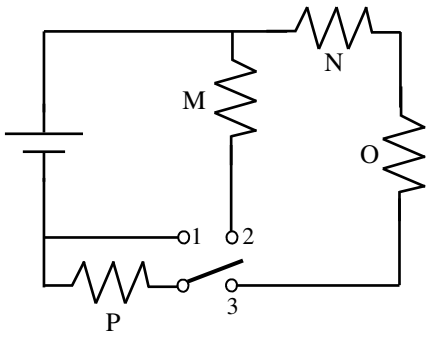
   F. Which resistor has the most current running thru it?

   G. What is the current flowing from H to I?

   H. What is the total current of the circuit?

   I. How much power is used by the 6Ω resistor?

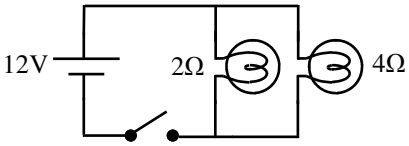
   J. How much power is used by the entire circuit?



6. A. In order for resistor M to light, the switch must be at position: _____.

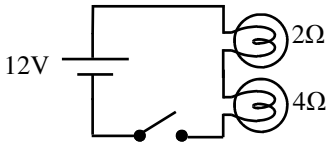
   B. Are resistor M and N in series or parallel?

   C. If the switch is at position 3, N, O, and P are in series or parallel?



7. Basic power questions: (P = VI)
   A) Which is brighter a 60W or an 100W light bulb?
   B) So, brightness is not really about current it is about _____.

8. Using the parallel circuit at the right:
   A) Two objects in parallel have the same _____.
   B) Which one of the two resistors will have the most current?
   C) Which one has the most voltage?
   D) So, which one will use the most power?
   G) ***Rule***: For objects in parallel, they have the same _____. The _____ resistor has the most current, and therefore has the most power and is brighter.

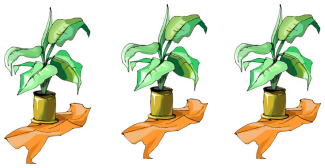


9. Using the series circuit at the right:
   A) Two objects in series have the same _____.
   B) What is the total resistance of the two bulbs?
   C) What is the current flowing thru the circuit?

   D) Which one uses the most voltage?
   E) ***Rule***: For objects in series, they have the same _____. The _____ resistor has the most voltage, and therefore has the most power and is brighter.

10. Control, Experimental, or Responsive Variable?
    A. ___ What you are studying in the experiment.
    B. ___ There are many of these in a good experiment.
    C. ___ What happens in the experiment.
    D. ___ There is only one of these in a good experiment.
    E. ___ What you record in an experiment.

11. Why do good experiments have control setups? (*Explain completely.*)
    Notes: Setting up good experiments



Plant Food A | *Plant Food B* | *No Plant Food*

Start	10 cm	10.1 cm	9.8 cm
week 1	11.1 cm	12.2 cm	11.8 cm
week 2	12.7 cm	14.5 cm	13.2 cm

12. A) What is the control setup for this experiment?
B) What is the experimental variable for this experiment?
C) Give two possible control variables for this experiment.

D) Which plant food is better?

E) What does the "No plant food" setup tell you about plant food A?

13. A pharmaceutical company has developed a new acne drug. To get this new drug approved, they need to do scientific trials to prove effectiveness. What would be the control setup for this drug?

14. Which of the following statements could be supported by the scientific method and why?
    A) "Come to Willarby Auto Store—the best car dealership in town."

    B) "Try Dry-Toes Powder. A recent independent research company proved Dry-Toes Powder kept feet dry up to 30% longer than any other foot powder."

    C) "Acorn Powder helps you live longer and stronger. 89 year old Ethyl Krumke swears by Acorn Powder. 'I take my Acorn Powder every day, just like my mother!' "