A-day: Due Tues., Apr 8 (Assigned Fri., Apr 4)
B-day: Due Wed., Apr 9 (Assigned Mon., Apr 7)

2008 Electricity 4

1. Voltage (V), Current (I), or Resistance (R)?

A) ____Flowing electrons.
B) ____Pushes electricity in circuits.
C) ____Like a water pump.
D) ____Measured in Ω.
E) ____Measured in A.
F) ____A battery gives this.
G) ____Measured in V.
H) ____Slows down current in a circuit.
I) ____Does work in an electric circuit.
J) ____Gives electric energy.
K) ____12 ohms
L) ____ 36 volts.
M) ____ 5 amps.
N) ____ Adds voltage
O) ____ Subtracts voltage
P) ____ Can only change if there is a split or a join.

2. Voltage (V), Current (I), or Resistance (R)?

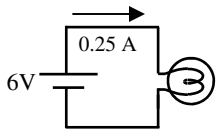
A _____ If you increase resistance what decreases?
B. _____ If you increases voltage what increases?
C. _____ If the current decreased what increased?
D. _____ If current increased what increased?
E. ____ If current increased what decreased?
F. _____ If resistance is decreased, what increases?
G. _____ More batteries will increase these two quantities.
H. ____ More light bulbs will increase this.

3. Conductor or Insulator?

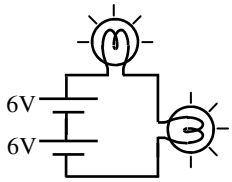
A Wood is a bad: _____
B. Metals are usually a good: _____
C. Plastic is a good: _____
D. 20 Ω is a worse _____ than 100 Ω resistor.

Show equations and work for all of the following.

4. How much voltage is necessary to push 4 A thru 6 Ω?

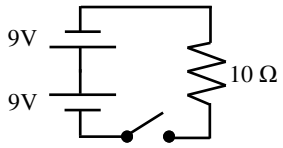


5. How big of a resistor is the light bulb in the circuit at the left?



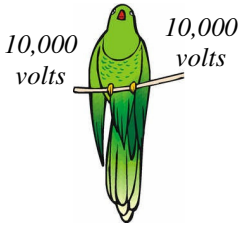
6. Use the circuit at the right to answer the following.
   A. Batteries add or subtract voltage?
   B. Mark the positive and negative sides of the battery.
   C. What is the total voltage in the circuit? (*Label it Vt.)*
   D. If the total current in the circuit is 3 A, calculate the total resistance.

   E. If the two light bulbs have the same resistance, what is the resistance of each light bulb?



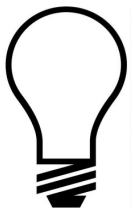
7. Use the circuit at the left to answer the following questions.
   A. As drawn right now, is it an open or closed circuit?
   B. With the switch is closed, what is the current in the circuit?

8. Both sides of a light bulb are connected to the positive side of a battery.
   A. Will the light bulb light?
   B. Why or why not?

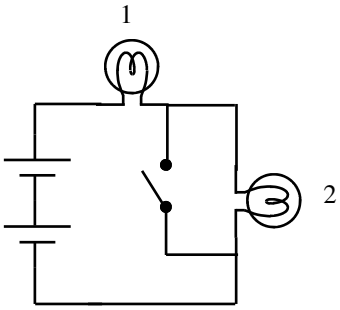


9. A. Does the bird get shocked?
   B. Why or why not?

10. Show where the wires must touch the light bulb for it to light.



11. If a light bulb doesn't light, is the circuit open or closed?
12. If electrons flow thru the wires is the circuit open or closed?



13. Use the circuit at the left to answer the following.
    A. What happens when the switch is closed?
    B. When the switch is closed, will bulb 1 get brighter or dimmer?

    C. What happens if you put a wire across the terminals of a battery (between the positive and negative ends of a battery)?

    D. How can this be dangerous?

Seniors can stop, now.

14. Physical or Chemical change?

A. ____ Bubbles are formed	E. _____Boiling water	I. ____ Cutting up	M. ____ Sugar dissolves
B. ____ Melting wax	F. _____Changes smell	J. ____ Evaporation	N. ____ Burning gasoline
C. ____ Gets cold	G._____Breaking glass	K. ____ Ripping paper	O. ____ Digestion
D. ____ Color changes	H._____ Changes temperature	L. ____ When mixed, gets hot	P._____ How rocks form.

15. Fill in the following information.

$2AlCl_3 + 3Na_2CO_3 \rightarrow Al_2(CO_3)_3 + 6NaCl$	$Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$
Circle the first reactant. *Underline* the second reactant.	*Circle* and *Name* the second product: _____
How many Sodium atoms on the reactant side? _____	How many total atoms on the reactant side: _____
How many table salt molecules on the product side? _____	How many total molecules on the product side: _____

16. What is the safest way of smelling a chemical?
17. Acid or Base?

A. ___ Has fewer OH– ions	C._____Feels squeaky clean	E. ___ Tastes bitter	G. ___ pH of 1 to 7
B. ___ Has more H+ ions	D._____Has fewer H+ ions	F. ___ Has more OH- ions	H. ___ pH of 7 to 14

18. Solution A (pH 4); Solution B (pH 2).

A. _____ Which one has more H+ ions?	C. _____ Which one is more basic?
B. _____ Which one has less OH– ions?	D. _____ Which one is more acidic?

19. Add an acid or a base?

A. _____ You need a pH of 6.2; you have a pH of 5.1.	B. _____ You need a pH of 12; you have a pH of 13.4.

20. What is the product of EVERY titration?
21. How do you safely dilute a concentrated acid?