PreAP: due Mon., Jan 9 (Assigned: Thurs., Jan 5)
Reg: due Tues., Jan 10 (Assigned: Fri., Jan 6)

Electricity 2

1. 10— means fill in the blank with the appropriate exponent (i.e.: 10,000 = 10— = $10^{\underline{4}}$)

   A. 10 = 10— B. 100 = 10— C. 10 x 100 = _____ = 10—

   D. $10^3 \times 10^4$ = 10— E. 0.01 = 10— D. $10^{-3} \times 10^{-4}$ = 10—

   E. $\frac{1}{(2 \times 10^{-2})}$ = 2 x 10—

2. Solve via the following steps: $\frac{(4 \times 10^6)(3 \times 10^{-3})}{(2 \times 10^{-12})}$ =

   A. Multiply the top together: B. Reduce terms: C. Bring bottom to top: D. Final answer:

3. From the electroscope:
   A. When the metal leaves move apart we know they must be:
   B. The rubber wand was what charge?
   C. Describe IN DETAIL: why the metal leaves move apart when the rubber came close (3 parts)

   D. What other combination of materials where negatively charged?

   E. When you charged the balloon on one side did it cause the leaves to move?
   F. Did it work from the other side?
   G. What happened when you charged the metal leaves by contact with the rubber wand.

   H. When the leaves were apart (charged) how did you get them to fall back down?

4. Van de Graff questions:
   A. Why does a person's hair stand up when they are touching the Van de Graff?

   B. This area around their head is called their:

   C. Would their hair stand up if they were touching ground?
   D. Why or why not?

   E. Why does someone standing on the ground get shocked?

   F. Explain the lightening board:

5. What makes a circuit? (3 parts)

6. How much charge do 4×10^{21} electrons have?

7. Find the electric field 12 cm away from a 3 μC charge.

8. If a –2 μC charge is put at that place, find the Coulomb's force.

9. Object A has a charge of 4.3 coulombs; object B has a charge of –4.3 coulombs.

    A. If they are brought close to each other, what will happen?

    B. If they touch each other, what will happen to the charge?

    C. If Object A is grounded, what will happen?

10. Acid or Base or Neutral:
    A. _____ Make OH– ions in water.
    B. _____ Have a pH less than 7
    C. _____ Make H+ ions in water.
    D. _____ You would add this to raise the pH
    E. _____ Salt water
    F. _____ pH of 7
    G. _____ Add this to lower pH
    H. _____ Vinegar
    I. _____ Soap
    J. _____ Feels slippery
    K. _____ Distilled water
    L. _____ Equal # of H+ and OH– ions

11. What is an ion?