A-day: Due Wed., Apr 2 (Assigned Mon., Mar 31)
B-day: Due Thurs., Apr 3 (Assigned Tues., Apr 1)

2008 Electricity 2

1. How many charges are necessary for an electric field?

2. How many charges are necessary for an electric force?

3. Calculate the force between a 1.5μC charge and a 4μC charge that are 15 cm apart.

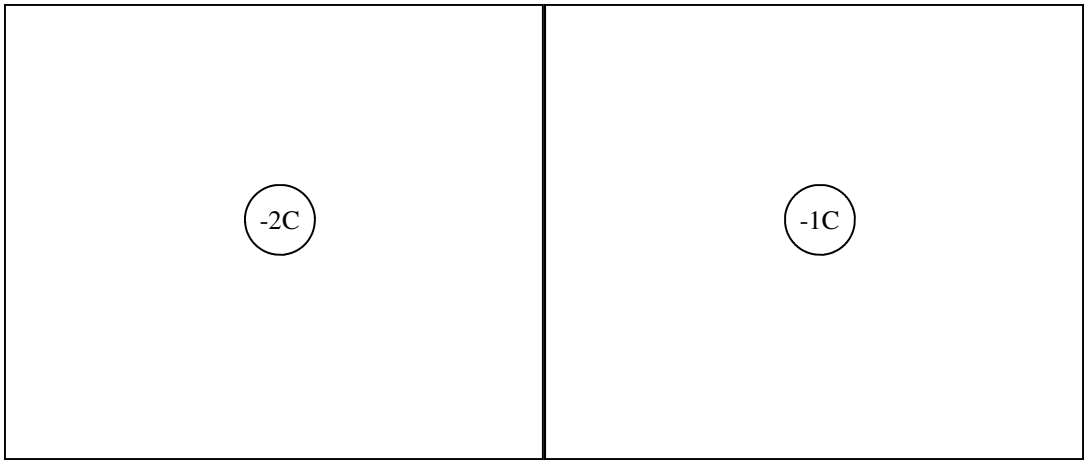
4. Calculate the electric field 6 mm from a 7.8μC charge.

5. If the electric field around a charge has a strength of 4.67 N/C, how much force will a 1.2μC charge feel at the point?

6. An object has a charge of –3.7μC.
   A. To have this charge, did this object gain or lose electrons?
   B. How many electrons?

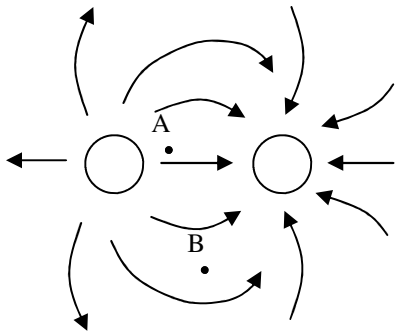
   C. If this object were grounded, would electrons flow to this object or from this object?
   D. After it was grounded, what would its charge be?

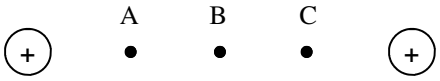
7. For the following two isolated charges show the electric fields around them. (*They are NOT interacting with each other.)*



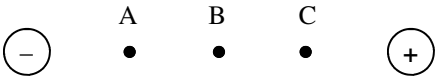
8. A. Label the two charges correctly.
   B. Which point has a stronger electric field?

   C. In which of the two points will a third charge feel the stronger force?





9. Left, Right, or Stay stationary?
   A. A 6 C charge is placed at C.
   B. An object that has gained electrons is placed at A.



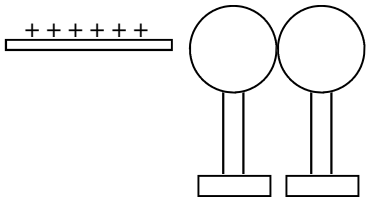
10. Left, Right, or Stay stationary?
    A. A 6 C charge is placed at C.
    B. A negative charge is placed at B.

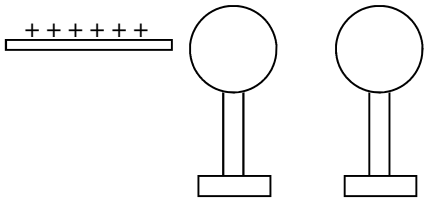
11. A positively charged rod is brought close to two touching metal spheres.
    A. What will be attracted to the rod, protons or electrons?

    B. When the rod is close, which sphere will be more positive (L or R)?

    C. While keeping the rod close, the two spheres are separated. What will be the charge of the right sphere?

    (*This is called charging by induction.)*



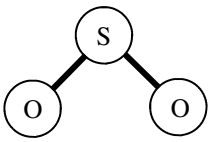


Seniors who have passed TAKS can stop at this point.

12. What experiment (and who) proved that there is a nucleus?

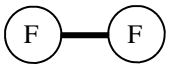
13. A. What is the charge of an atom with 9 p + 10 n + 10 e?
    B. What element is it?

14. A.



Atoms: ____
Elements: ____
Molecules: ____
Compounds: ___

B.



Atoms: ____
Elements: ____
Molecules: ____
Compounds: ____

15. How many protons does Calcium have?

16. What element has an atomic symbol of Na?

17. What's the only element that has an atomic symbol with two capital letters?

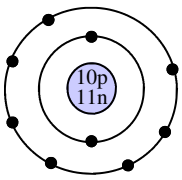
18. What is the atomic mass of Argon?

19. If you add neutrons to an element, the element stays the same or changes?

20. Changing the number of neutrons changes the _____.

21. Which of these is a positive ion: 5 p and 6 e; 7 p and 6 e; 8 p and 8 e.

22. The picture at the right is supposed to be of a neutral atom. Fix it.



23. The following two pictures are wrong. How?