PreAP: Due: Mon., Jan 30 (Assigned: Thurs., Jan 26)
Reg: Due: Tues., Jan 31 (Assigned: Fri., Jan 27)

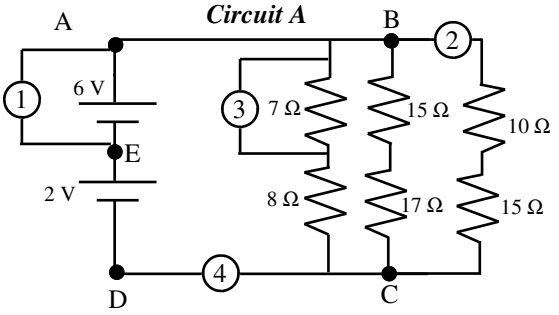
Electricity Review 1

1. Draw the electric field lines that will occur between the two charges (look in your book).

2. Identify the meters in Circuit A: M1: ____; M2: ____; M3: ____; M4: ____.

3. Find the total voltage.

4. Find the total resistance of the circuit.

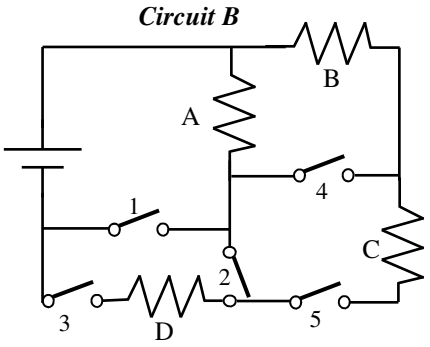


5. Find the total current of the circuit.

6. Find the current running through meter 2 (check your review).

7. A. What does meter 1 read? B. What does meter 4 read?
   C. What does meter 3 read?

8. In Circuit A what is the power used by the 10 Ω resistor?
9. What are these voltages: V_E = _____; V_{AB} = _____; V_{BE} = _____;
10. Decide which switches in Circuit B need to close to allow the following:
    A. Only resistor A on:
    B. Only resistors A and B on:
    C. Only resistors A and C on:
    D. Only resistors A, C, and D on:

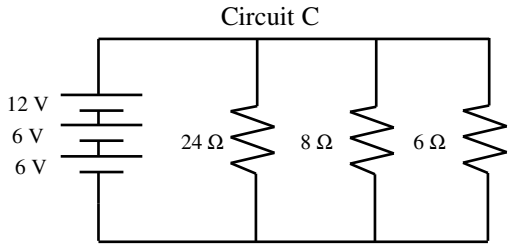


11. Find the electric field 2 cm away from a 8μC charge?
    (Remember r must be in meters and q in Coulombs).

12. Find the force between a 6 C and a –3C charge if they are 4 meters apart.

13. Is the above force attractive or repulsive?

14. What is ground, electrically?



15. If a negative object touches ground, what happens?

16. In Circuit C, which light bulb is brighter?

17. Why? (*Be specific.*)

18. How much current goes thru the 6 Ω resistor?

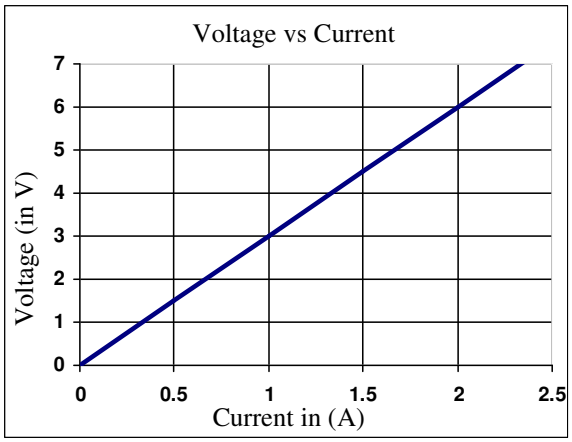
19. In Circuit C, how much charge goes through the 6 Ω resistor in 20 seconds?

20. If your electric company's power rate is $.03 per kWhr, how much will it costs to run a 120 w washing machine for 3 hours?

21. Is your house in series or parallel?
22. How do you know for sure?

23. How can you check that a circuit is in series?

24. Different voltages are put thru a resistor and the current is measured. The results are graphed at the right. Use this graph to find the resistance of the resistor.



Use the notes on my site for "Acids and Bases" to answer the following:

25. Acid, Base, or Neutral?

A. ____ Has a pH less than 7.
B. ____ Makes H+ ions in water.
C. ____ pH of 7.
D. ____ Vinegar
E. ____ Has a pH of 13.
F. ____ Has a pH of 2.3
G. ___ Soap
H. ___ Antacid tablets
I. ____ Distilled water
J. ___ Makes pH go down.
K. ___ Makes pH go up.
L. ___ Makes OH– ions in water.
M. ___ Neutralizes a bases
N. ___ Neutralizes an acid
O. ___ Salt water
P. ___ Has few OH– ions.
Q. ___ Add this to raise pH.
R. ____ Add this to lower pH.

Use notes on "Water the (Nearly) Universal Solvent" to answer the following:

26. What is a polar molecule?

27. Do polar molecules attract polar or non-polar molecules?
28. Which is the positive side of water: oxygen or hydrogens?
29. Will a metal be attracted to the oxygen side or hydrogen side?
30. To which side of water will Neon be attracted to?
31. To which side of water will Bromine be attracted to?
32. How could get a solute to dissolve faster in water (give three ways)?

33. Which will dissolve faster: granulated sugar or the sugar cube?
34. Why?

You should be able to do all of this.

35. A 6 kg object is pushed by a 10 N force for 4 seconds. After that it is going 8 m/s. Answer the following.
    A) What variable is 6 kg? B) What variable is 10 N? C) What variable is 4 sec?
    D) What variable is 8 m/s?
    E) What kind of energy did it have after it was pushed?

    F) What is the weight of the object?

    G) Calculate the kinetic energy of the object after it was pushed.

    H) Calculate the momentum of the object.

    I) Calculate the work done if it was pushed for 5 meters.

    J) After it is pushed, how far will it go in 2 seconds?

    K) Find the acceleration on the object.