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

Electricity Review 1

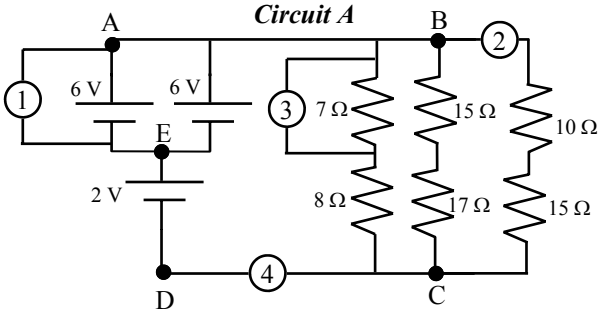
1. Draw the electric field lines that will occur between the two charges.

2. Identify the meters in Circuit A: 1: ____; 2: ____; 3: ____; 4: ____.

3. Find the total voltage.

4. Find the total resistance of the circuit.

Circuit A



5. Find the total current of the circuit.

6. Find the current running through meter 2.

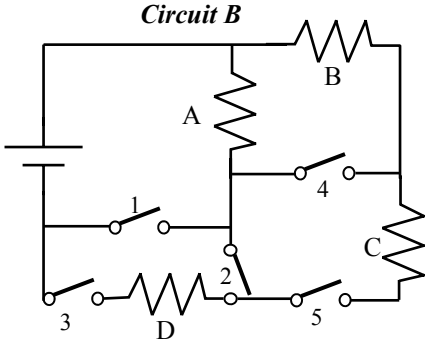
7. A. What does meter 4 read? B. What does meter 1 read?
8. What does meter 3 read?

9. In Circuit A what is the power used by the 10 Ω resistor?

10. What are these voltages: _____; V_{AB} = _____;

11. 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:

Circuit B



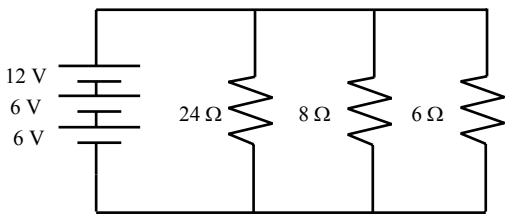
12. Find the electric field 2 cm away from a 8μC charge?

13. Find the force at that point from a –3μC charge? Is the force attractive or repulsive?

14. What is ground, electrically?

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

Circuit C



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

17. Why? (Use the Power equation to prove it.)

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

19. 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?

20. What is the function of a capacitor?

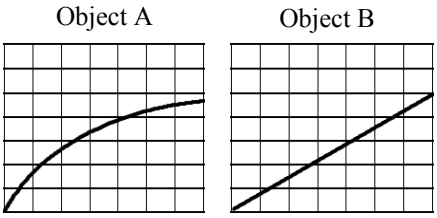
21. How much voltage causes a 3 C charge on a 6μF capacitor?

22. How many electrons is that (in the capacitor)?

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

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

25. If the 2 graphs at the right show voltage vs. current, the slope shows what?



26. Which object is ohmic?

27. What do acids make in water?

28. What do bases make in water?

29. Draw a water molecule and label the sides as positive and negative.

30. If you need higher pH you add a:

31. When DNA makes mRNA we call it:

32. ATCCAGG: Give the mRNA sequence for this:

33. Give two ways to speed up how fast a solution dissolves.