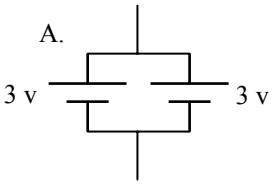
PreAP: Due: Wed., Jan 18 (Assigned: Fri., Jan 13)
Reg: Due: Thurs., Jan 19 (Assigned: Tues., Jan 17)

Electricity 5

1. Identify the following as parallel or series and find the total resistance or voltage.

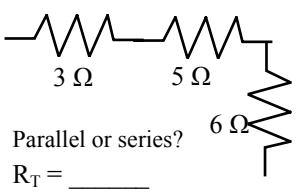
A.



Parallel or series?

V_{total} = _____

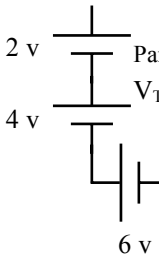
B.



Parallel or series?

R_T = _____

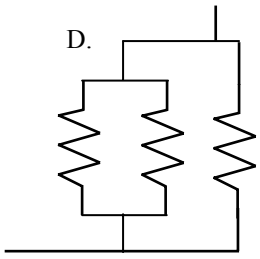
C.



Parallel or series?

V_T = _____

D.



Parallel or series?

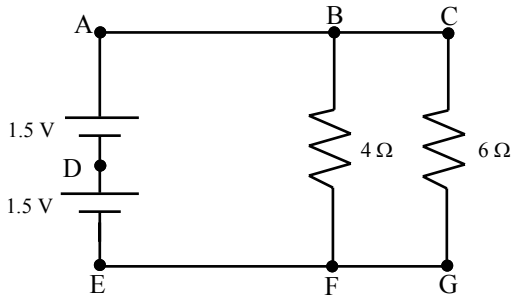
R_T = _____

2. If you connected A and B above, what would be the total current in the circuit?

3. If you connected C and D above, what would be the total current in the circuit?

4. Using Circuit 1, answer the following:
   A. V_T = _____
   B. Are the batteries in series or parallel?
   C. Are the resistors in series or parallel?
   D. Calculate the total resistance.

Circuit 1



   E. Find the total current in the circuit.

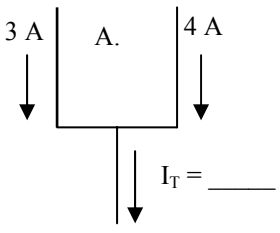
   F. What are the following voltages? V_{ED} = _____; V_{DA} = _____V_{AB} = _____; V_{AE} = _____; V_{AG} = _____; V_{CG} = _____;

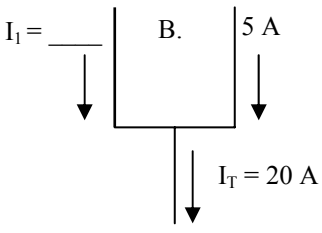
   G. Since you know the voltage across the 4 Ω resistor, find the current running through it.

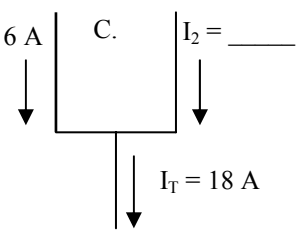
   H. Likewise, find the current through the 6 Ω resistor.

   I. How does the voltage in each of the resistors compare with the total current in the circuit.

5. Understanding junctions. Fill in the missing information on the following graphics:







6. Show the electric field lines for the following:

A.	B.	C.
+	− +	− −

7. If a circuit has 3 A of current, how much charge moves in 10 seconds?

8. Using your answer from #7, how many electrons moved in that 10 seconds?

9. Acids, bases and ionic compounds all _____ in water, creating s_____ that have ions. These ions are neutral or charged? Thus they will do what for electricity?

10. (From the 2004 Exit Level TAKS test): *The seawater in the setup at the right allows electricity to flow (meaning it is a _____) because it is a:*
    A. strong electrolyte
    B. weak acid
    C. nonelectrolyte
    D. strong base

11. The lightbulb is the _____ for this circuit.

12. The voltage generator is a _____.