Name: _____ Per. _____

# RC Circuits

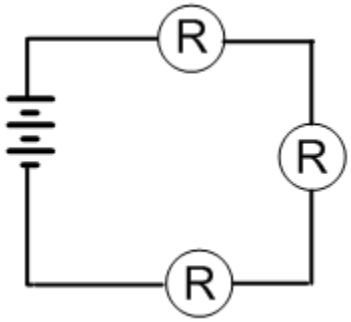
Tech Tip: Use a small piece of masking tape rolled to make a loop on the bottom of each socket to hold them in place. Set the grey meter as a 20 V max voltmeter. Set up the orange meter as a 20 A max ammeter.

## Circuit 1

1) Set up your circuit as shown in the diagram. Use 3 Round bulbs. With the circuit connected, determine the:

   a) Current in each wire: _____

   b) Voltage across each bulb and the battery



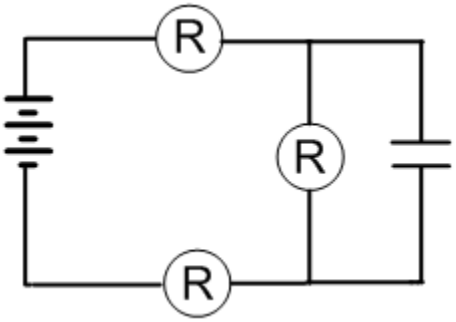

Bulb 1 _____ Bulb 2 _____

Bulb 3 _____ Battery _____

2) Disconnect the circuit at the battery. Place a discharged capacitor in the open space on the right. Re-connect the battery. With the circuit connected, determine the:

   a) Current in each wire: _____

   b) Voltage across each bulb and the Capacitor




Bulb 1 _____ Bulb 2 _____

Bulb 3 _____ Capacitor _____

3) How did the presence of the capacitor affect the currents and voltages in the resistor portion of the circuit?

4) How did the voltage across the capacitor compare to the voltage of the battery?

5) How did the voltage across the capacitor compare to the voltage across each resistor.

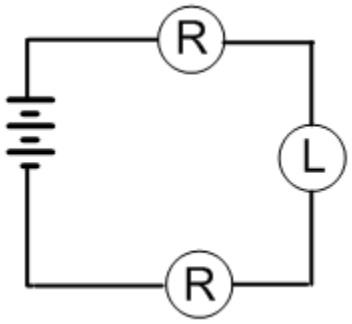
Name: _____ Per. _____

Circuit 2

6) Set up your circuit as shown in the diagram. Use 2 Round bulbs and a Long Bulb. With the circuit connected, determine the:

c) Current in each wire: _____

d) Voltage across each bulb and the battery



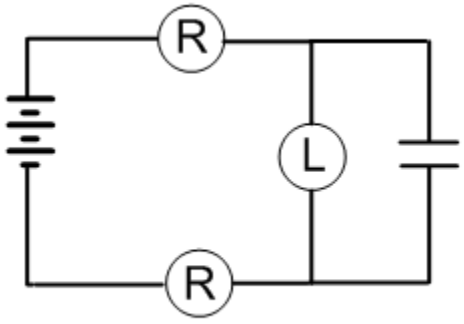

Bulb R1 _____ Bulb R2 _____

Bulb L_____ Battery _____

7) Disconnect the circuit at the battery. Place a discharged capacitor in parallel with the long bulb. Re-connect the battery. With the circuit connected, determine the:

c) Current in each wire: _____

d) Voltage across each bulb and the Capacitor




Bulb R1 _____ Bulb R2 _____

Bulb L _____ Capacitor _____

8) How did the presence of the capacitor affect the currents and voltages in the resistor portion of the circuit?

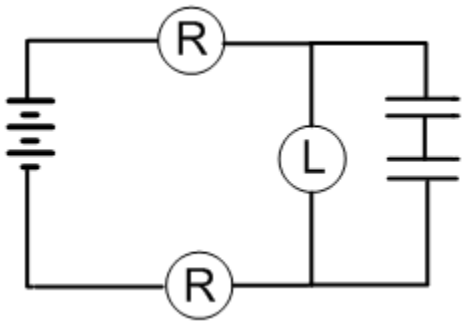
9) How did the voltage across the capacitor compare to the voltage of the battery?

10) How did the voltage across the capacitor compare to the voltage across each resistor.

11) Can you make a general rule now for determining the voltage of a capacitor in an RC Circuit? What is it?

Name: _____ Per. _____

12) Set up your circuit as shown in the diagram. Use 2 Round bulbs and a Long Bulb. Use 2 blue capacitors in series.




a) What will always be the same with capacitors in series?

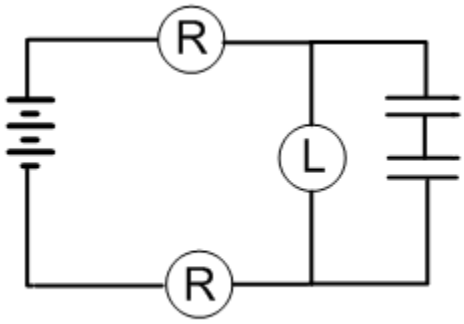
b) Predict the voltage reading for each capacitor after it charges.

Capacitor 1 _____ Capacitor 2 _____

c) Connect the circuit. What are the actual voltage readings for each capacitor? How did they compare with your prediction?

Capacitor 1 _____ Capacitor 2 _____

13) Set up your circuit as shown in the diagram. Use 2 Round bulbs and a Long Bulb. Use 1 blue and 1 silver capacitor in series.



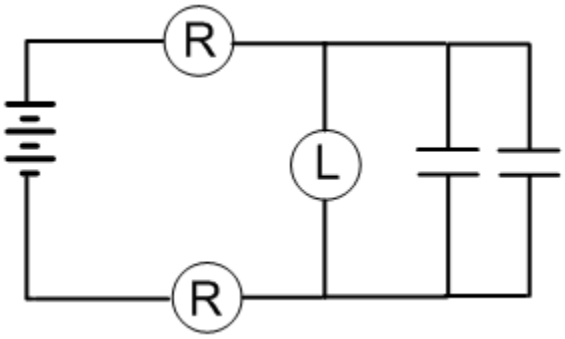

a) Predict the voltage reading for each capacitor after it charges.

Capacitor 1 _____ Capacitor 2 _____

b) Connect the circuit. What are the actual voltage readings for each capacitor? How did they compare with your prediction?

Capacitor 1 _____ Capacitor 2 _____

14) Set up your circuit as shown in the diagram. Use 2 Round bulbs and a Long Bulb. Use 2 blue capacitors in parallel.




d) What will always be the same with capacitors in parallel?

e) Predict the voltage reading for each capacitor after it charges.

Capacitor 1 _____ Capacitor 2 _____

f) Connect the circuit. What are the actual voltage readings for each capacitor? How did they compare with your prediction?

Capacitor 1 _____ Capacitor 2 _____