

# Electric Circuits Data Sheet

## Part 1

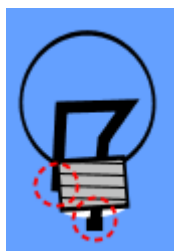
1	2	3	4
Series or parallel	Series or parallel	Series or parallel	Series or parallel

Work approved \_\_\_\_\_

## Part 2

### A. Single bulb series

#### **LIGHT BULB #1**



(V) Voltage provided by the battery (both cells) \_\_\_\_\_

(V) Voltage "ACROSS" light bulb #1 \_\_\_\_\_

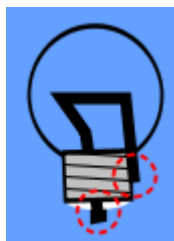
(V) Voltage "DROP" for light bulb #1 \_\_\_\_\_

(I) Current in the circuit with light bulb #1 \_\_\_\_\_

(R) Calculate the Resistance of light bulb #1 (Show K-U-E-S)

Work approved \_\_\_\_\_

#### **LIGHT BULB #2**



(V) Voltage "ACROSS" light bulb #2 \_\_\_\_\_

(V) Voltage "DROP" for light bulb #2 \_\_\_\_\_

(I) Current in the circuit with light bulb #2 \_\_\_\_\_

(R) Calculate the Resistance of light bulb #2 (Show K-U-E-S)

Work approved \_\_\_\_\_

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## Part 2

### **B. Two bulb series**

Answer to question #1

(V) Voltage provided by battery \_\_\_\_\_

(V) Voltage drop across light bulb #1 \_\_\_\_\_

(V) Voltage drop across light bulb #2 \_\_\_\_\_

(V) Total Voltage drop across both bulbs \_\_\_\_\_

(I) Current between (+) of battery and light bulb \_\_\_\_\_

(I) Current between bulb #1 and bulb #2 \_\_\_\_\_

(I) Current between (-) of battery and light bulb \_\_\_\_\_

How are these three currents related (same, one larger/smaller?)

(R) Calculate the TOTAL or EQUIVALENT Resistance of the circuit:  
(Show K-U-E-S)

How does the total resistance of the two bulb series compare to total resistance from Part 2A?

Work Approved \_\_\_\_\_

# Electric Circuits Data Sheet

## Part 3

### C. Two bulb parallel

Answer to question #1

(V) Voltage provided by the battery \_\_\_\_\_

(V) Voltage drop across light bulb #1 \_\_\_\_\_

(V) Voltage drop across light bulb #2 \_\_\_\_\_

How do these voltages compare to the voltage provided by the battery?

(I) Current at Point A \_\_\_\_\_

(I) Current at Point B \_\_\_\_\_

(I) Current at Point C \_\_\_\_\_

How are these currents related?

(R) Calculate the Total or Equivalent Resistance (Show K-U-E-S)

How does the total resistance of the two bulb parallel circuit compare to total resistance from Part 2A?

Work Approved \_\_\_\_\_

## Electric Circuits Data Sheet

### Lab Conclusions:

1. Describe the flow of charge in the series circuit.
2. Describe the flow of charge in the parallel circuit.
3. What happens to the equivalent resistance when light bulbs are connected in series? To answer you need to compare to the single bulb data in Part 2A.
4. What happens to the equivalent resistance when light bulbs are connected in parallel?
5. Which circuit draws more current from the cells...series or parallel? Explain why this is so.
6. How is the voltage from the battery distributed (how does the voltage compare from bulb to bulb) in a series circuit?
7. How does the voltage of each part in a parallel circuit compare to the battery voltage?
8. Draw a circuit diagram of a parallel circuit with three light bulbs and a switch. The switch should only turn off one of the light bulbs. You can try it on the simulation first...it might help.