ID α Currents and Voltages in Circuits Mr. C

Part A Predictions

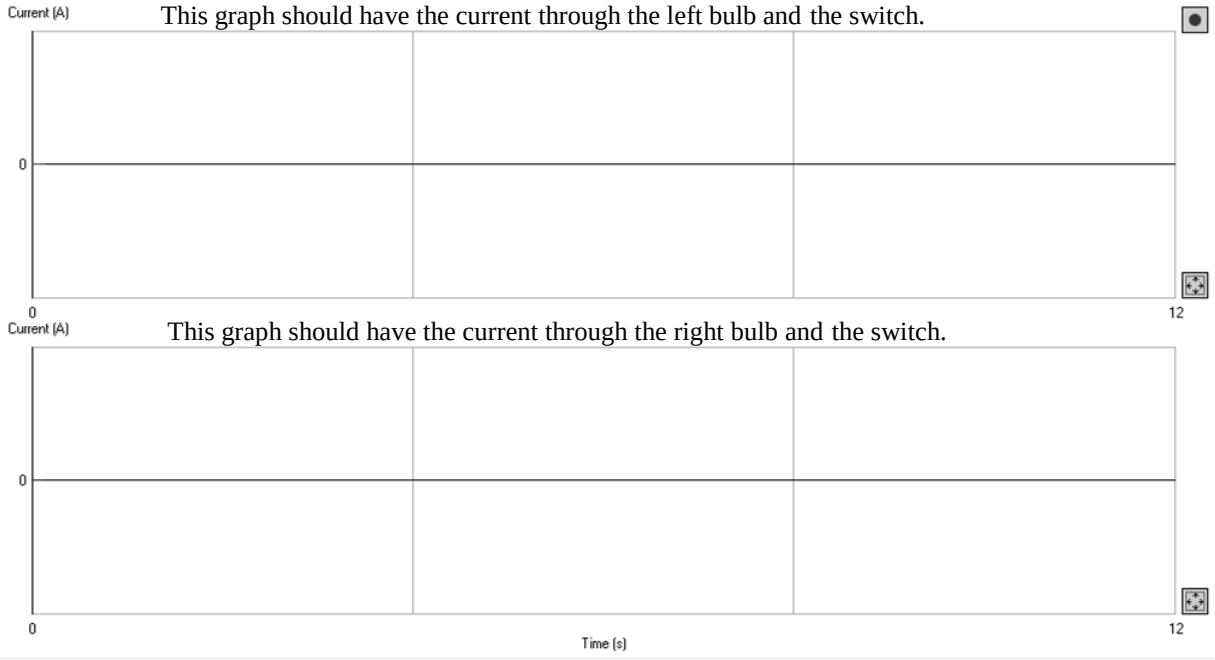
Name_____.

1. Predict the state of the lights when the switch is Open then Closed then Open. **Report your predictions using the Senteo clicker.**

Left Bulb _____ Right Bulb _____

A) On, On, On	B) Off, On, On	C) On, Off, On	D) On, On, Off
E) Off, Off, On	F) Off, On, Off	G) On, Off, Off	H) Off, Off, Off

2. Draw what you think the two currents will look like in this arrangement.



3. Why do you think the graph of the currents will look like what you drew?

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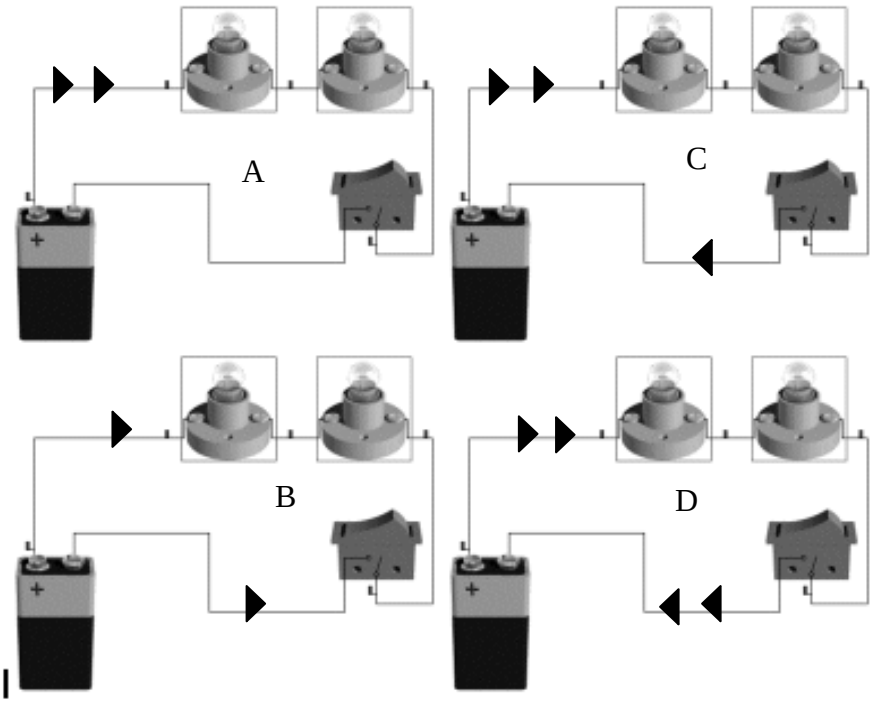
-Continue-

Part A Predictions



4. Which of these four models represents how you think the current flows in the circuit? _____
Report your predictions using the Senteo clicker.

Model A: Current flows from the positive terminal of the battery to the bulbs, but no current flows back to the negative terminal of the battery through the switch, since the current is used up lighting the bulbs.

Model B: Current flows in both wires in a direction shown from the terminals of the battery to the bulbs. The currents that reach the bulbs are equal and opposite.

Model C: The current will flow in the direction shown, but there will be less current in the wire with the switch, since some of the current is used up lighting the bulbs.

Model D: The current will flow in the direction shown, and the current will be the same in both wires, switch and bulbs.

Explain your selection.

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-Stop-

Part A Results

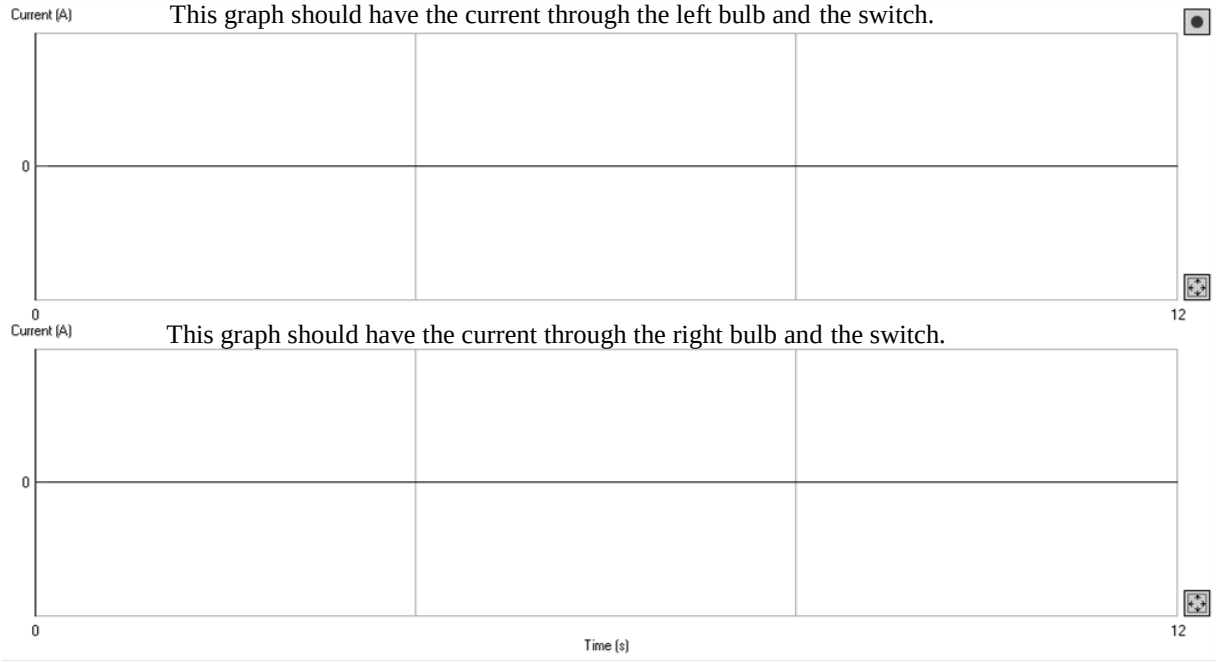
Name_____.

1. What was the state of the lights when the switch was Open then Closed then Open?

Left Bulb _____ Right Bulb _____

(Refer to the descriptions in the prediction section)

2. Draw what the two currents looked like in this arrangement.



3. What do you realize now that you did not know when making your prediction?

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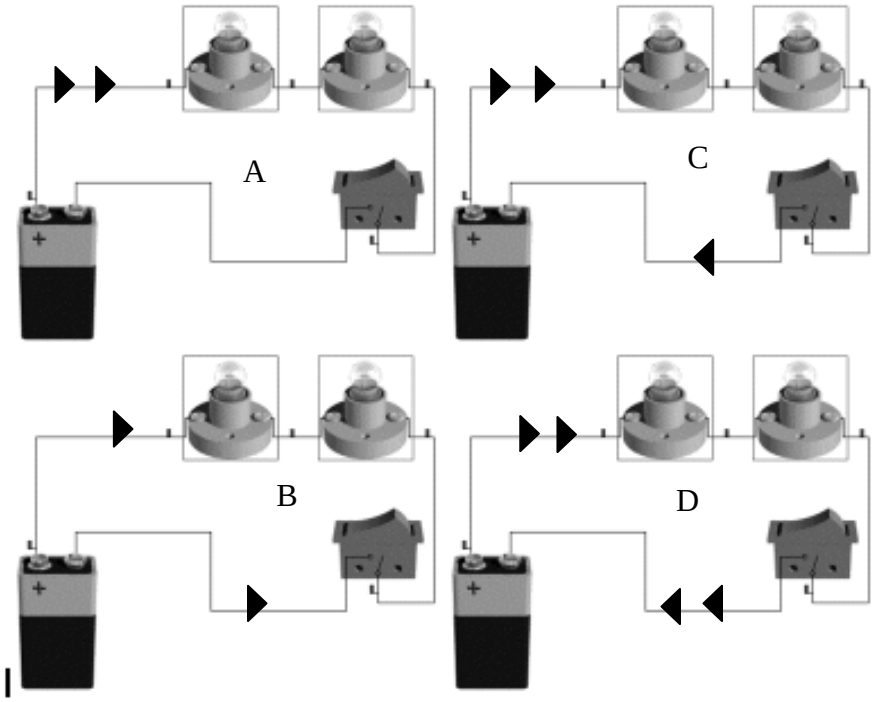
-Continue-

Part A Results



4. Which of these four models represents how you think the current flows in the circuit? _____
(Refer to the descriptions in the prediction section)

5. What is the general rule for this part?

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-Stop-

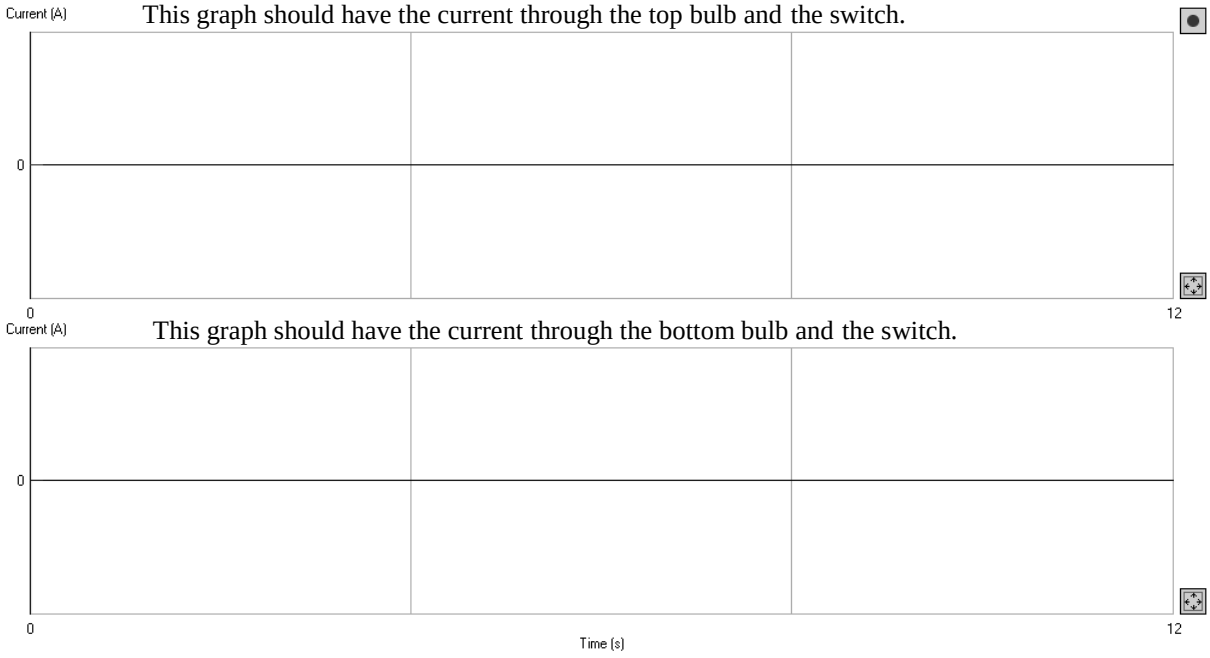
Part B Predictions
Name_____.

1. Predict the state of the lights when the switch is Open then Closed then Open. **Report your predictions using the Senteo clicker.**

Top Bulb _____ Bottom Bulb _____

A) On, On, On	B) Off, On, On	C) On, Off, On	D) On, On, Off
E) Off, Off, On	F) Off, On, Off	G) On, Off, Off	H) Off, Off, Off

2. Draw what you think the three currents will look like in this arrangement.



3. Why do you think the graph of the currents will look like what you drew?

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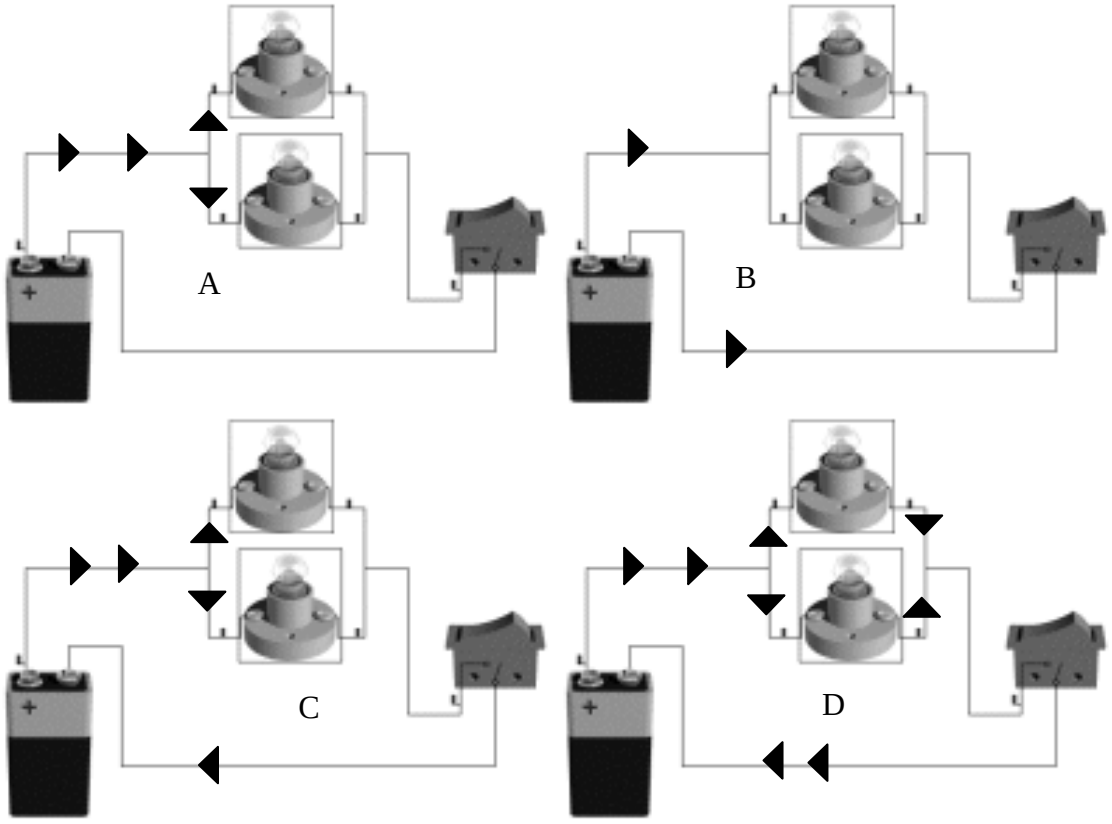
-Continue-

Part B Predictions



4. Which of these four models represents how you think the current flows in the circuit? _____
Report your predictions using the Senteo clicker.

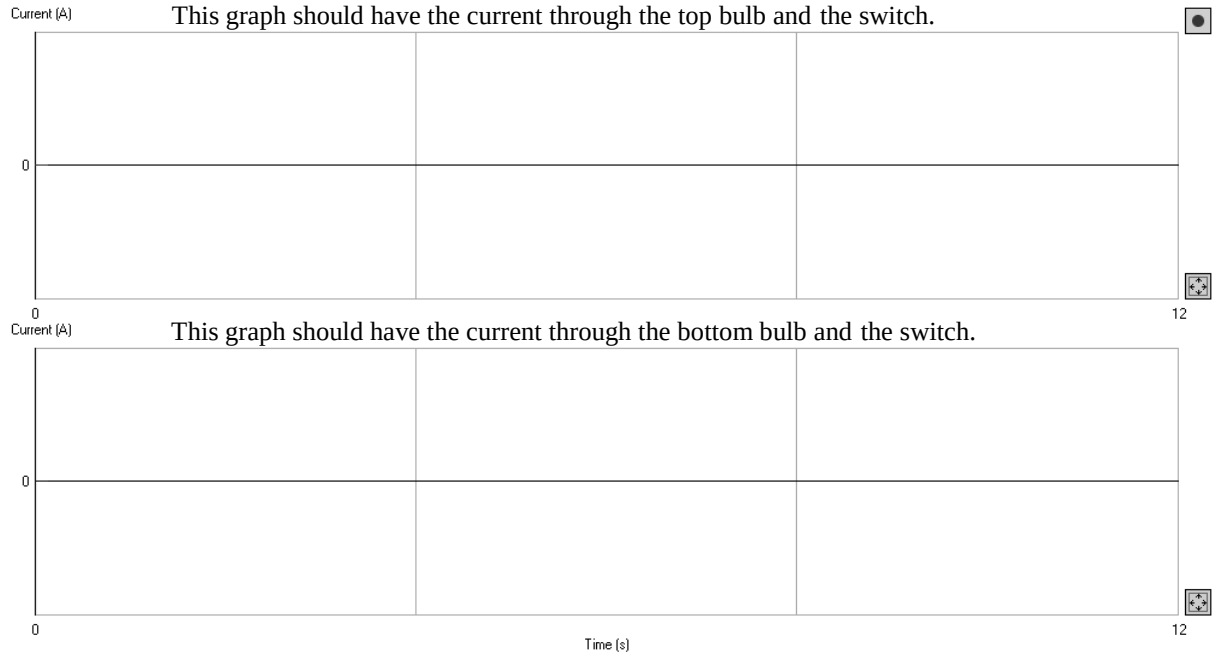
Model A: Current flows from the positive terminal of the battery to the bulbs through and splits between the two bulbs, but no current flows back to the negative terminal of the battery through the switch, since the current is used up lighting the bulbs.
Model B: Current flows in both wires in a direction from the battery to the bulbs. The current is the same in all parts.
Model C: The current will flow in the direction shown, but there will be less current in the wire with the switch since some of the current is used up lighting the bulbs.
Model D: The current will flow in the direction shown, and the magnitude of the current will be the same in both bulbs and twice as great in the switch.
Explain your selection.

-Stop-

Part B Results
Name_____.

1. What was the state of the lights when the switch was Open then Closed then Open?
Top Bulb _____ Bottom Bulb _____
(Refer to the descriptions in the prediction section)

2. Draw what the three currents looked like in this arrangement.



3. What do you realize now that you did not know when making your prediction?

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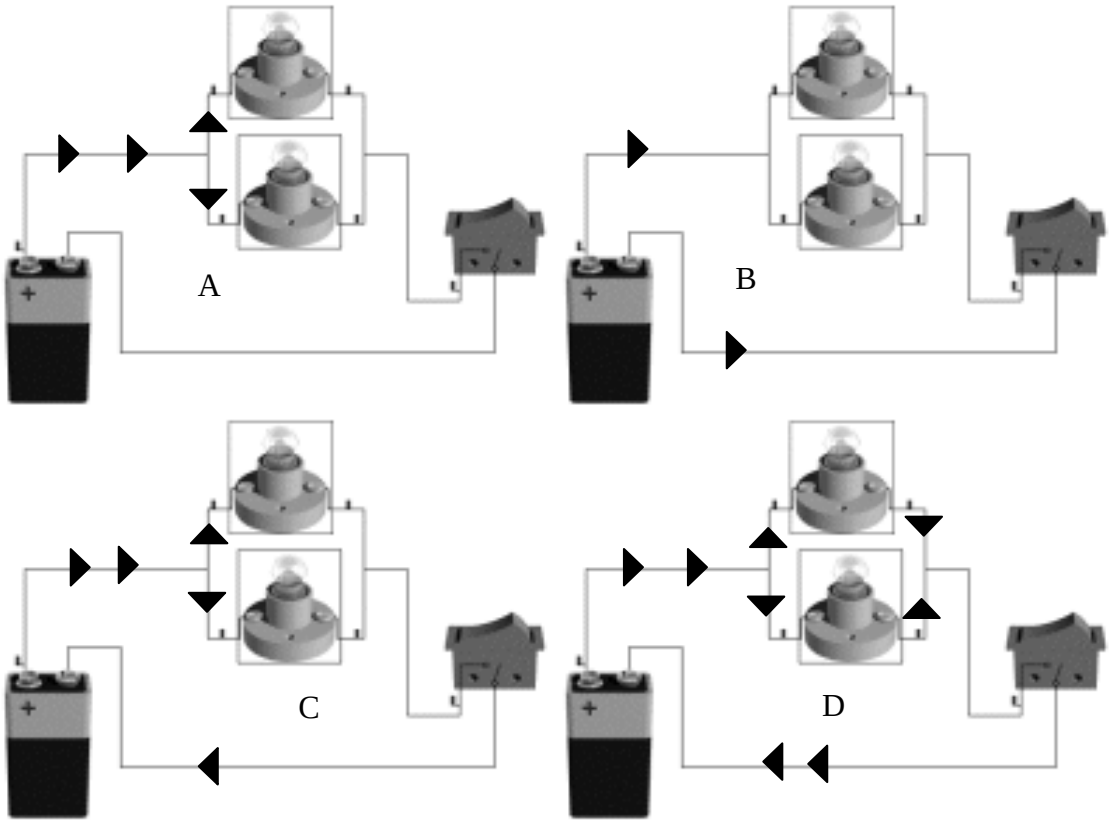
-Continue-

Part B Results



4. Which of these four models represents how you think the current flows in the circuit? _____
(Refer to the descriptions in the prediction section)

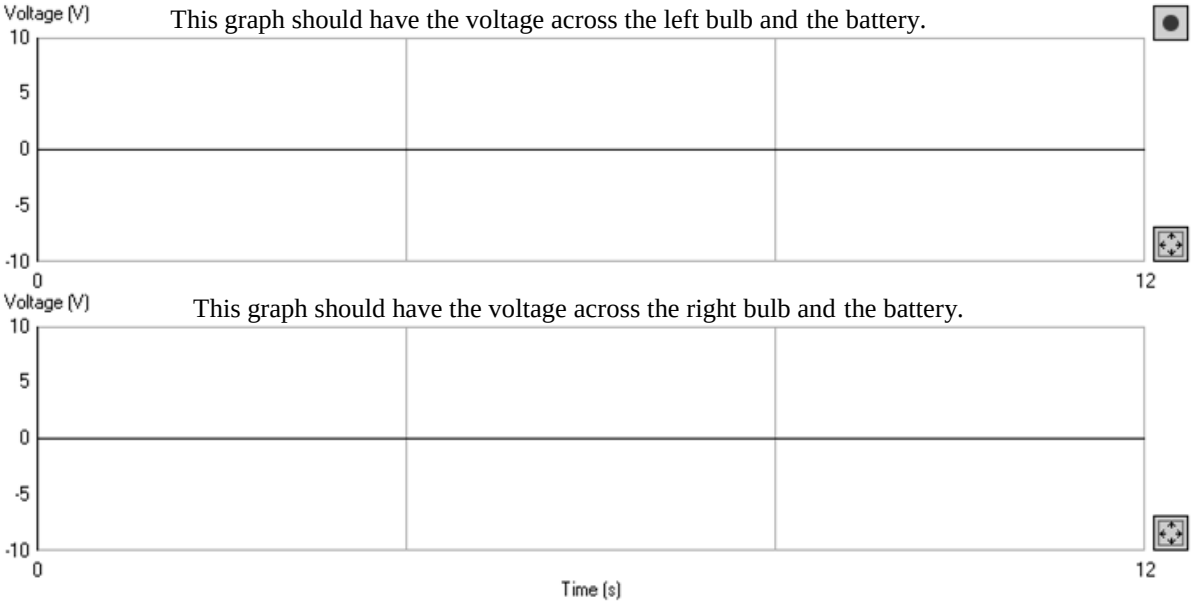
5. What is the general rule for this part?

-Stop-

Part C Predictions

Name_____.

1. Draw what you think the three voltages will look like when the switch is Open, Closed, Open.



2. Why do you think the graphs of the voltages will look like what you drew?

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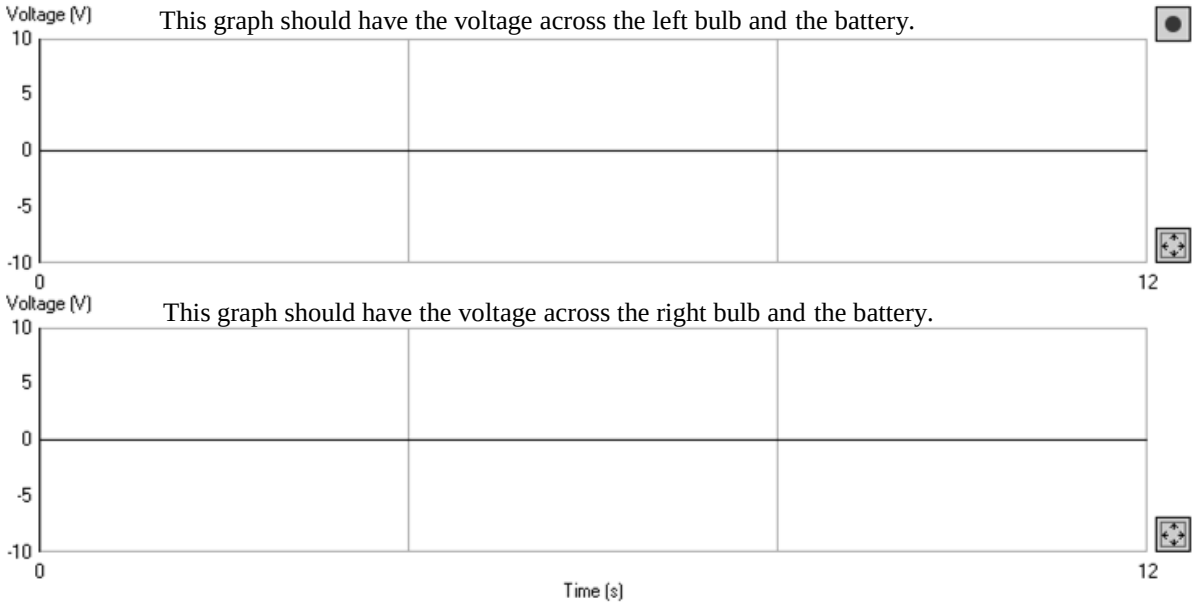
3. Draw a picture of this circuit for future reference.

-Stop-

Part C Results
Name_____.

1. Draw what the three voltages looked like when the switch is Open, Closed, Open.



2. What do you realize now that you did not know when making your prediction?

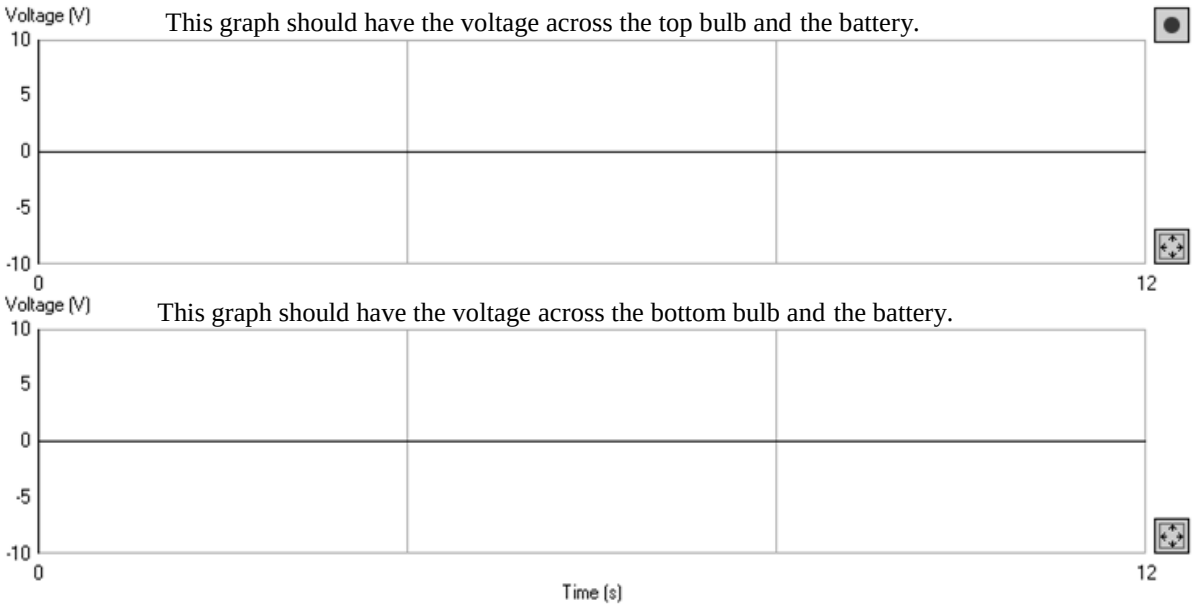
3. What is the general rule for this part?

-Stop-

Part D Predictions

Name_____.

1. Draw what you think the three voltages will look like when the switch is Open, Closed, Open.



2. Why do you think the graphs of the voltages will look like what you drew?

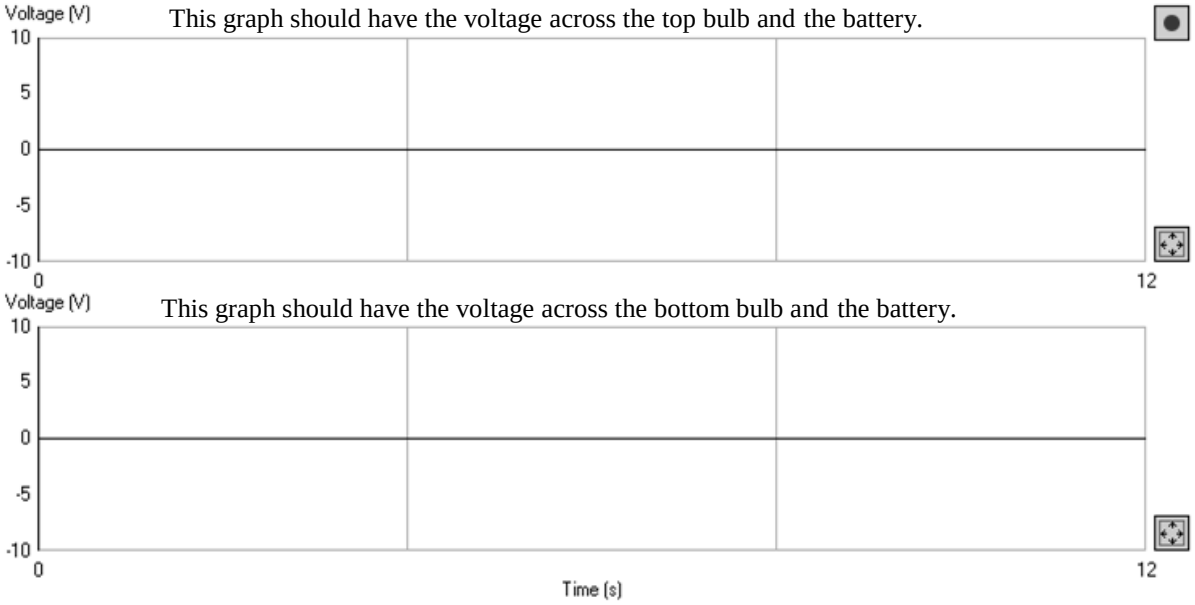
3. Draw a picture of this circuit for future reference.

-Stop-

Part D Results

Name_____.

1. Draw what the three voltages looked like when the switch is Open, Closed, Open.



2. What do you realize now that you did not know when making your prediction?

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3. What is the general rule for this part?

-Stop-

Summary Sheet
Name _____ .

What were the general rules that you learned?

Series Circuit: Current

Parallel Circuit: Current

Series Circuit: Voltage

Parallel Circuit: Voltage