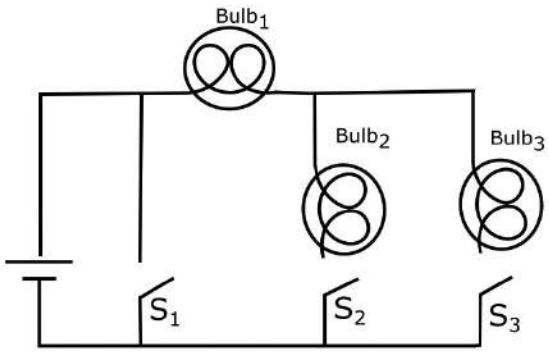
NAME _____ DATE _____

Scenario

A circuit is constructed with identical bulbs as shown at right.



Quantitative Analysis

PART A: Which switches must be open in order to have a completely open circuit?

_____ Switch 1 _____ Switch 2

_____ Switch 3 _____ All switches open

Justify your claim.

PART B: Which switches must be closed in order to have a short circuit?

_____ Switch 1 _____ Switch 2 _____ Switch 3 _____ All switches open

Justify your claim.

PART C: Is it possible to light Bulb 2 without lighting Bulb 3?

_____ Yes _____ No

Explain.

PART D: Is it possible to light Bulb 1 without lighting either Bulb 2 or 3?

_____ Yes _____ No

Explain.

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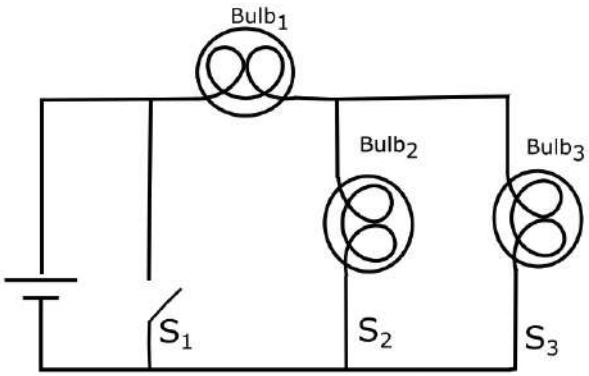
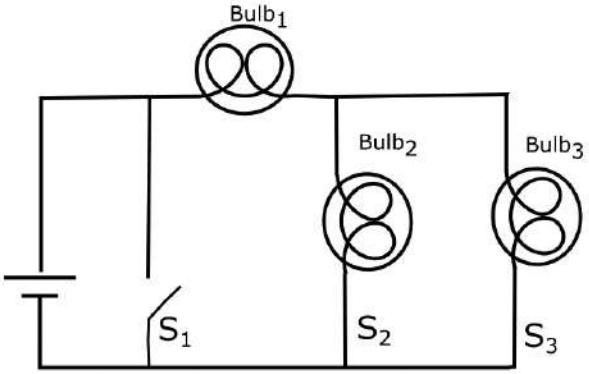
Using Representations

PART E: On the diagram to the right of the circuit with switches S_2 and S_3 closed, sketch in an ammeter so that it would correctly measure the current through Bulb 2.



PART F: On the diagram shown of the circuit with switches S_2 and S_3 closed, sketch in a voltmeter so that it would correctly measure the potential difference across Bulb 1.



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