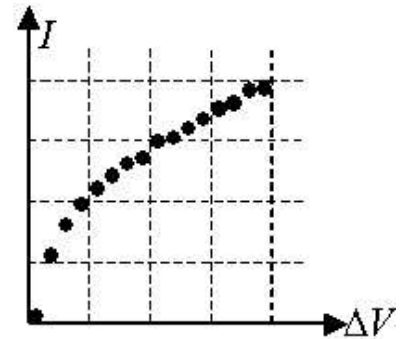


NAME _____

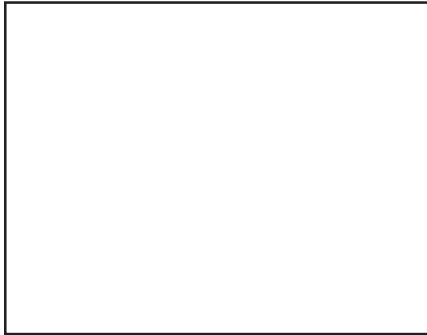
DATE _____

Scenario

Blake obtains three identical light bulbs: A, B, and C. He performs an experiment on one of the bulbs in which he varies the potential difference across the bulb and measures the resulting current through the bulb. The resulting graph of Blake's data is shown to the right.

**Using Representations**

PART A: Using standard circuit symbols, draw a circuit containing a variable source of potential difference, a light bulb, an ammeter, and a voltmeter that would allow Blake to make the measurements that resulted in the graph shown.

**Analyze Data**

PART B: Does the resistance of the bulb increase, decrease, or remain the same as potential difference increases? Explain your reasoning.

Argumentation

PART C: Blake connects the three bulbs as shown in the diagram to the right. He measures the luminosity of Bulb A with a photometer and determines that Bulb A emits one-eighth as much light energy each second as Bulb B. In a clear, coherent, paragraph-length response that references both the circuit diagram and the above graph, explain why this is the case.

