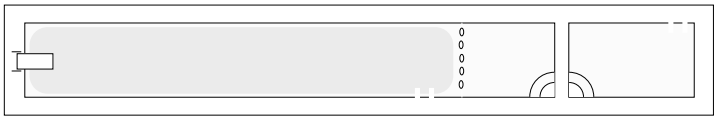
PhyzSpringboard: Parallel Circuits



Electric Quantites

1. A simple circuit—such as a battery, bulb, and wire—can be characterized by the voltage, current, resistance, and power associated with it. What happens to these quantities when more and more resistors (bulbs or other electric devices) are connected to the circuit in **parallel**? Before answering, write definitions for each of the quantities.

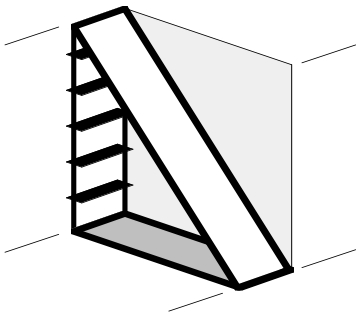
a. Voltage / Electromotive Force

b. Current

c. Resistance

d. Power

2. How is each of these quantities related to characteristics of the slide?



a. The _____ of the slide is like the **resistance** of a circuit.

b. The _____ of the slide is most like the **power** of a circuit.

c. The _____ of a slide is most like the **voltage** of a circuit.

d. The _____ of a slide is most like the **current** of a circuit.

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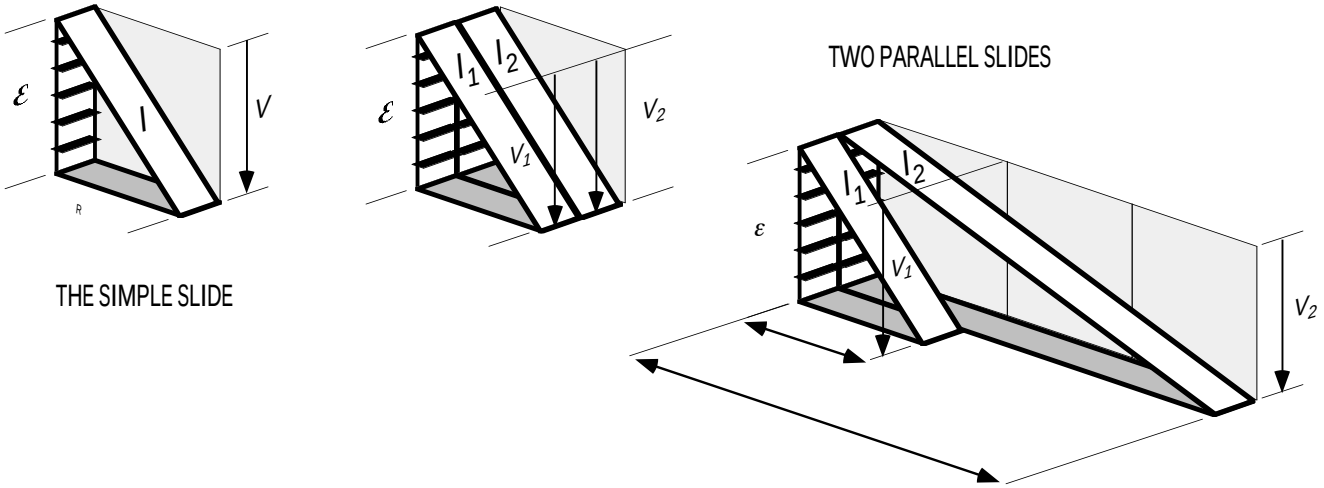
Comparative Slidology



3. a. Compared to the simple slide, the elevation of a parallel slide is _____

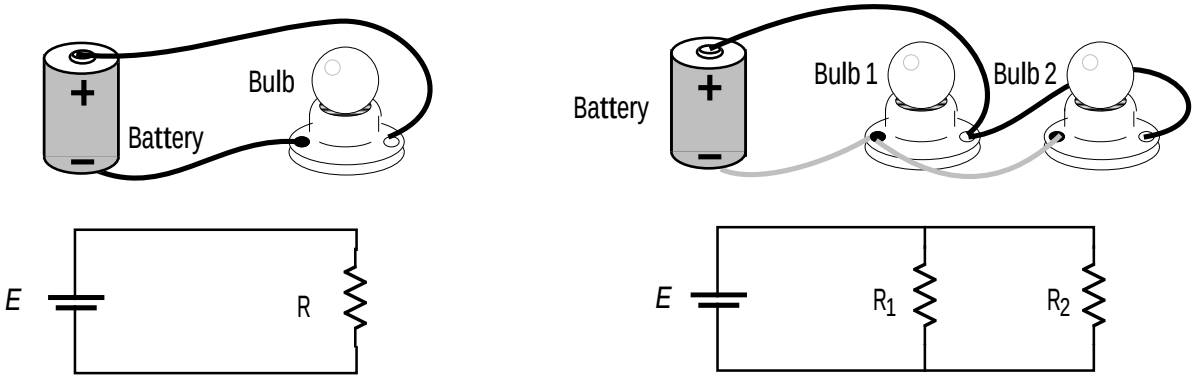
b. Compared to the simple slide, the flow rate* (incline) of a parallel slide is _____
*The passenger capacity of the arrangement. For example, two identical slides can carry twice as many passangers as one.

c. Compared to the simple slide, the effective run length** of a parallel slide is _____
**The run length of a single, simple slide that would have the same flow rate as the parallel slide.

d. Compared to the simple slide, the bun-burning on a parallel slide is _____

4. What characteristic—if any—do both sections of a parallel slide **always** have in common?
__Vertical drop __Incline __Run length __Bun-burning

Moving on to circuits



5. a. Compared to a simple circuit, the voltage of a parallel circuit is _____

b. Compared to a simple circuit, the current of a parallel circuit is _____

c. Compared to a simple circuit, the resistance of a parallel circuit is _____

d. Compared to a simple circuit, the power of a parallel circuit is _____

6. What characteristic—if any—do both resistors in a parallel circuit **always** have in common?
__Voltage __Current __Resistance __Power

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