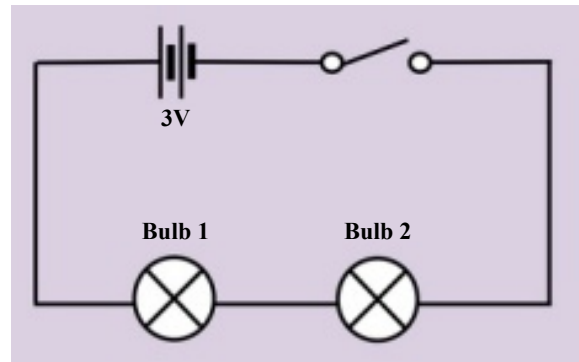


QUIZ: DC CIRCUITS

Two bulbs are wired in series with a precise 3V power supply. When you close the switch, the bulbs light and they appear to have the same brightness.

- If the voltage across Bulb 1 is measured to be 1.5V, the voltage across Bulb 2 is most probably *closest* to

A) 0V	C) 1.5V	E) 3V
B) 1V	D) 2V	
- True or false: The current across Bulb 1 will be less than the current across Bulb 2.
- True or false: In this series circuit, if Bulb 1 burns out, Bulb 2 will also go out.
- When a third bulb is added to the circuit,
 - all three bulbs get brighter, so the circuit is drawing more current from the power supply.
 - all three bulbs get brighter, but this means the circuit draws *less* current with 3 bulbs than with two.
 - all three bulbs get dimmer, which means that the circuit is drawing more current with three bulbs than with 2.
 - all three bulbs get dimmer because the increased resistance means that less current can be drawn by the circuit.
 - all three bulbs go out completely. Usually with a big explosion. We are just lucky that no one got hurt in lab that day.



The same two bulbs are now re-wired into a parallel circuit.

- When a third bulb is added in parallel, the total current
 - will remain unchanged. No matter how many bulbs you use, the total current remains exactly the same.
 - will increase, and the bulbs will appear much dimmer than a single bulb connected to the 3V power supply.
 - will decrease. All three bulbs will appear much dimmer than a single bulb connected to the 3V power supply.
 - will decrease, and as a result all three bulbs will seem to get brighter than a single bulb wired to the 3V power supply.
 - will increase, and the bulbs will appear with the just about the same brightness a single bulb connected to the 3V power supply.
- True or false: In this parallel circuit, if Bulb 1 burns out, Bulb 2 will also go out.
- Of all the circuits you constructed, which drew the *greatest* amount of current?

A) One bulb by itself.	C) Three bulbs in series.	E) Three bulbs in parallel.
B) Two bulbs in series.	D) Two bulbs in parallel.	
- True or false: The 68 Ω resistor draws more current than the 51 Ω resistor when they are wired together in series.
- True or false: The 68 Ω resistor draws more current than the 51 Ω resistor when they are wired together in parallel.
- True or false: The voltage across the 68 Ω resistor is greater than the voltage across the 51 Ω resistor when they are wired together in series.
- True or false: The voltage across the 68 Ω resistor is greater than the voltage across the 51 Ω resistor when they are wired together in parallel.

