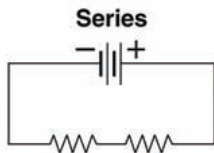


1. Voltage and Current in Circuits

	Series	Parallel
voltage	Different across loads	Same across all loads
current	Same through all loads	Different through loads

2. (a)



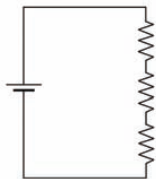
(b) This is a series circuit.

(c) It is a series circuit because all of the current flows through every device in the circuit. There are no alternate current paths.

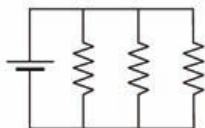
3. (a) 12.0 V

(b) 12 V

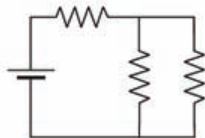
4. (a) Three resistors in series:



(b) Three resistors in parallel:



(c) One resistor in series and two resistors in parallel:



5. Two pathways in a parallel circuit with different resistances will have different currents passing through them. The same voltage applied across the two pathways will result in currents through the two pathways that are inversely proportional to the resistance of the pathways. A small amount of current will flow through a pathway with a large resistance. A large amount of current will flow through a pathway with a small resistance.

6. (a) The order will not affect the intensity since the total current flowing in the circuit flows through each device and depends on the total resistance of the circuit. The total resistance is independent of the order of the series-connected devices.

(b) When the circuit is connected in parallel, the order of connection of the devices is still unimportant. In the parallel circuit, the bulbs will each flow different amounts of current because of their different resistances. Because of this, the bulbs will light with different intensities.