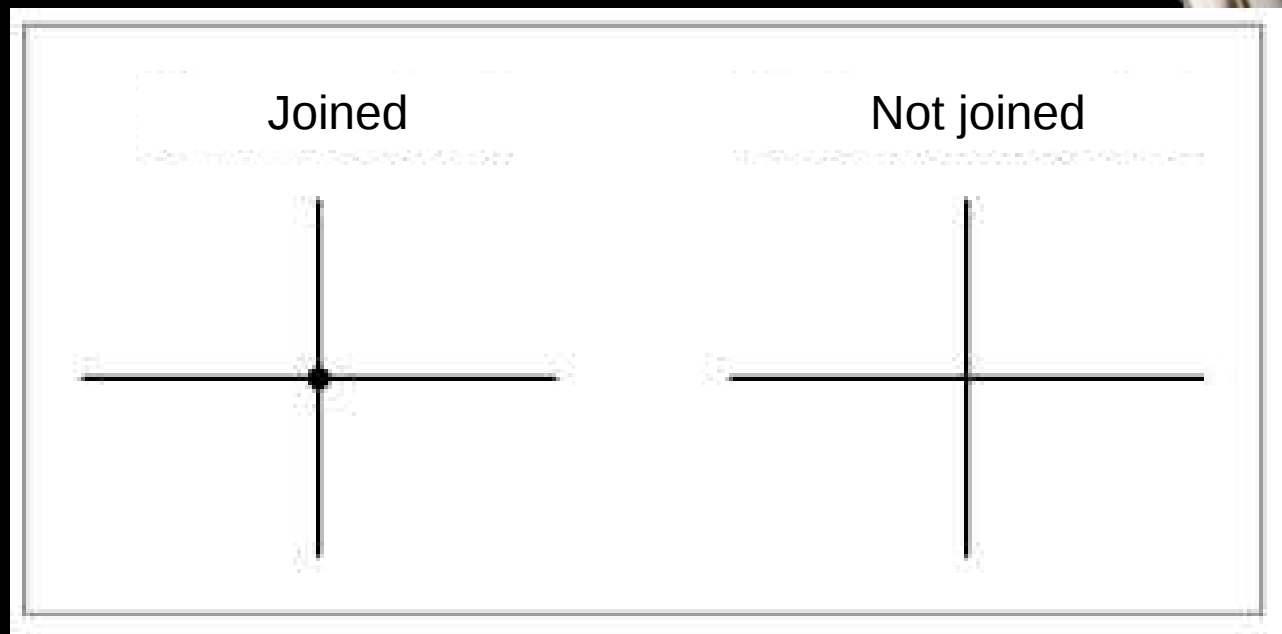


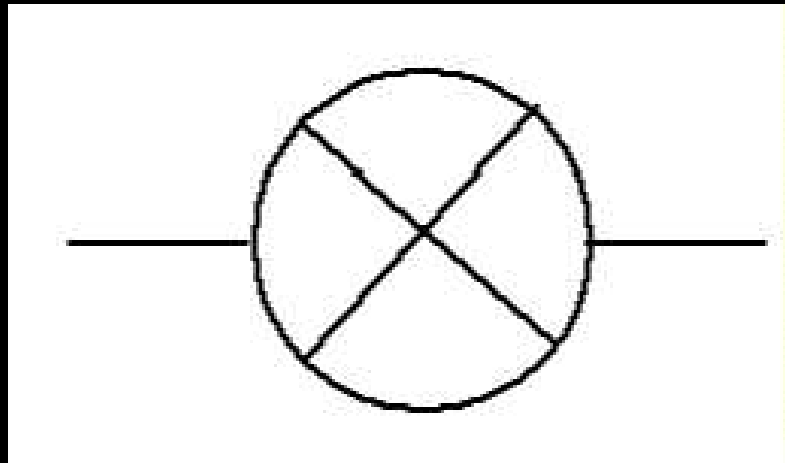
Connecting wires

- Symbols of connecting wires
- Connecting wires (joined) and connecting wires (not joined)



Bulb

- Symbol of bulb



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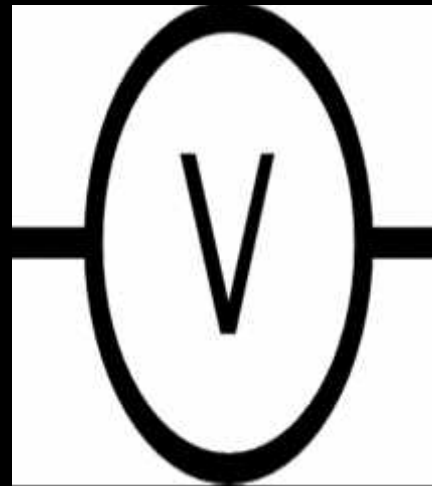
Electric Current

- Flow of electric charges or flow of electrons through a conductor
- depends on # of e^- passing a point in a given time
- measured in amperes (A)



Measuring Voltage

- Voltmeter



Ohm's Law

$$V = I \times R$$

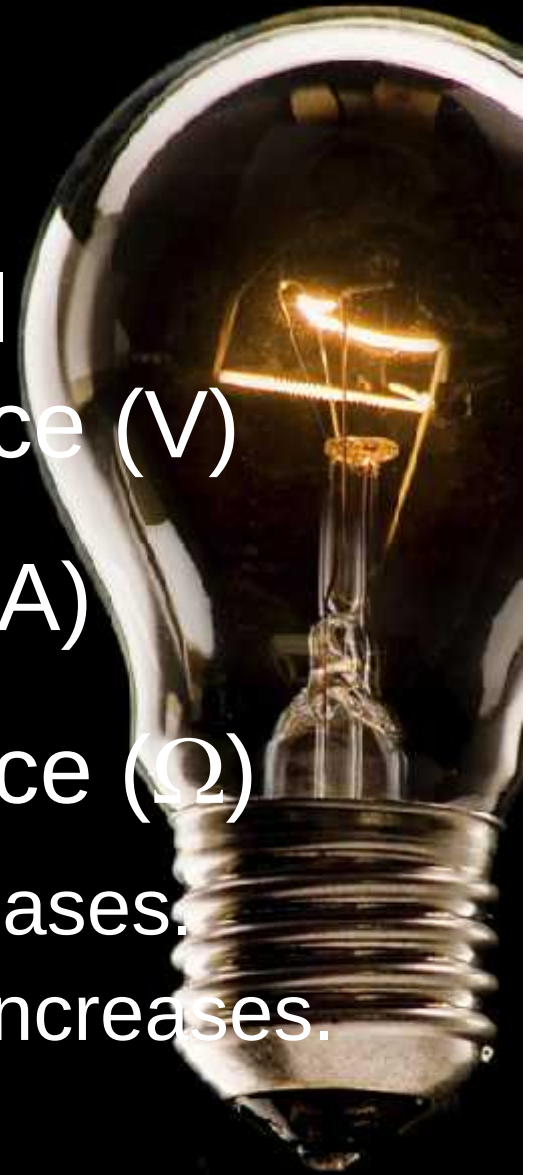
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V: potential difference (V)

I: current (A)

R: resistance (Ω)

- Voltage increases when current increases.
- Voltage decreases when resistance increases.

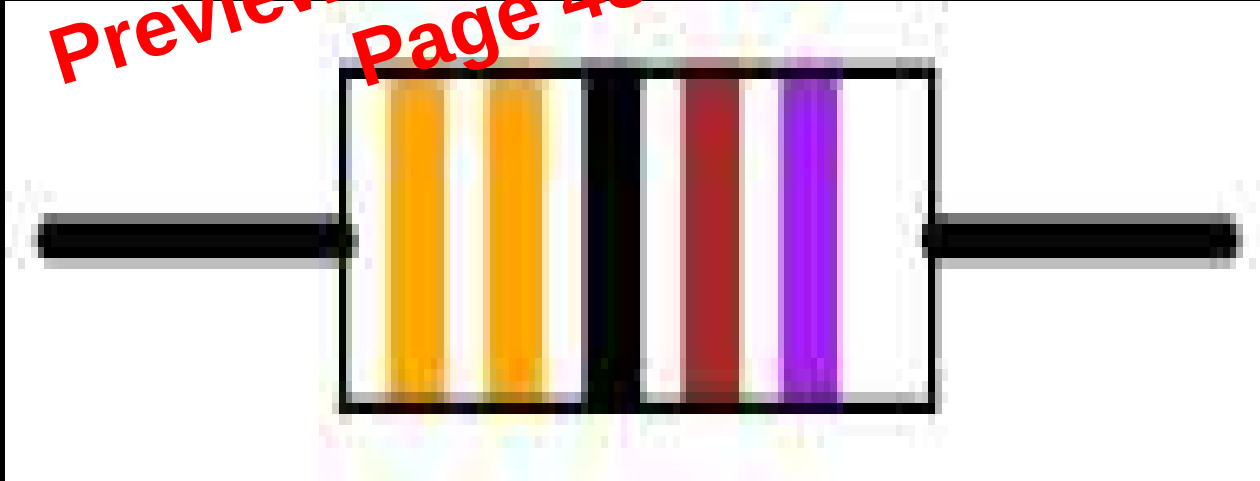


What is a resistor?

- Appliances need to ensure that the correct size of current flows to operate properly
- To control the size of the current, electrical components called **resistors** are used in the circuits.



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Sample Problems:

Suppose that you have five appliances connected in series. The refrigerator has a resistance of $20\ \Omega$; the TV set, $10\ \Omega$; the radio, $5\ \Omega$; the flat iron, $75\ \Omega$; and the electric stove, $55\ \Omega$. If the circuit is connected to a direct current of 220 V , what is

- total resistance in the circuit?
- the total current?
- the voltage across each appliance?

