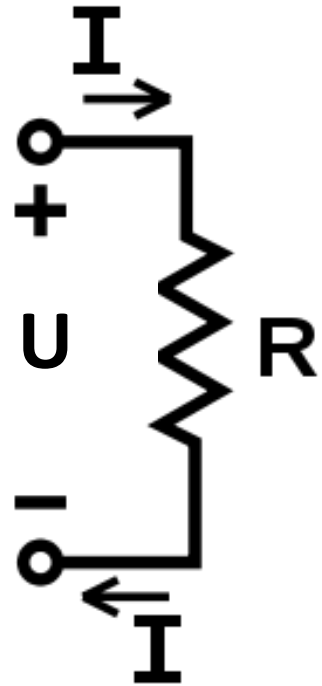


# Ohm's Law

$$V = I \cdot R$$

- **V** is **Voltage**, between two ends of a wire (or resistor, light bulb etc).  
Measured in **Volts [V]**
- **I** is **Electric Current**, the total charge flowing through the wire in 1 sec.  
Measured in **Amperes [A]** (Coulomb per second) : **1A=1C/s**
- **R** is **Resistance** of the wire. Measured in **Ohms [Ω]**. **1Ω=1V/A**



# Homework

## Problem 1

An electric heater is made out of a piece of wire with resistance  $R = 10 \Omega$ , plugged into a standard 110V outlet. Find the current through this wire, and the overall power of this heater (remember that  $\text{Power} = V \cdot I$ ).

## Problem 2

Two resistors,  $10 \Omega$  and  $20 \Omega$  are connected to a 1.5V battery in parallel. Sketch the circuit, and find the total current flowing via the battery.

You want to replace these two resistors with a single one, so that the current stays the same. How large should be its resistance?