

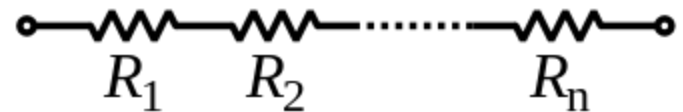
# EE 001

- Circuits: current flows from battery through the system back to battery
- Voltage (V): difference in electric potential energy (per unit charge) between two points
- Resistance (R): how a material (circuit component) reduces the current that flows through it
- Current (I): rate of flow of electric charge
- Ohm's Law:  $V = IR$

# Law School

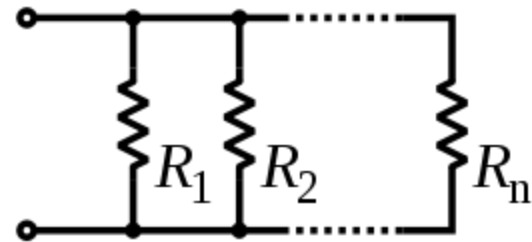
- Kirchoff's First Law: current in = current out
  - Alternatively, total current at any given point is 0

- Law of Series Resistance:



$$R_{\text{total}} = R_1 + R_2 + \cdots + R_n$$

- Law of Parallel Resistance:



$$\frac{1}{R_{\text{total}}} = \frac{1}{R_1} + \frac{1}{R_2} + \cdots + \frac{1}{R_n}$$

# Wheatstone Bridge

- Galvanometer: device that measures voltage (modeled as a short circuit)
- Purpose: measure resistance of  $R_x$

