

Ohm's Law is one of the most fundamental and important laws governing electrical and electronic circuits. It relates current, voltage and resistance for a linear device, such that if two are known, the third can be calculated.

**Definition- Ohm's Law** states that the current flowing in a circuit is directly proportional to the applied potential difference and inversely proportional to the resistance in the circuit.

**What it is-** Ohm's Law describes the way current flows through a material when different levels of voltage are applied. Some materials like electrical wires present little resistance to the current flow and this type of material is called a conductor. Hence if this conductor is placed directly across a battery for example, a lot of current would flow.

In other instances another material may impede the flow of current, but still allow some though. In electrical circuits, these components are often called resistors. Yet other materials let virtually no current though and these materials are called insulators

Formula

# Ohm's Law formula

The Ohm's Law formula or equation is very straightforward.

Ohm's law can be expressed in a mathematical form:

$$V=IR$$

**Where:**

V = voltage expressed in Volts

I = current expressed in Amps

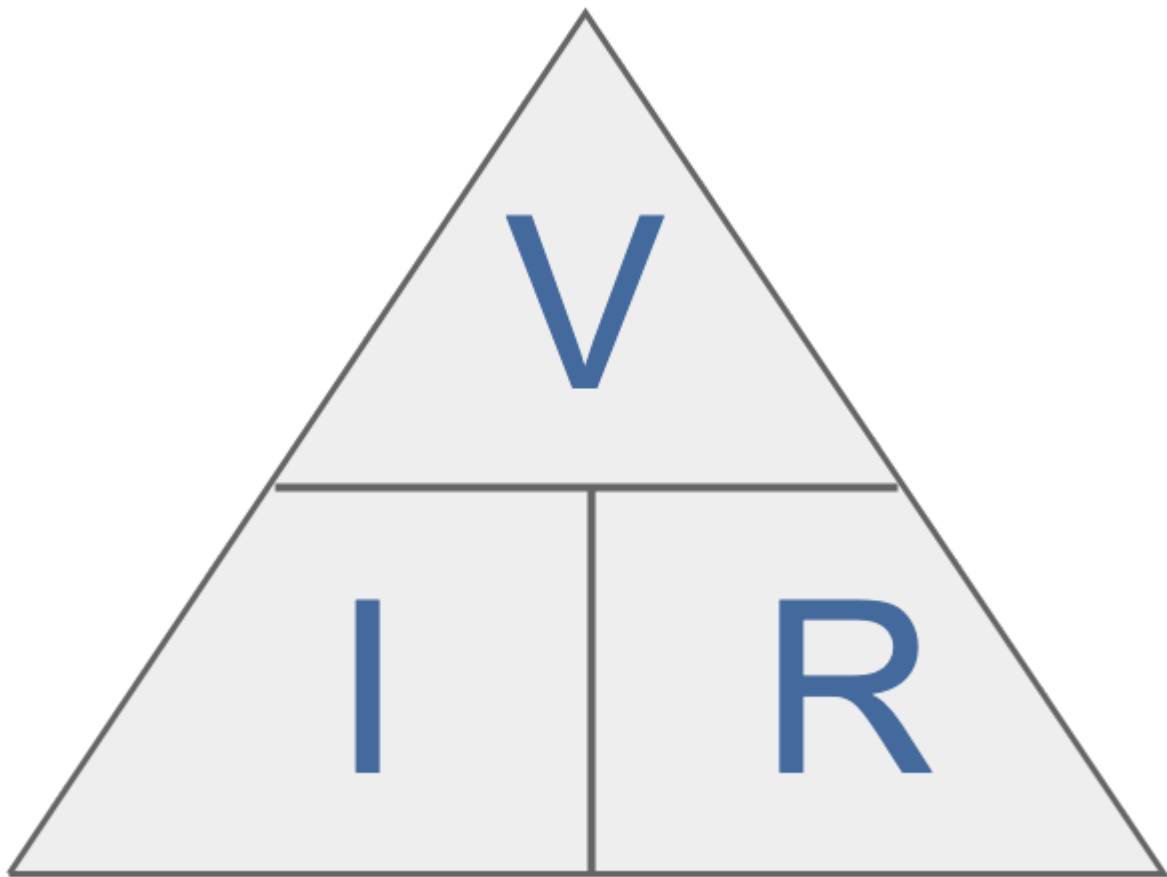
R = resistance expressed in Ohms

The formula can be manipulated so that if any two quantities are known the third can be calculated.

$$I=V/R$$

Or

$$R=V/I$$



#### Relations

Ohm's law defines the **relationship between** the **voltage**, **current**, and resistance in an electric circuit:  $i = v/r$ . The **current** is directly proportional to the **voltage** and inversely proportional to the resistance

Ohm's law defines the **relationship between** the **voltage**, current, and **resistance** in an electric circuit:  $i = v/r$ . ... This means that increasing the **voltage** will cause the current to increase, while increasing the **resistance** will cause the current to decrease.