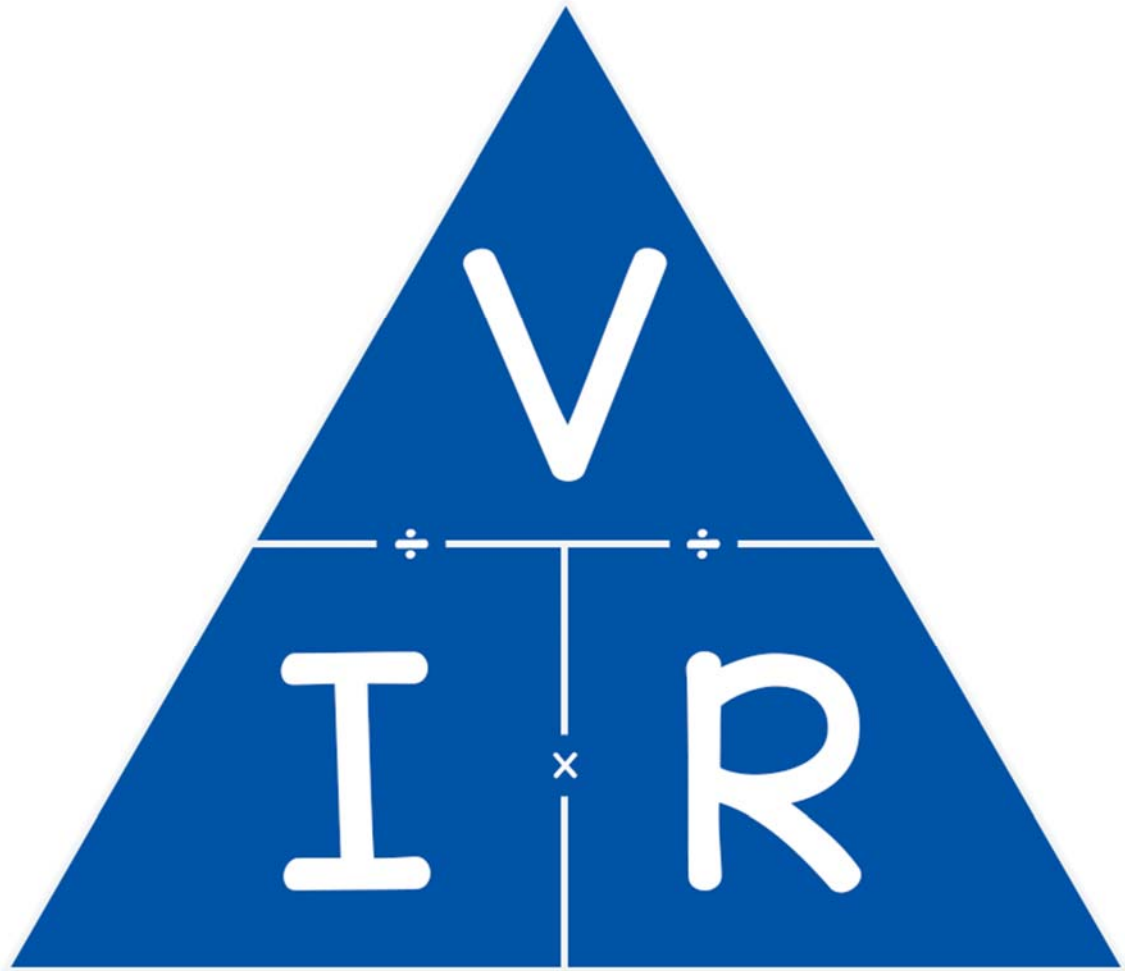# Ohms Triangle

Three formulas for Ohm's Law

Voltage (V) = Current (I) x Resistance (R)

Current (I) = Voltage (V) ÷ Resistance (R)

Resistance (R) = Voltage (V) ÷ Current (I)

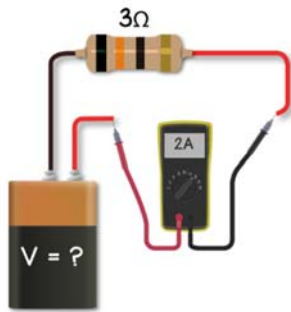Voltage is measured in the unit of Volts, represented with a "V"

Current is measured in the unit of Amps (Amperes), represented with an "A"

Resistance is measured in the unit of Ohm's, represented with a "Ω"

Worked Examples

Voltage

3Ω

In this circuit we have a 3Ω resistor connected to a battery with an unknown voltage. The current in the circuit is 2A. Find the voltage.

2A

Using ohm's triangle, we find the formula:
Voltage (V) = Current (I) x Resistance (R)

V = ?
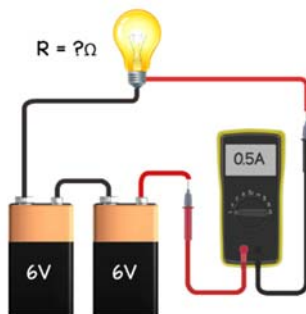
Voltage = 2A x 3Ω
Voltage = 6V
Answer is 6V

Current

3Ω

In this circuit we have a 3Ω resistive lamp connected to a 6V battery. The current in the circuit is unknown. Find the current.

Using ohm's triangle, we find the formula:
Current (I) = Voltage (V) ÷ Resistance (R)

?A

6V

Current = 6V ÷ 3Ω
Current = 2A
Answer is 2A

Resistance

R = ?Ω

In this circuit we have a resistive lamp connected to two 6V batteries, which are wired in series, providing 12V to the circuit. The current in the circuit is 0.5A. Find the resistance.

0.5A

Using ohm's triangle, we find the formula:
Resistance (R) = Voltage (V) ÷ Current (I)

6V   6V

Resistance = 12V ÷ 0.5A
Resistance = 24Ω
Answer is 24Ω