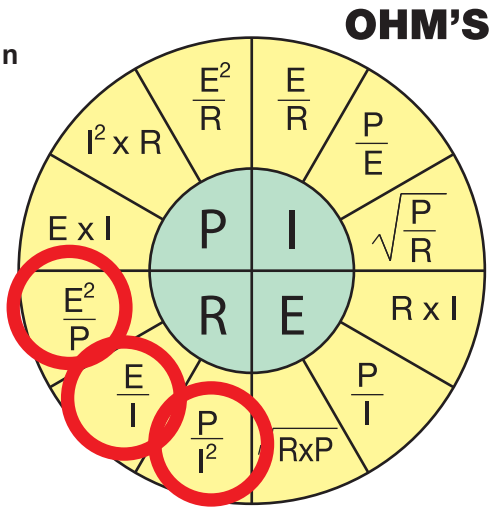
"Calculating Resistance using the OHM's Law Wheel"

What is the Resistance?

Resistance is the opposition to the passage of the electrical current through a conductor, the unit of measurement is OHMs (Ω).

if you know two of the following you can calculate it:

- **Voltage**
- **Watts**
- **Amperes**



E = Voltage
I = Amperes
R = Resistance
P = Watts

Substitute the two known values in the yellow ring to obtain the unknown value in the green ring.

Example 1

E = 120 volts

P = 60 watts

$$R = \frac{E^2}{P} = \frac{120^2}{60} = \frac{14{,}400}{60} = 240 \text{ ohms}$$

R = 240 ohms

Example 2

I = 0.5 amps

E = 120 volts

$$R = \frac{E}{I} = \frac{120}{0.5} = 240 \text{ ohms}$$

R = 240 ohms

Example 3

P = 60 watts

I = 0.5 amps

$$R = \frac{P}{I^2} = \frac{60}{0.5} = \frac{60}{0.25}$$

R = 240 ohms

SUPERCOOL™ SLIDE RULE

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