



INTRODUCTION TO ELECTRICITY

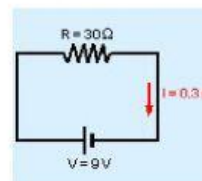
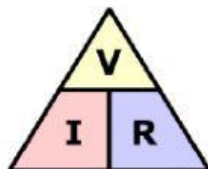
WORKS 2

OHM'S LAW AND POWER

The three basic quantities (Voltage, current and resistance) are related to each other by **ohm's law**

Ohm's Law

$$V = I \cdot R$$



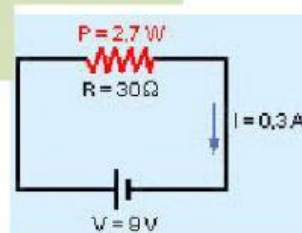
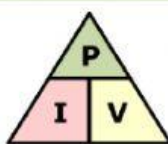
Power (P)

Lamps, stoves, motors, transform electrical energy into light, heat, movement ... The amount of energy that a device consumes in one second is the power (P) and is measured in watts (W)

The more power a device has, the more energy it will consume during the time it is turned on, the brighter a light bulb will shine, the more heat a stove will give, ...

The power consumed by a device is calculated knowing the voltage to which it is connected and the intensity of the current that passes through it.

$$P = V \cdot I$$



1. Calculate the power of a bulb that consumes 25 A of current if it is connected to a 12V battery.

Data:

Formula

I =

Solution **P =** W

V =

2.  A hair dryer has a power of 2200W, calculate the value of current and the value of the resistance if we connect it to the mains with a voltage of 230V.

Data:

Formula

P =

Solution **I =** A

V =

Now let's calculate the value of the resistance:

Ohm's law

Solution

R = Ω