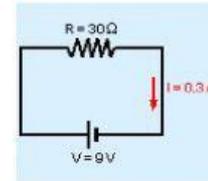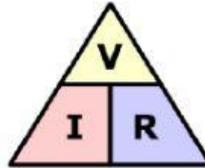**WORKS 2**   **OHM'S LAW AND POWER**

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.

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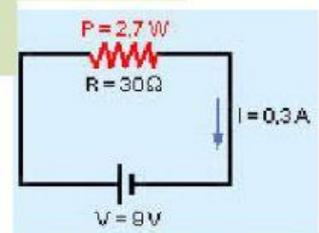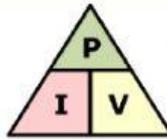
1. Calculate the power of a bulb that consumes 25 A of current if it is connected to a 12V battery.

   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