`Ohms Law.

What does it mean…
E = IxR (Voltage = Current multiplied by Resistance)
R = E/I (Resistance = Voltage divided by Current)
I = E/R (Current = Voltage Divided by Resistance)

What is a WATT **P=EI** ~The measure unit of power used in a circuit. for instance 3 lights in a circuit all using 60w bulbs would be 180w on that circuit.

Power is defined as $P = V \times I$.

Substituting in Ohm's Law for V and I:

$V = I \times R$

$P = V \times I$

$V = R \times I$

$\therefore$

$P = R \times I \times I = I^2R$

$P = I^2R$

$P = V \times I$

$I = \dfrac{V}{R}$

$\therefore$

$P = V \times \dfrac{V}{R} = \dfrac{V^2}{R}$

$P = \dfrac{V^2}{R}$

This is proportional to the amount of voltage and amount of current flow through that circuit.

Volts E	Amps I	Ohms R	Watts P
153	.056		
	.065	470	
24			124
	.00975		.035
		6.8	.86
460		72	

Volts E	Amps I	Ohms R	Watts P
48	1.2		
	154	.8	
277			760
	.0043		.0625
		130	.0225
96		2.2	

An electric Iron is connected to 120v and has a current draw of 8A. How much power is used by the iron?

Calculate the solution in Watts

P=EI   P=120x8 P=960W

Power Law Wisc Practice

An electric hair dryer has a power rating of 1000W. How much current will it draw when connected to 120V?

I=P/E   I= 1000/120   I=8.33A

The quantity to be found here is amperage or current. The known quantities are power and Voltage. Use the following equation

$R = P/I^2$

R= <u>1440</u>
      12x12
R=<u>1440</u>
      144
R = 10