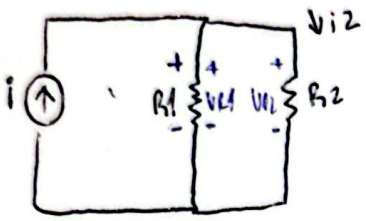
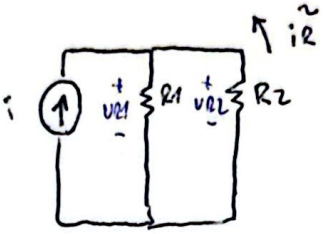
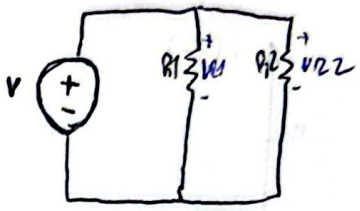
(2)







V = 1V
i = 1,2A
R1 = 10Ω
R2 = 2Ω

Ley de kirchoff

$$i = i_2 + i_2$$

Ley de Ohm

$$I_1 = \frac{V}{R1} = \frac{1}{R1} \quad ; \quad i_2 = \frac{V}{R2} = \frac{1}{R2}$$

$$i = i_1 + i_2$$

$$i = \frac{1}{R1} + \frac{1}{R_2}$$

$$i = \frac{1}{10\Omega} + \frac{1}{2\Omega}$$

$$i = 0,1 + 0,5$$

$$i = 0,6\,A$$

POTENCIA DISIPADA

$$P_{R2} = i_2^2 \cdot R_2$$

$$= \left(\frac{1}{2\Omega}\right)^2 \cdot 2\Omega$$

$$= \frac{1}{4} \cdot 2$$

$$= \frac{1}{2}$$

$$\boxed{P_{R2} = 0,5\,W}$$

POTENCIA DISIPADA POR LA R_2

LEY DE KIRCHOFF DE CORRIENTES:

En todo nodo, la suma de las corrientes que entran es igual a la suma de las que salen

LEY DE OHM

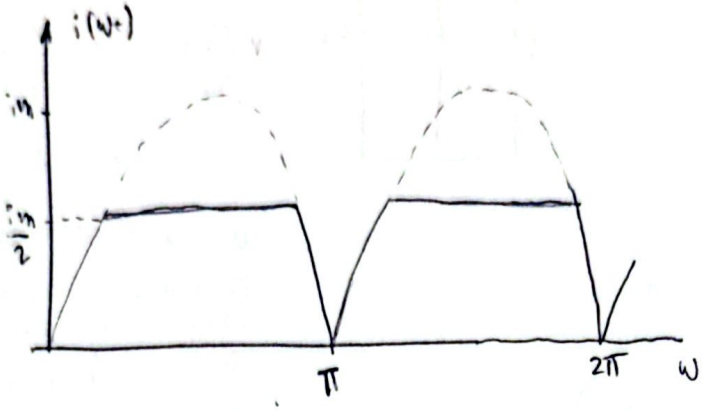
Relación entre tensión, corriente y resistencia

$$V = i \cdot R \longrightarrow i = \frac{V}{R}$$

⑤

$I_m = 4A$

$\frac{I_m}{4} = 1A$



$$f(t) = \begin{cases} I_m \cdot \text{sen}(wt) & \text{si } \text{sen}(wt) \geq \frac{1}{4} \\ 0 & \text{si } \text{sen}(wt) < \frac{1}{4} \end{cases}$$

$\text{Sen}(wt) = \frac{1}{4}$

$wt = \text{arcosen}\left(\frac{1}{4}\right)$

$wt = 0,2527 \text{ rad}$

desde $\partial 1 = \text{arcosen}\left(\frac{1}{4}\right)$

hasta $\partial 2 = \pi - \text{arcosen}\left(\frac{1}{4}\right)$

- $Im = 4A$
- Tramamiento $= 1A$
- $\partial 1 = \text{sen}^{-1}\left(\frac{1}{4}\right) = 0,2527$
- $\partial 2 = \pi - \partial 1 = 2,8889$
- Periodo $T = \pi$

como es señal periodica y se repite igual en cada medio ciclo.

medio periodo x2

Valor eficaz $\longrightarrow$ $fef = \sqrt{\frac{1}{T}\int_0^T f^2(t)\,dt}$. T periodo . f(t) función

$$fef = \sqrt{\frac{2}{T}\int_{\partial 1}^{\partial 2} I^2_m \,\text{sen}^2(wt)\,dt}$$

$\text{sen}^2(x) = \frac{1-\cos(2x)}{2}$

$$= \sqrt{\frac{2}{T}\int_{\partial 1}^{\partial 2} \frac{1-\cos(2wt)}{2}\,dt}$$

$$= \sqrt{\frac{2}{T}\,\frac{1}{2}\left[\int_{\partial 1}^{\partial 2} 1\,dt - \int_{\partial 1}^{\partial 2}\cos(2wt)\,dt\right]}$$

$$= \sqrt{\frac{2}{T}\,\frac{1}{2}\left[(\partial 2 - \partial 1) - \frac{1}{2w}\cdot\text{Sen}(2w\partial 2) - \text{Sen}(2w\partial 1)\right]}$$

$$= \frac{\partial 2 - \partial 1}{2} - \frac{\text{Sen}(2w\partial 2) - \text{Sen}(2w\partial 1)}{4w}$$

$$fef = Im \cdot \sqrt{\frac{1}{\pi}\left(\frac{\partial 2 - \partial 1}{2} - \frac{\text{Sen}(2\partial 2) - \text{Sen}(2\partial 1)}{4}\right)}$$

$$= 4 \cdot \sqrt{\frac{1}{\pi}\left(\frac{2,8889 - 0,2527}{2} - \frac{\text{sen}(5,7778) - \text{sen}(0,5054)}{4}\right)}$$

$$fef = 4 \cdot \sqrt{\frac{1,5587}{\pi}} = 4 \cdot \sqrt{0,4961} = 4 \cdot 0,7043$$

$$\boxed{fef = 2,82A}$$