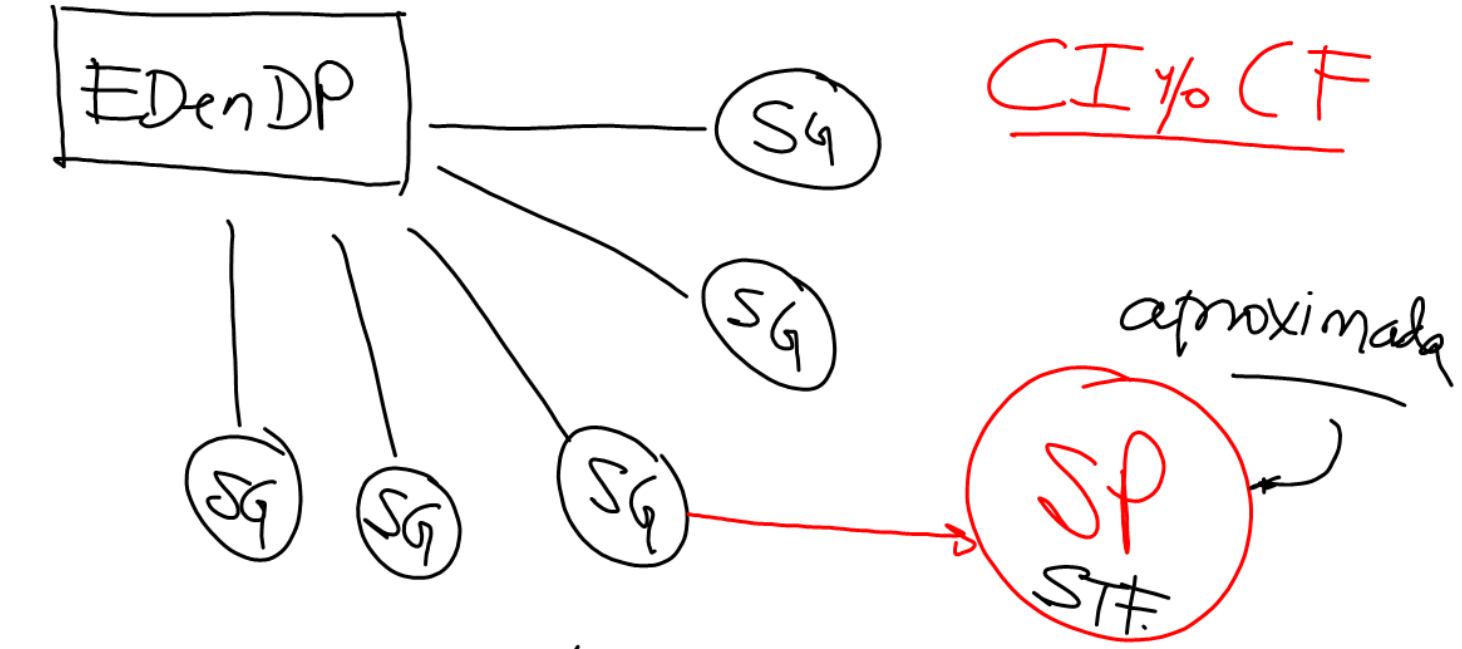
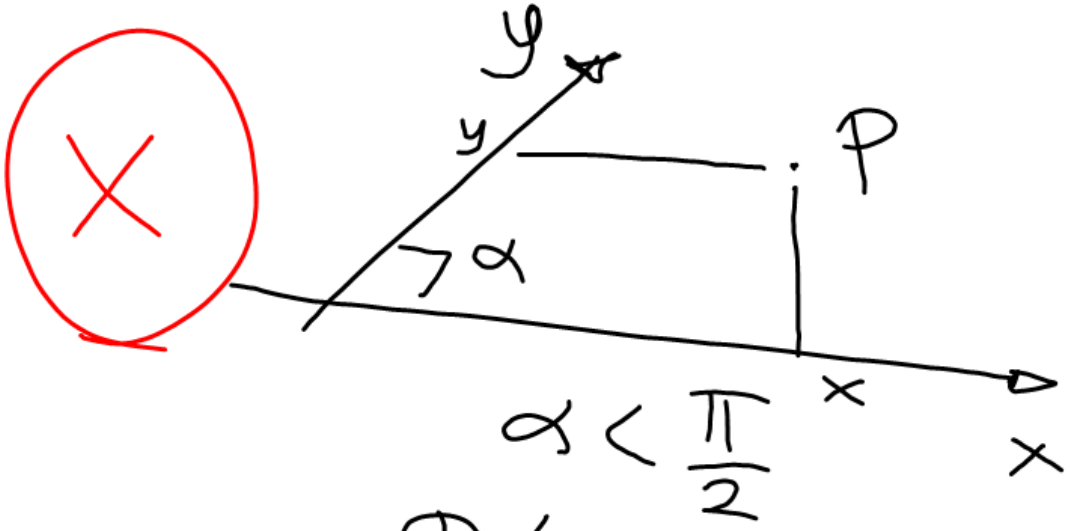
SERIE TRIGONOMÉTRICA DE FOURIER ∞



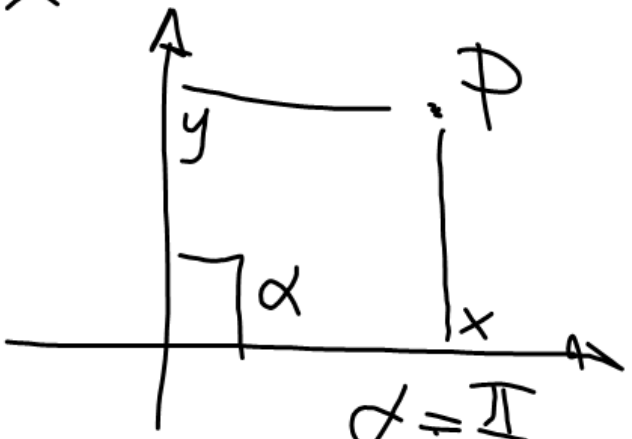
$$SG = F_1(x,y) + F_2(x,y)$$



$\alpha < \frac{\pi}{2}$

$P(x, y, \alpha)$

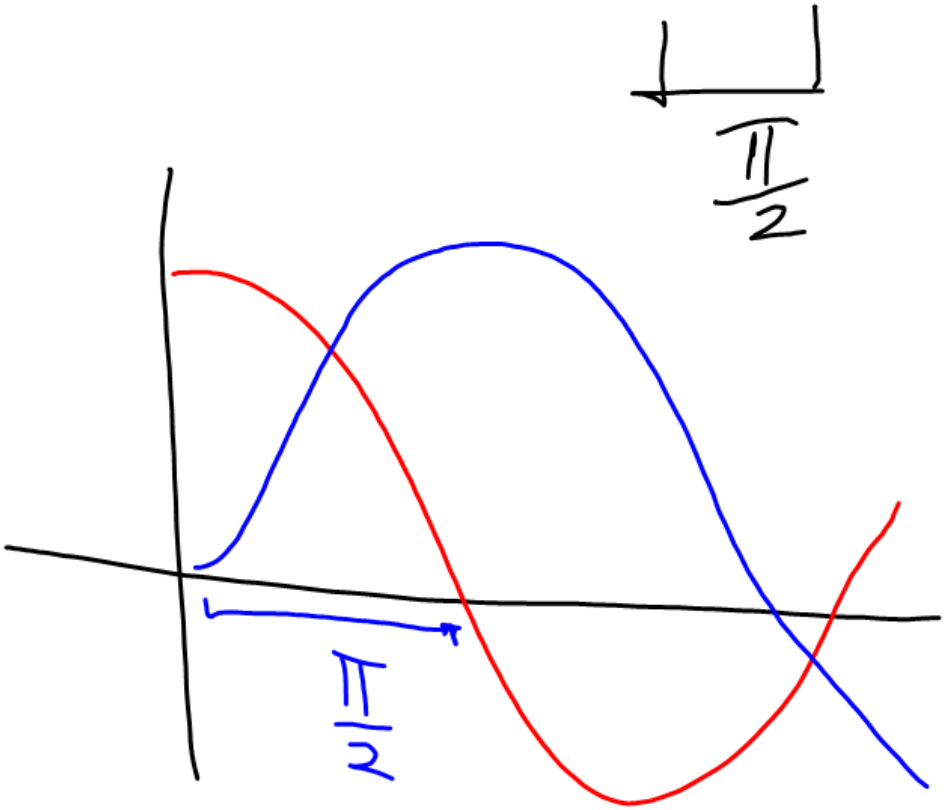
SISTEMA CARTESIANO



$\alpha = \frac{\pi}{2}$

$P(x, y)$

$\cos(nx)$ $\operatorname{sen}(nx)$



$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} \left(a_n \cos\left(\frac{n\pi}{L}x\right) + b_n \operatorname{sen}\left(\frac{n\pi}{L}x\right) \right)$$

$-L \leq x \leq L$

STF.

$$a_0 = \frac{1}{L} \int_{-L}^{L} f(x)\,dx$$

$$a_n = \frac{1}{L} \int_{-L}^{L} f(x) \cos\left(\frac{n\pi}{L}x\right) dx$$

$$b_n = \frac{1}{L} \int_{-L}^{L} f(x) \operatorname{sen}\left(\frac{n\pi}{L}x\right) dx$$

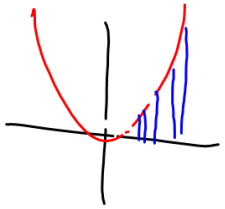
Una $f(t)$ $-L \le t \le L$ será PAR

$$f(-t) = f(t)$$

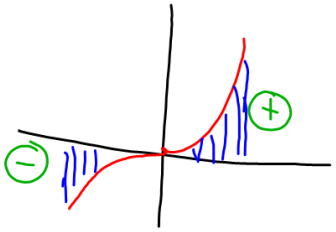
una $f(t)$ $-L \le t \le L$ será IMPAR

PAR $f(-t) = -f(t)$

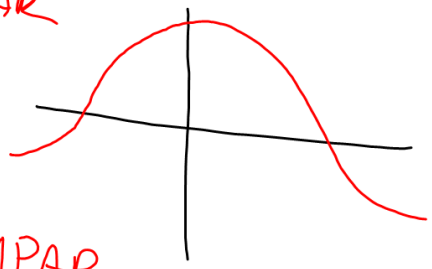
$$\int_{-L}^{L} f\,dt = 2\int_{0}^{L} f\,dt$$



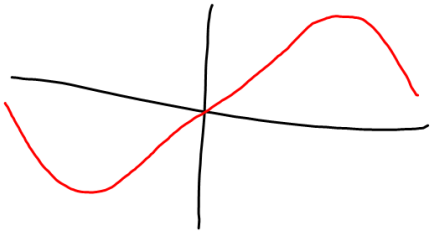
IMPAR $\int_{-L}^{L} f\,dt = 0$



PAR



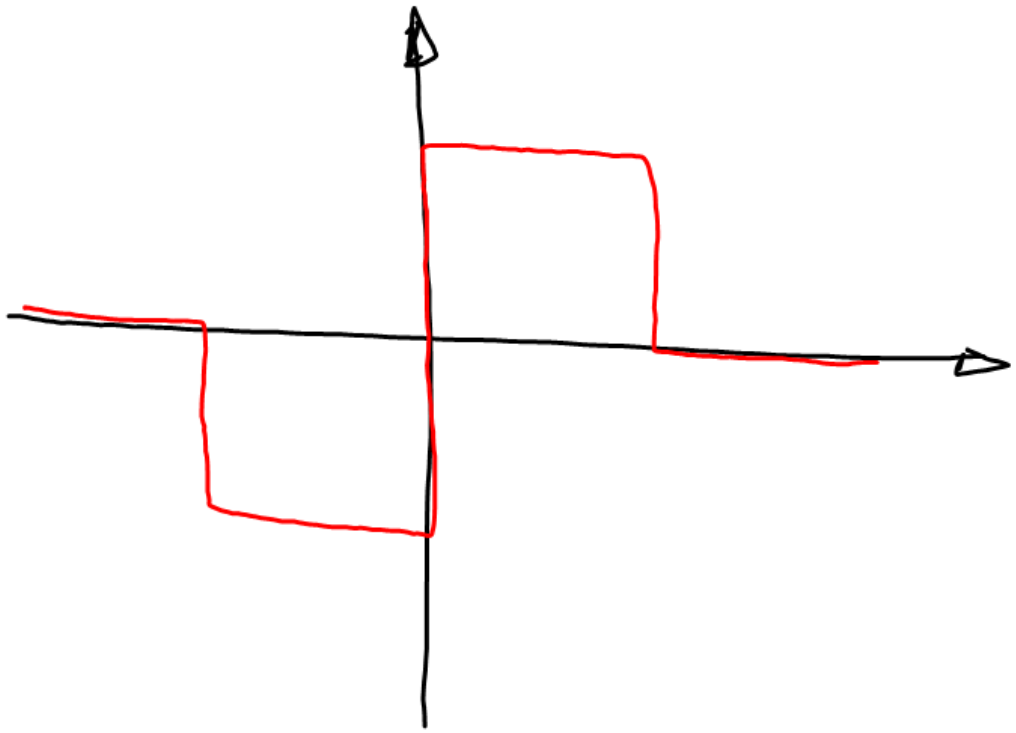
IMPAR



$\langle PAR\rangle\langle PAR\rangle = \langle PAR\rangle$

$\langle IMPAR\rangle\langle IMPAR\rangle = \langle PAR\rangle$

$\langle PAR\rangle\langle IMPAR\rangle = \langle IMPAR\rangle$

$$\int_{-L}^{L} IMPAR = 0$$

$$\int_{-L}^{L} PAR = 2\int_{0}^{L} PAR$$