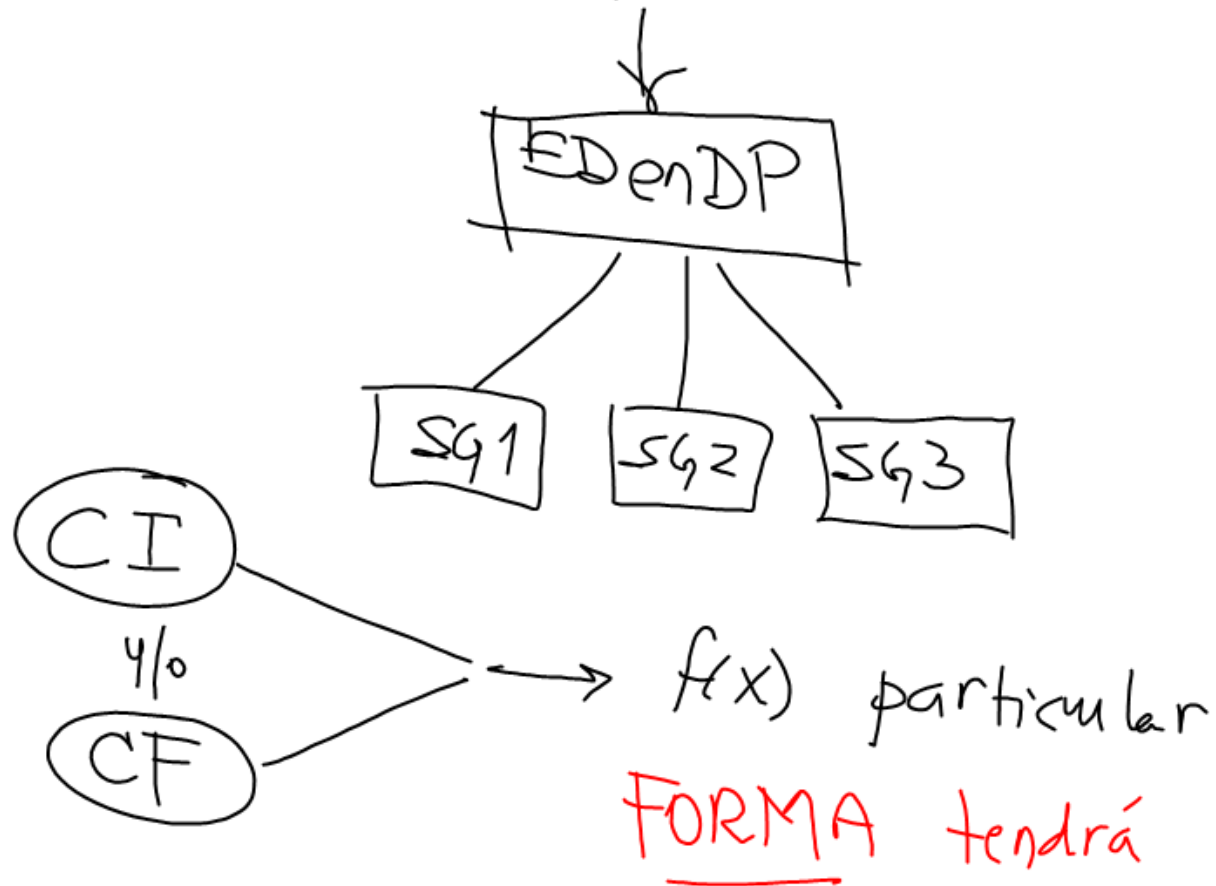


SERIE TRIGONOMÉTRICA DE FOURIER

Método de Separación Variables



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

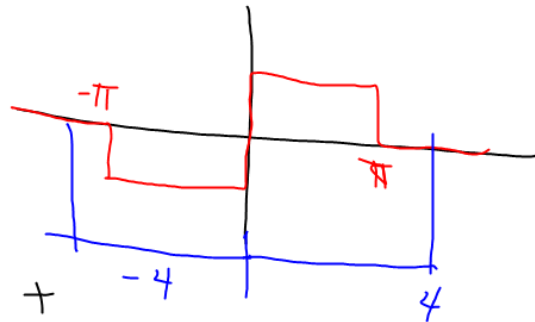
$$-L < x < L$$

$$a_0 = \frac{1}{L} \int_{-L}^L f(x) dx \rightarrow \underline{\underline{\text{Valor}}}$$

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

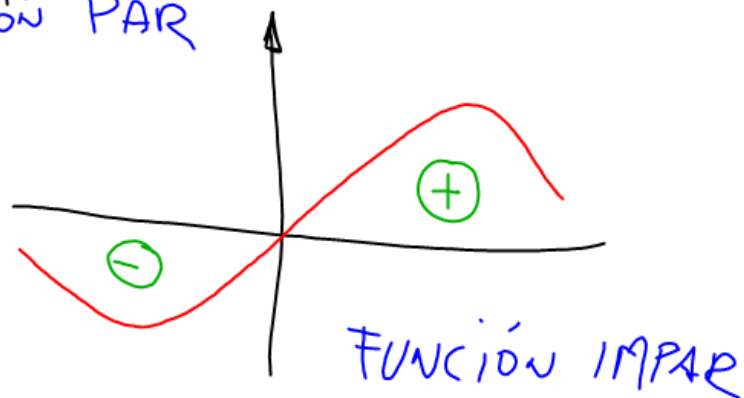
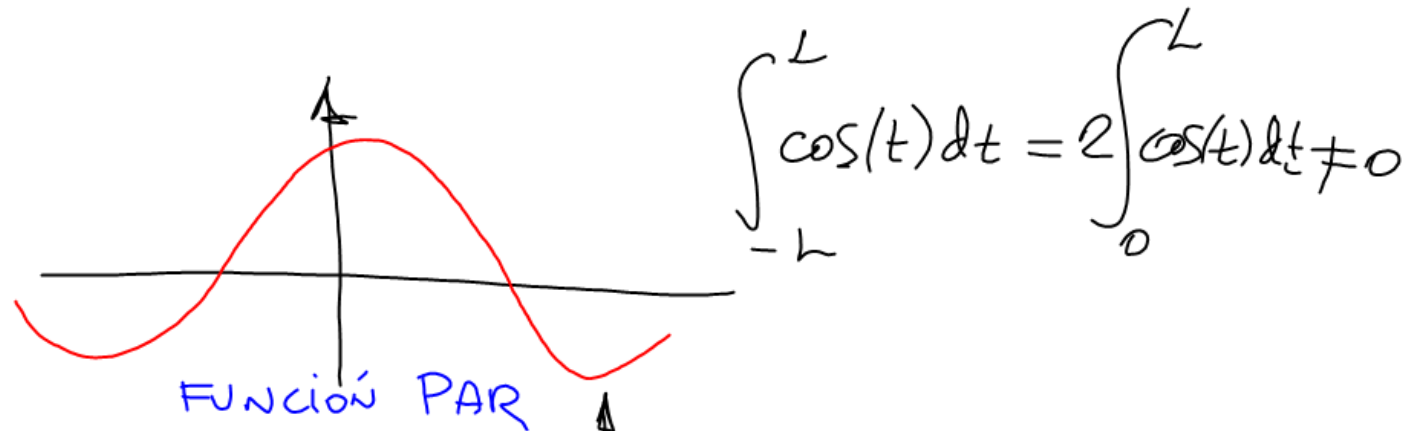
$$b_n = \frac{1}{L} \int_{-L}^L f(x) \operatorname{sen}\left(\frac{n\pi}{L}x\right) dx$$

$$\boxed{\begin{array}{l} e^{2x} \\ -2 < x < 2 \\ L=2 \end{array} \quad a_0 = 13.6}$$



$$f = u(t+\pi) + 2(u(t)) - u(t-\pi)$$

$$L=4$$



$$\int_{-L}^L \text{sen}(t) dt = 0$$

$$\langle \text{PAR} \rangle \langle \text{PAR} \rangle \Leftrightarrow \langle \text{PAR} \rangle$$

$$\langle \text{IMPAR} \rangle \langle \text{IMPAR} \rangle \Leftrightarrow \langle \text{PAR} \rangle$$

$$\langle \text{PAR} \times \text{IMPAR} \rangle \Leftrightarrow \langle \text{IMPAR} \rangle$$

$f \Rightarrow \text{par}$

$$a_0 = \frac{1}{L} \int_{-L}^L f \, dt \neq 0$$

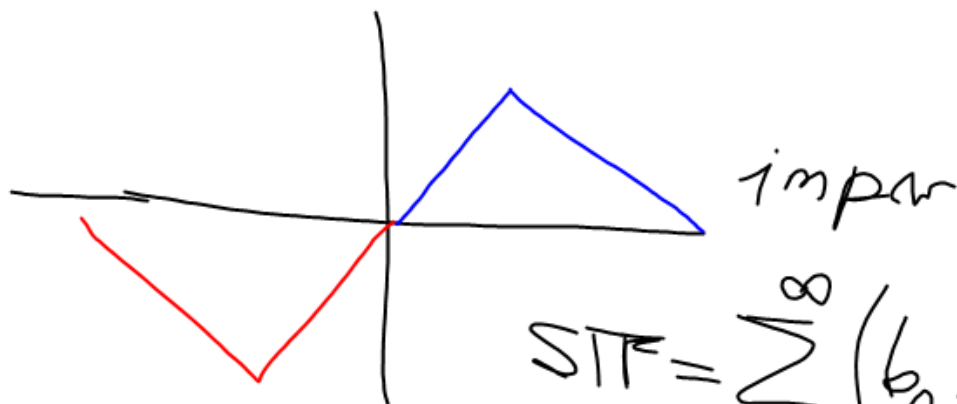
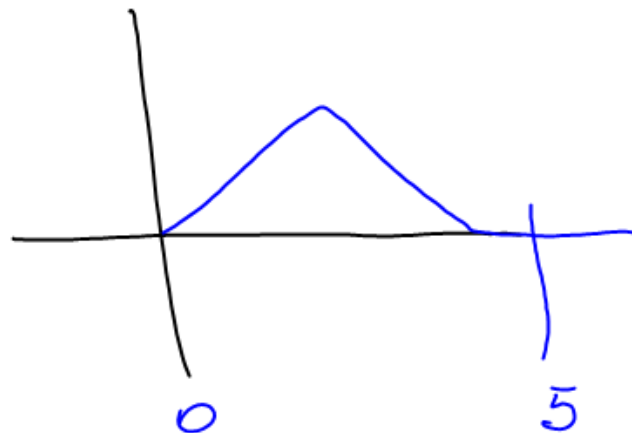
$$a_n = \frac{1}{L} \int_{-L}^L f \cdot \cos\left(\frac{n\pi}{L}t\right) dt \neq 0$$

$$b_n = \frac{1}{L} \int_{-L}^L f \cdot \sin\left(\frac{n\pi}{L}t\right) dt = 0$$

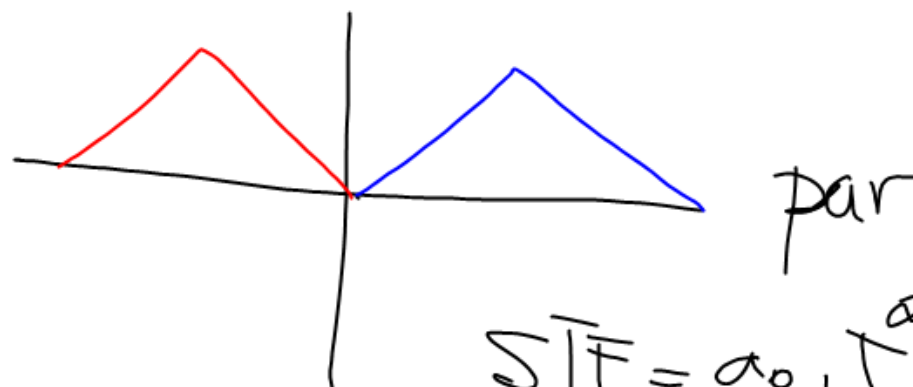
$$\text{STF}_{\text{par}} = \frac{a_0}{2} + \sum_{n=1}^{\infty} a_n \cos\left(\frac{n\pi}{L}t\right).$$

$$\text{STF}_{\text{impar}} = \sum_{n=1}^{\infty} b_n \sin\left(\frac{n\pi}{L}t\right)$$

$h =$



$$\text{STF} = \sum_{n=1}^{\infty} \left(b_n \operatorname{sen} \left(\frac{n\pi}{L} t \right) \right)$$



$$\text{STF} = \frac{a_0}{2} + \sum_{n=1}^{\infty} \left(a_n \cos \left(\frac{n\pi}{L} t \right) \right)$$

3^{er} Parcial

Martes 19 nov. 11:00 - 13:00 J106
para los estudiantes que traigan
su equipo

Jueves 21 nov. 11:00 - 13:00 J205A
para los estudiantes que no traigan
equipo.