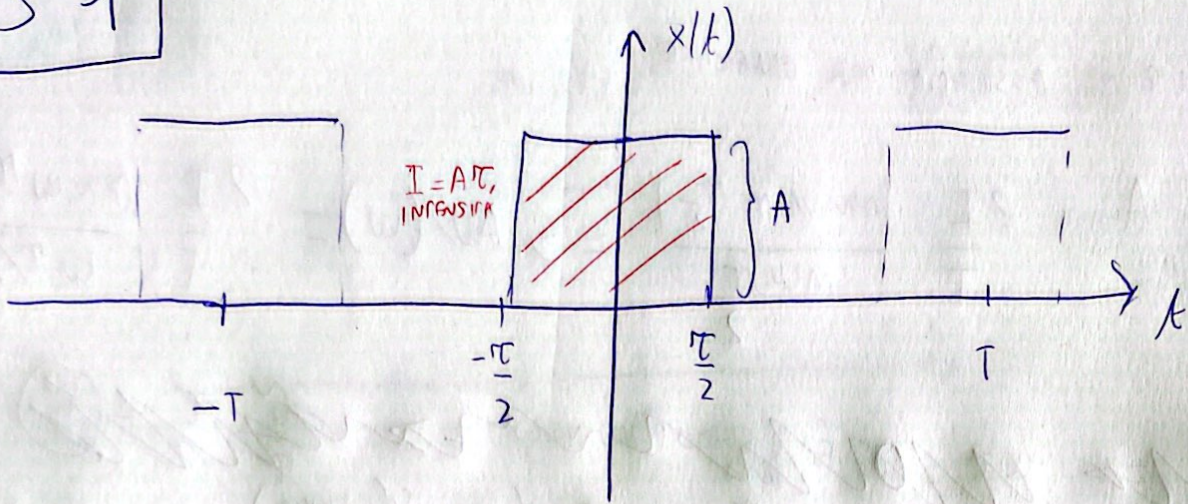


ES 1



• $x(t) = A$

• $\{C_m\}; \{A_m\}, \{\varphi_m\}$

$$C_m = \frac{1}{T} \int_{-\pi/2}^{\pi/2} x(t) e^{-j\omega_0 m t} dt = \frac{A}{T} \int_{-\pi/2}^{\pi/2} e^{-j\omega_0 m t} dt$$

$$= \frac{A}{T} \left[\frac{e^{-j\omega_0 m t}}{-j\omega_0 m} \right]_{-\pi/2}^{\pi/2} = \frac{A}{T} \frac{e^{-j\omega_0 m \pi/2} - e^{j\omega_0 m \pi/2}}{-j\omega_0 m}$$

$$= \frac{A}{T} \frac{\sin(m\omega_0 \frac{\pi}{2}) \cdot 2j}{j\omega_0 m} = \frac{A\tau}{T} \frac{\sin(m\omega_0 \frac{\tau}{2})}{\frac{m\omega_0 \tau}{2}}$$

• MULTIPLICADO $\frac{\pi}{\pi}$ PARA
ANULAR COM O $\sin x$

$$A_m = 2|C_m| = \frac{2I}{T} \frac{|\sin(m\omega_0 \frac{\tau}{2})|}{\frac{m\omega_0 \tau}{2}}$$

$$\varphi_m = -\arg\{C_m\} = \begin{cases} 0, & C_m > 0 \\ \pi, & C_m < 0 \end{cases}$$

$$A_0 = C_0 = \frac{I}{T} \quad (\text{VALOR M\u00c9DIO})$$

