

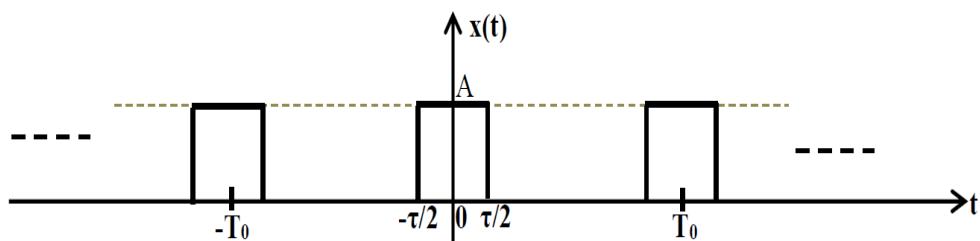


Date: 08/ 09/ 2025

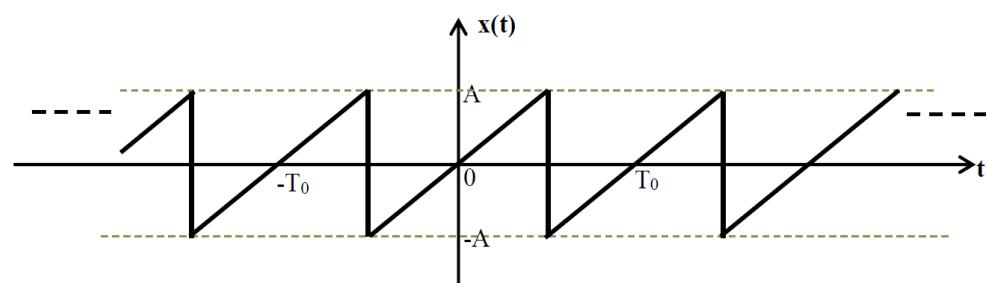
Fourier Series

1. Compute the Exponential Fourier Series components for the signals and plot their magnitude and phase response.

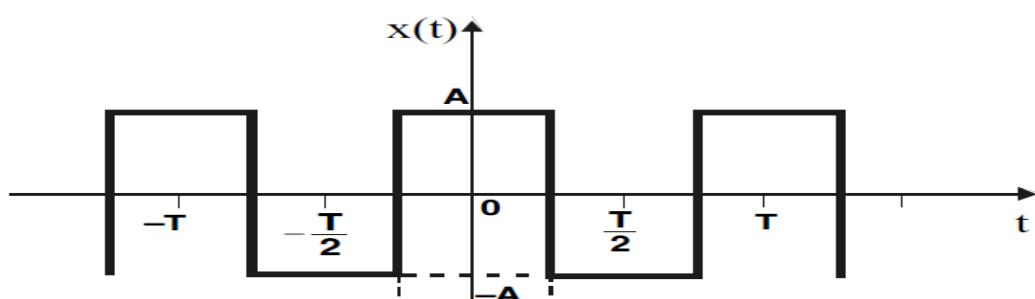
a)



b)



c)



2. A periodic signal has the FS representation, $x(t) \xleftrightarrow{w_o=\pi} C_n = -n \cdot 2^{-|n|}$. The fundamental frequency is π . Find the FS representation, d_n and w'_o without finding $x(t)$:

- a) $y(t) = x(3t)$ b) $y(t) = \frac{d}{dt}x(t)$ c) $y(t) = x(t - 1)$
d) $y(t) = \cos(4\pi t)x(t)$ e) $y(t) = x(t) + x(t + 1)$
