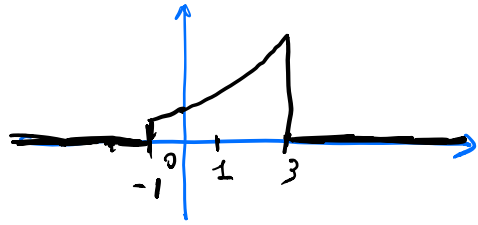


$$\underline{\text{Es}} \quad \mathcal{F}(e^{-t} p_4(t-1)) = ?$$

sol

$$e^{-t} p_4(t-1) \text{ sommabile.}$$



$$\mathcal{F}(e^{-t} p_4(t-1))(\omega)$$

$$= \mathcal{F}(e^{-t} [H(t+1) - H(t-3)])(\omega)$$

$$= \mathcal{F}(e^{-t} H(t+1))(\omega) - \mathcal{F}(e^{-t} H(t-3))(\omega)$$

$$= \mathcal{F}(e^{-(t+1)} e H(t+1))(\omega) - \mathcal{F}(e^{-(t-3)} e^{-3} H(t-3))(\omega)$$

$$= e \mathcal{F}(e^{-(t+1)} H(t+1))(\omega) - e^{-3} \mathcal{F}(e^{-(t-3)} H(t-3))(\omega)$$

$$= e e^{-2\pi i(-1)\omega} \mathcal{F}(H(t) e^{-t})(\omega)$$

$$- e^{-3} e^{-2\pi i(3)\omega} \mathcal{F}(H(t) e^{-t})(\omega)$$

$$= [e e^{2\pi i \omega} - e^{-3} e^{-6\pi i \omega}] \mathcal{F}(H(t) e^{-t})(\omega)$$

$$= \left[e^{1+2\pi i \omega} - e^{-3(1+2\pi i \omega)} \right] \frac{1}{1+2\pi i \omega}$$