

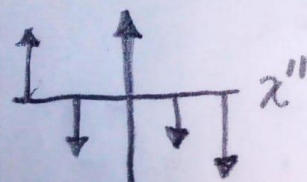
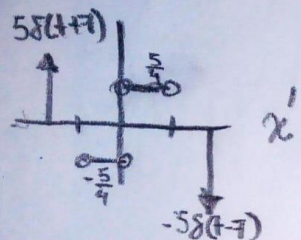
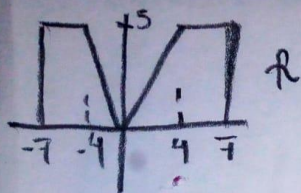


26-4-2021

Evidencia 1.12

Dual

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$$x''(t) = 5\delta(t+7) - 5\delta(t-7) - \frac{5}{4}\delta(t+4) + \frac{5}{4}\delta(t-4) + \frac{5}{2}\delta(t)$$

$$(j\omega)^2 X(\omega) = 5j\omega e^{7j\omega} - 5j\omega e^{-7j\omega} - \frac{5}{4}e^{4j\omega} + \frac{5}{4}e^{-4j\omega} + \frac{5}{2}$$

$$-X(\omega) = \frac{-5}{4\omega^2} [e^{4j\omega} + e^{-4j\omega}] + \frac{5j}{\omega} [e^{7j\omega} - e^{-7j\omega}] + \frac{5}{2\omega^2}$$

$$X(\omega) = \frac{5}{2\omega^2} \cos(4\omega) + 10(j\text{sinc}(7\omega)) - \frac{5}{2\omega^2}$$

$$= 70\text{sinc}(7\omega) + \frac{5}{2} \left[\frac{1 - 2\text{sinc}^2(2\omega)}{\omega^2} - 1 \right]$$

$$x(t) \leftrightarrow 70\text{sinc}(7\omega) - 40\text{sinc}(2\omega)$$