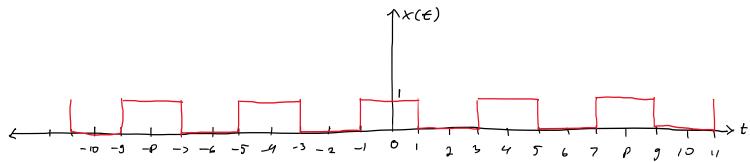
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b. 
$$W_{o} = \frac{2\pi}{\tau} = \frac{2\pi}{4} = \frac{\pi}{2}$$

c. 
$$\chi[k] = \frac{1}{T} \int_{0}^{T} \chi(t) e^{-jk \omega_{o} t} dt$$

$$\times [h] = \frac{1}{4} \int_{-1}^{3} x(t) e^{-j h \cdot \frac{\pi}{2} t} dt$$

$$X[\mu] = \frac{1}{4} \left[ \int_{-1}^{1} 1 \cdot e^{-j \frac{\pi}{2}t} dt + \int_{1}^{3} 0 \cdot e^{-j \frac{\pi}{2}t} dt \right]$$

$$\times \left[k\right] - \frac{1}{4} \left(\frac{1}{-\overline{J}k^{\frac{p}{2}}} \cdot e^{-\overline{J}k^{\frac{p}{2}}t}\right|_{-1}^{1} + O$$

$$X[k] = \frac{1}{4 - i k \frac{\pi}{2}} \cdot \left(e^{-i k \frac{\pi}{2}} - e^{-i k \frac{\pi}{2}}\right)$$

$$X[k] = \frac{1}{-ixk\pi} - 2j Sm(k\pi)$$

$$\times [h] = \frac{\sin\left(k\frac{\pi}{2}\right)}{\mu \pi}$$

$$d. \quad \beta[o] = \chi[o] = \lim_{k \to 0} \frac{\sin(k\frac{\pi}{2})}{k\pi} = \frac{1}{2}$$

$$e. \times [-k] = \frac{\sin(-k\frac{\pi}{2})}{-k\pi} = \frac{\sin(k\frac{\pi}{2})}{-k\pi} = \times [k]$$

$$B[k] = X[k] + X[-k]$$

$$= \frac{\operatorname{Sin}\left(k^{\frac{\pi}{2}}\right)}{k^{\pi}} + \frac{\operatorname{Sin}\left(k^{\frac{\pi}{2}}\right)}{k^{\pi}}$$

$$= \frac{2 \operatorname{SIn}\left(k^{\frac{\pi}{2}}\right)}{k^{\pi}}$$

5. karana 
$$\times [k] = \times [-k] \rightarrow \times [k]$$
 sungs ganap maka:  

$$A[k] = S(\times [k] - \times [-k]) = 0$$

g. 
$$x(t) = B[0] + \sum_{k=-\infty}^{\infty} \{B[k] \cos(h\omega_0 t) + A[k] \sin(h\omega_0 t)\}$$

$$\times (\epsilon) = \frac{1}{2} + \sum_{k=-\infty}^{\infty} \left[ \frac{2 \sin(k^{\frac{\pi}{2}})}{k^{\pi}} \cos(k^{\frac{\pi}{2}}t) + O \right]$$

$$\times (t) = \frac{1}{2} + \sum_{k=-\infty}^{\infty} \frac{2 \sin \left(k^{\frac{\pi}{2}}\right)}{k \pi} \cos \left(k^{\frac{\pi}{2}}t\right)$$