

ECE 301 Quiz 7.

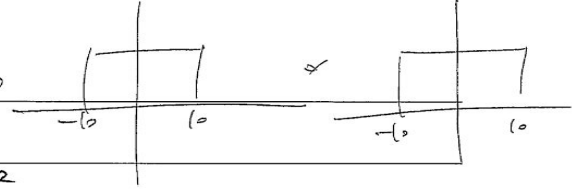
8/3 (Mon)

Quiz 7

$$X[n] = X_a(nT_s)$$

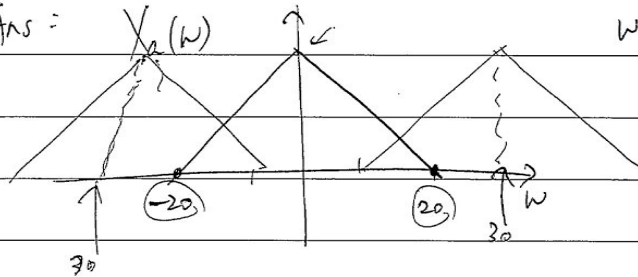
$$\text{where } X_a(t) = \left\{ \frac{\sin(10t)}{\pi t} \right\}^2$$

$$\text{and } T_s = \frac{2\pi}{30} \text{ (sampling period)}$$



Is there an aliasing when sampling or not? Briefly justify your answers.

Ans:



$$\omega_s = 2\pi F_s = \frac{2\pi}{T_s} = 2\pi \cdot \frac{30}{2\pi} = 30$$

$$\omega_s < 2 \cdot \omega_H(20)$$

\therefore There is an aliasing.