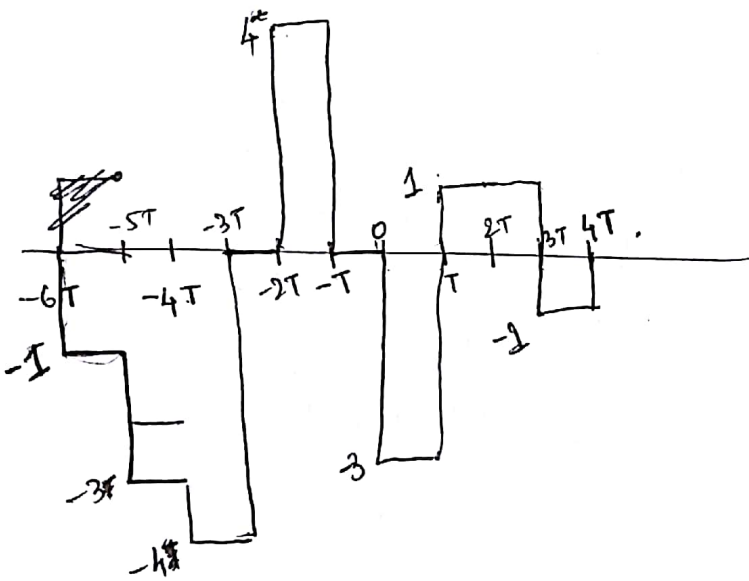
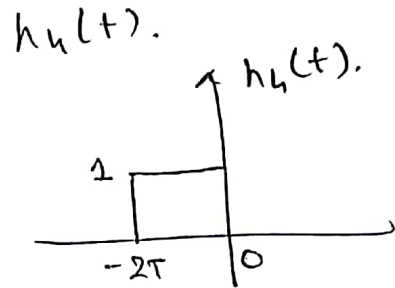
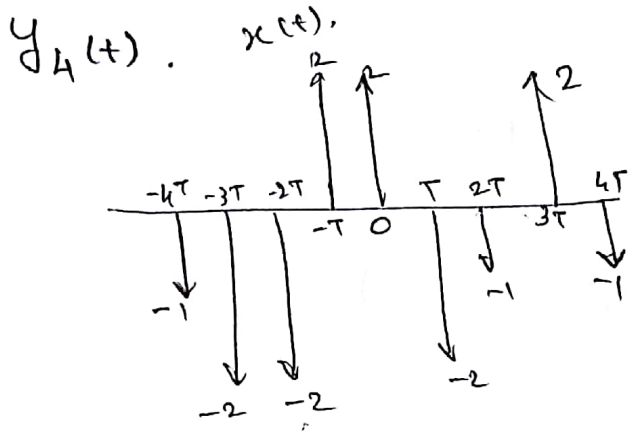


HW - 7.

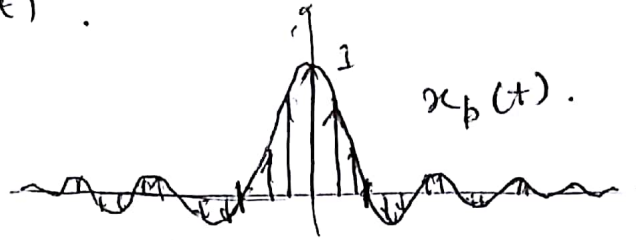
1. $y_1(t), y_2(t), y_3(t) \rightarrow$ F18 Quiz 6 P1 a, b, c.



2. Quiz 6 P2 F18

3.

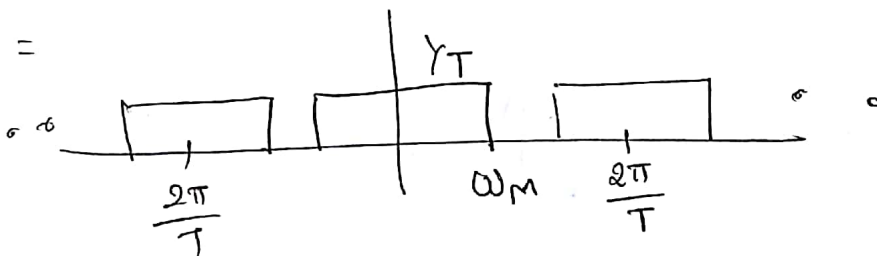
3.

 $x(t)$ 

$$b) X_p(j\omega) = \frac{1}{2\pi} x(j\omega) * P(j\omega).$$

$$P(j\omega) = \frac{2\pi}{T} \sum_{k=-\infty}^{\infty} \delta(\omega - k\omega_s)$$

$$X_p(j\omega) = \frac{1}{T} \sum_{k=-\infty}^{\infty} x(j(\omega - k\omega_s)).$$



$$c) x_p(t) = \sum_{n=-\infty}^{\infty} x(nT) \delta(t - nT).$$

$$X_p(j\omega) = \sum_{n=-\infty}^{\infty} x(nT) e^{-j\omega nT}.$$

DTFT of $x_d[n]$.

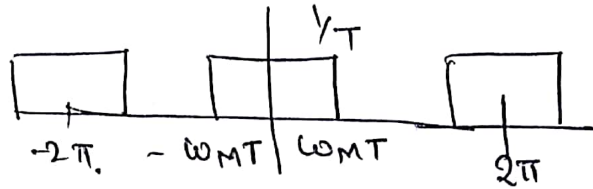
$$X_d(e^{j\omega}) = \sum_{n=-\infty}^{\infty} x_d[n] e^{-j\omega n}.$$

$$X_d(e^{j\omega}) = \sum_{n=-\infty}^{\infty} x(nT) e^{-j\omega nT}$$

$$\Rightarrow X_d(e^{j\omega}) = X_p$$

$$X_d(e^{j\omega}) = X_p(j\omega/T)$$

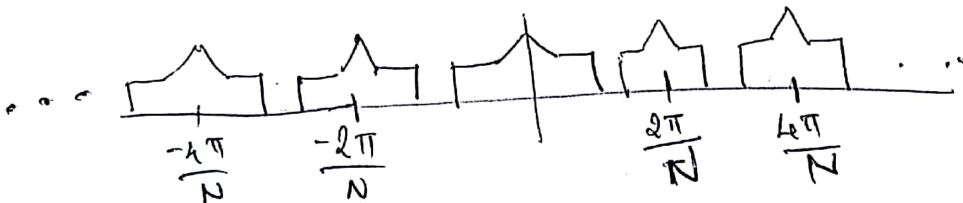
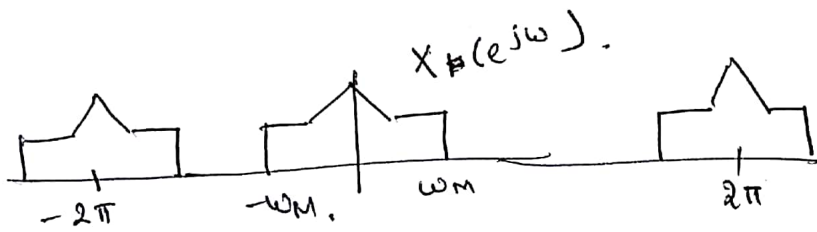
$$X_d(e^{j\omega})$$



$$4 \cdot x_p(n) = x(n) p(n) = \sum_{k=-\infty}^{\infty} x(kN) \delta(n-kN)$$

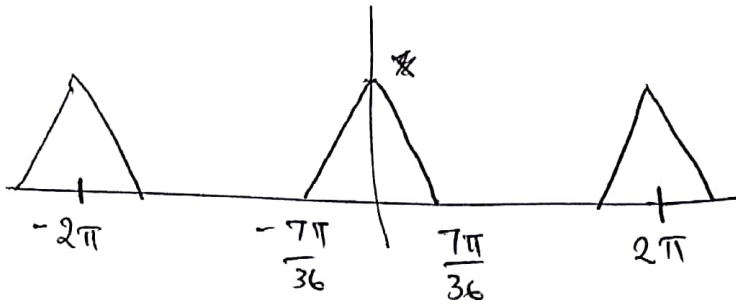
$$P(e^{j\omega}) = \frac{2\pi}{N} \sum_{k=-\infty}^{\infty} \delta(\omega - k\omega_s) \quad \omega_s = \frac{2\pi}{N}$$

$$X_p(e^{j\omega}) = \frac{1}{2\pi} X(e^{j\omega}) * P(e^{j\omega}) = \frac{1}{N} \sum_{k=0}^{N-1} X(e^{j(\omega - k\omega_s)})$$

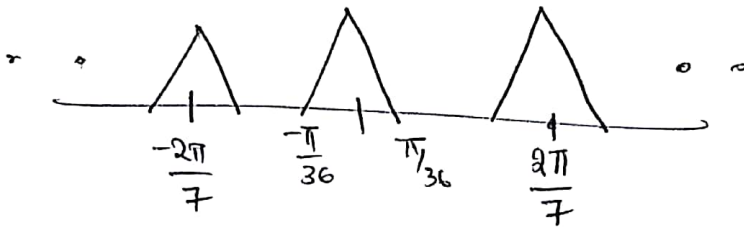


5.

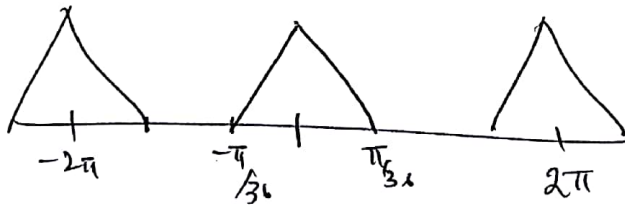
5.



↓ Upsample. by 7



↓ Interpolate.



↓ Downsample 36

