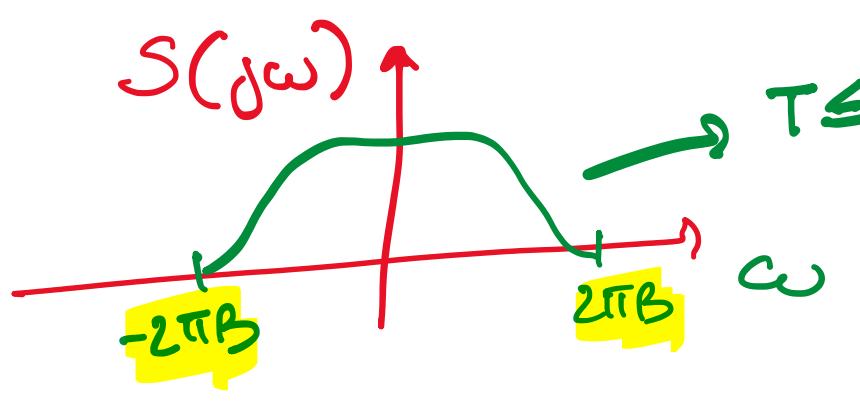
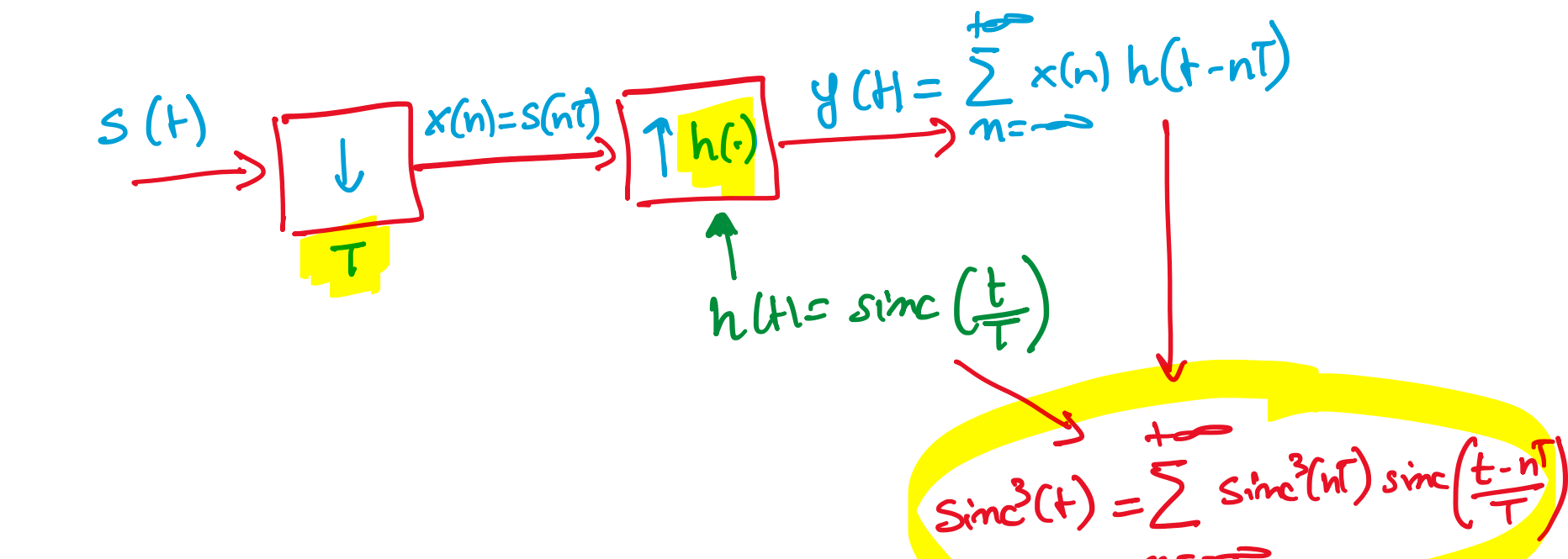


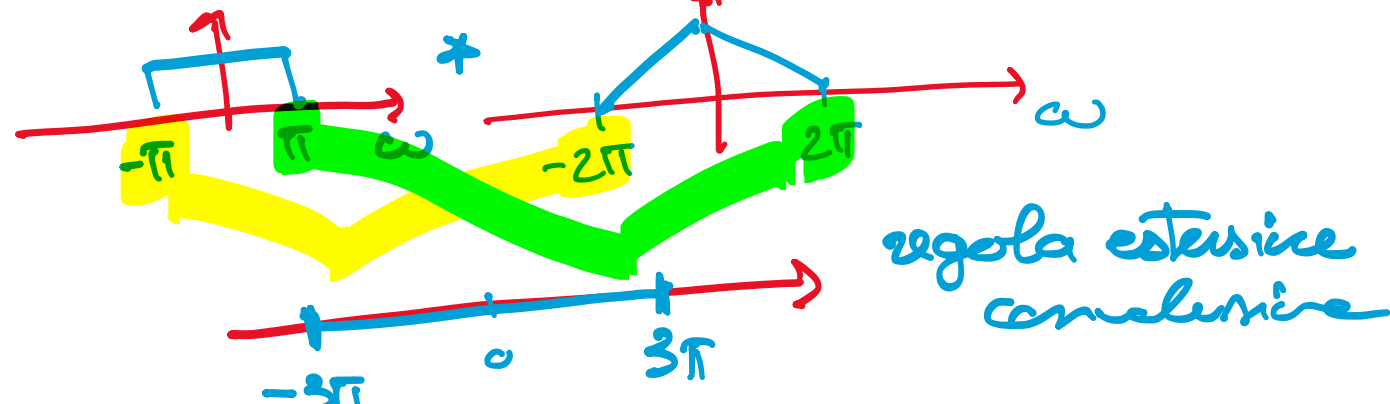
ES1 PROPORRE SOLUZIONI CAMPIONAMENTO-INTERPOLAZIONE PER IL SEGNALE  $S(t) = \text{sinc}^3(t)$



$$\text{sinc}^3(t) = \sum_{n=-\infty}^{+\infty} \text{sinc}^3(nT) \text{sinc}\left(\frac{t-nT}{T}\right)$$

$$s(t) = \text{sinc}^3(t) = \text{sinc}(t) \cdot \text{sinc}^2(t)$$

$$S(jw) = \text{rect}\left(\frac{w}{2\pi B}\right) + \text{triang}\left(\frac{w}{2\pi}\right)$$

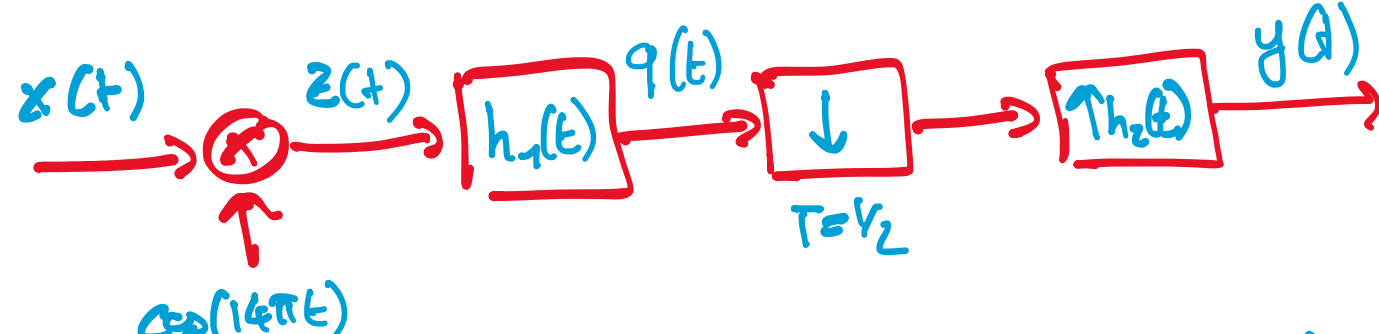


$$3\pi = 2\pi B$$

$$B = \frac{3}{2}$$

$$T = \frac{1}{2B} = \frac{1}{3}$$

ES3

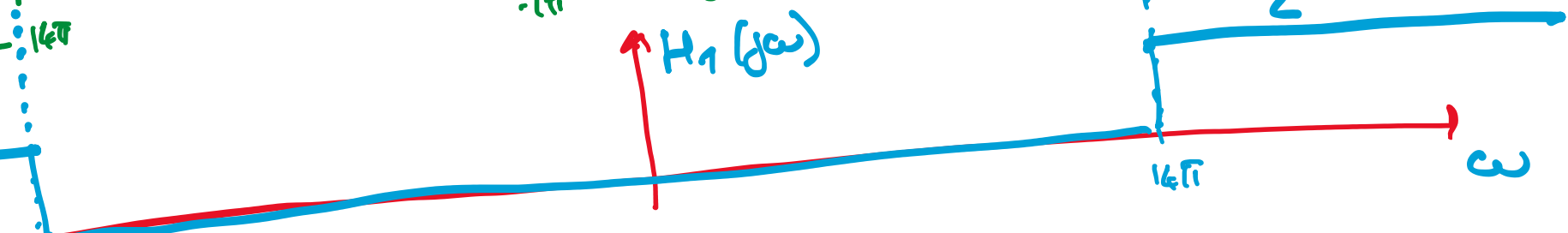
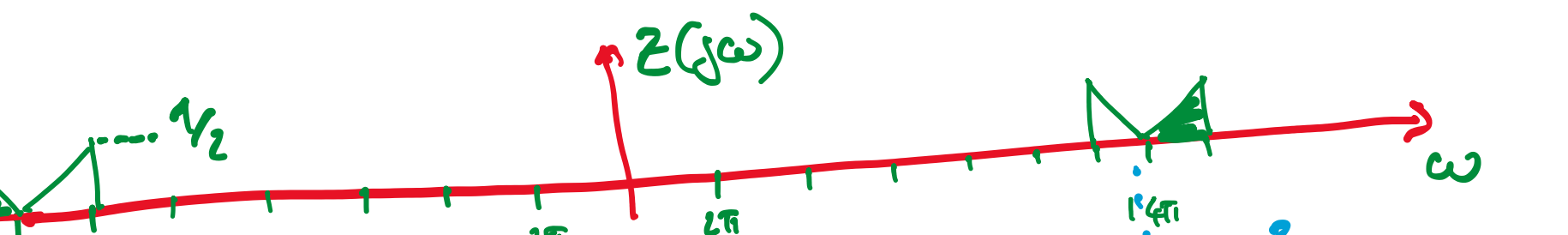
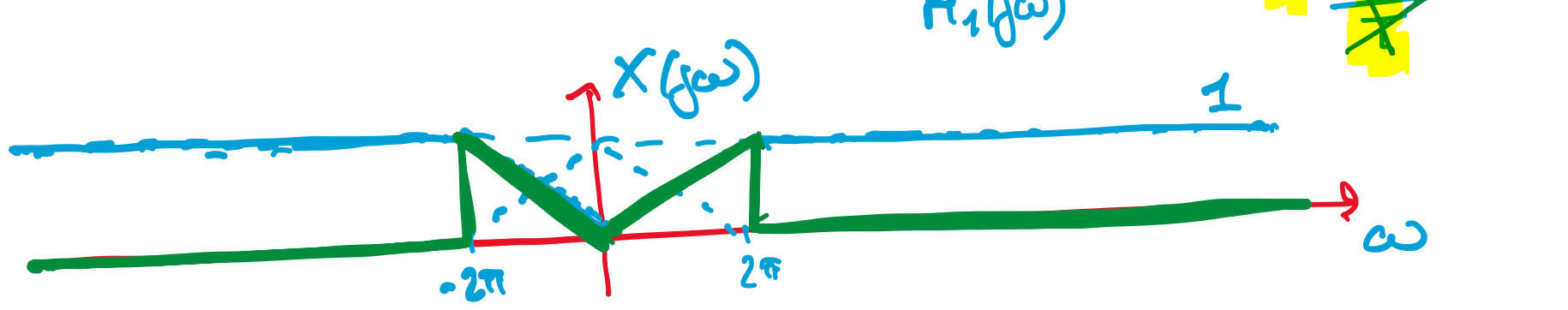
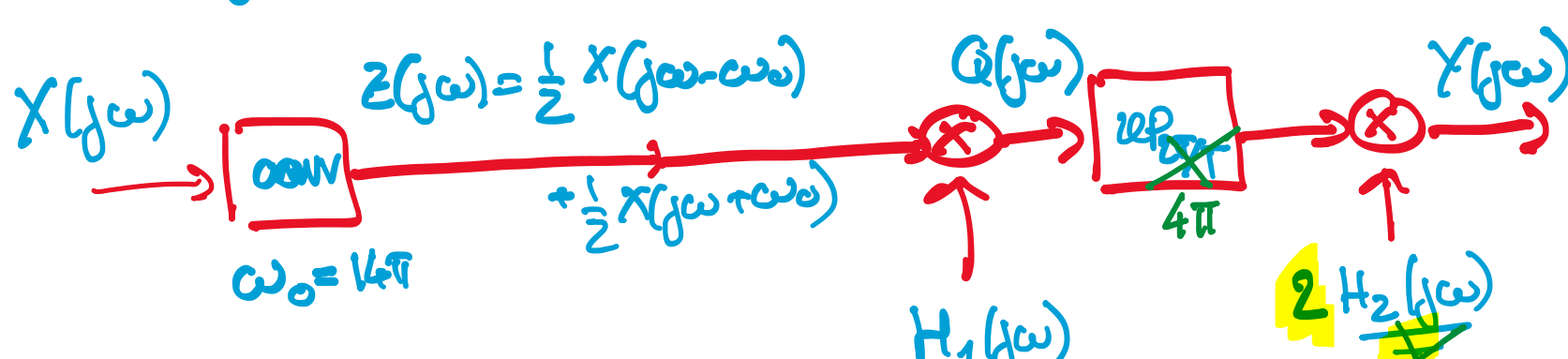


$$X(jw) = \left(1 - \text{triang}\left(\frac{w}{2\pi}\right)\right) \cdot \text{rect}\left(\frac{w}{4\pi}\right)$$

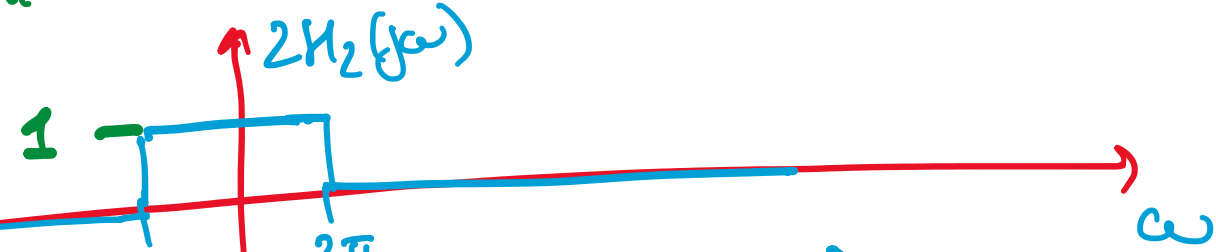
$$H_1(jw) = 2 - 2\text{rect}\left(\frac{w}{28\pi}\right)$$

$$H_2(jw) = \frac{1}{2} \text{rect}\left(\frac{w}{4\pi}\right)$$

$$y(t) = ?$$



$$\text{rep}_{4\pi} Q(jw) = \text{rep}_{4\pi} \text{triang}\left(\frac{w}{2\pi}\right)$$

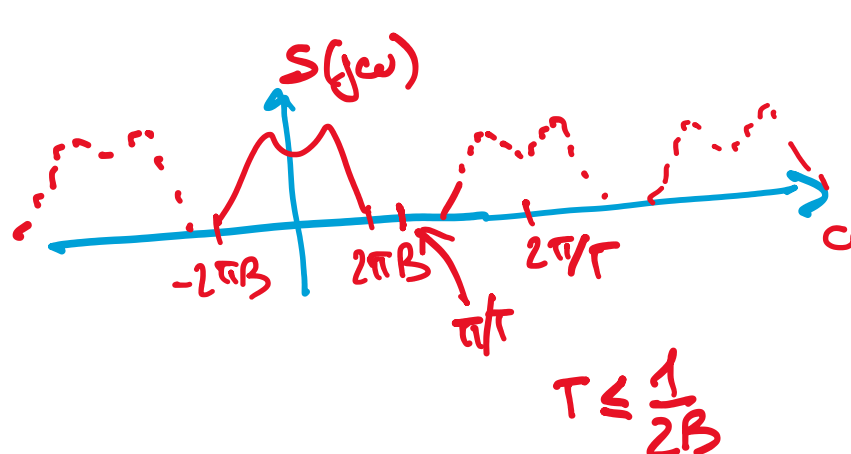
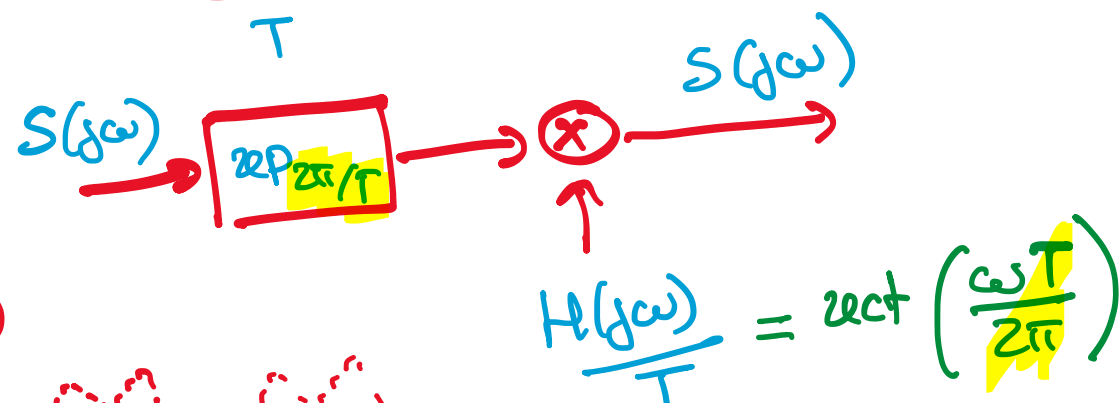
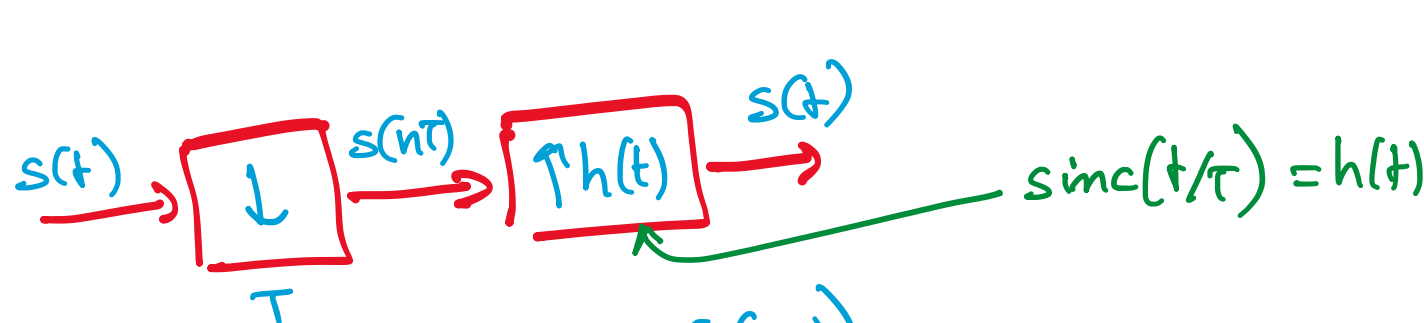


$$Y(jw) = \text{triang}\left(\frac{w}{2\pi}\right)$$

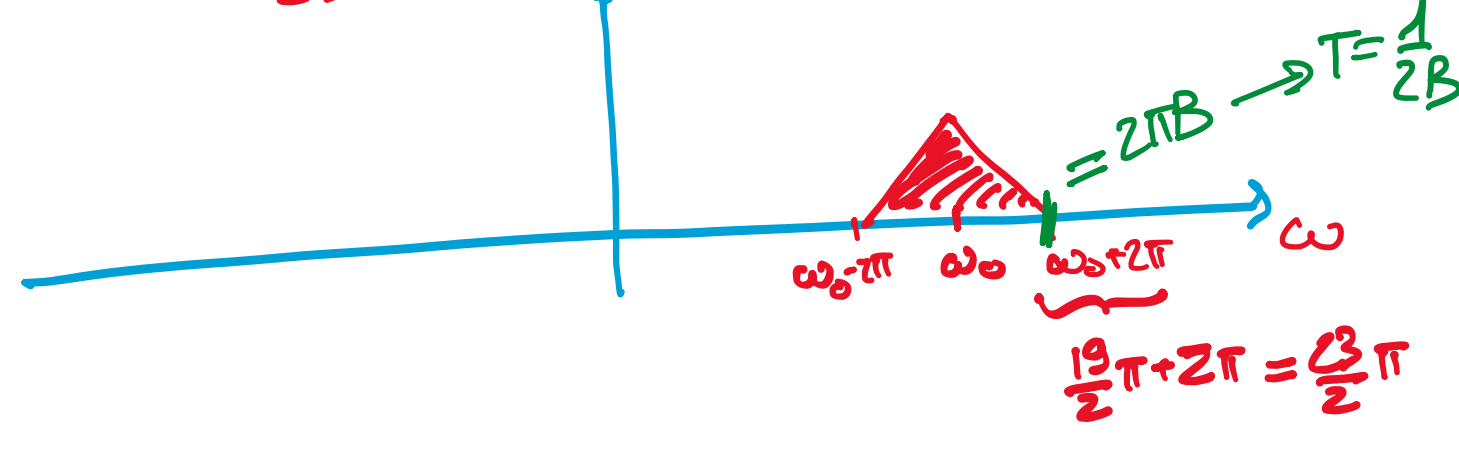
$$y(t) = \text{sinc}^2(t)$$

ES2

SOLUZIONI DI CAMPIONAMENTO-INTERPOLAZIONE PER  $S(t) = \text{sinc}^2(t) e^{j\frac{19}{2}\pi t}$   $\omega_0 = \frac{19}{2}\pi$

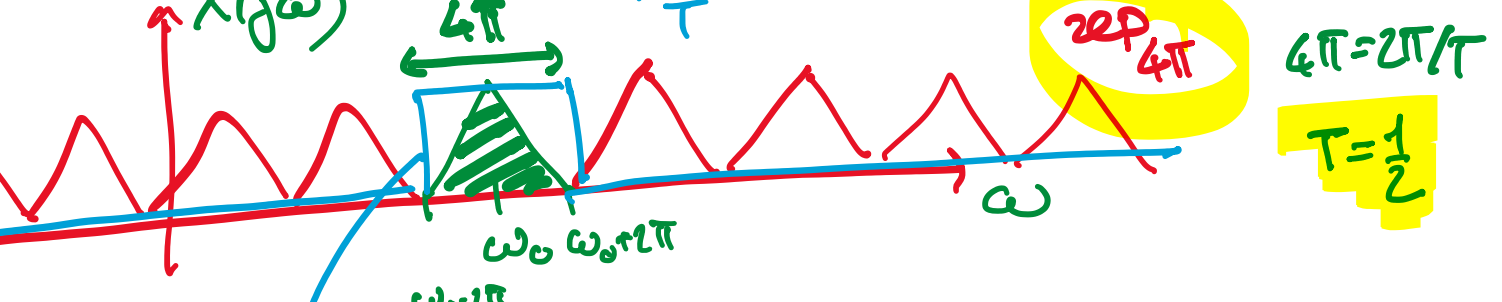
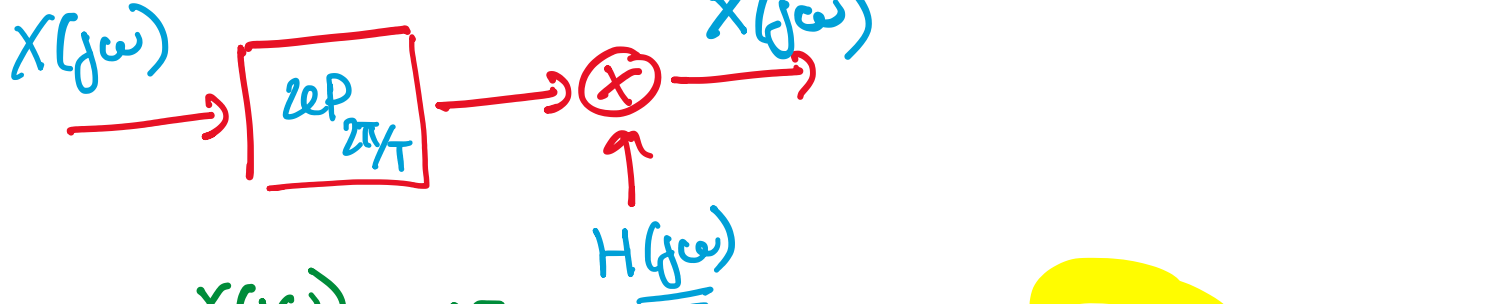
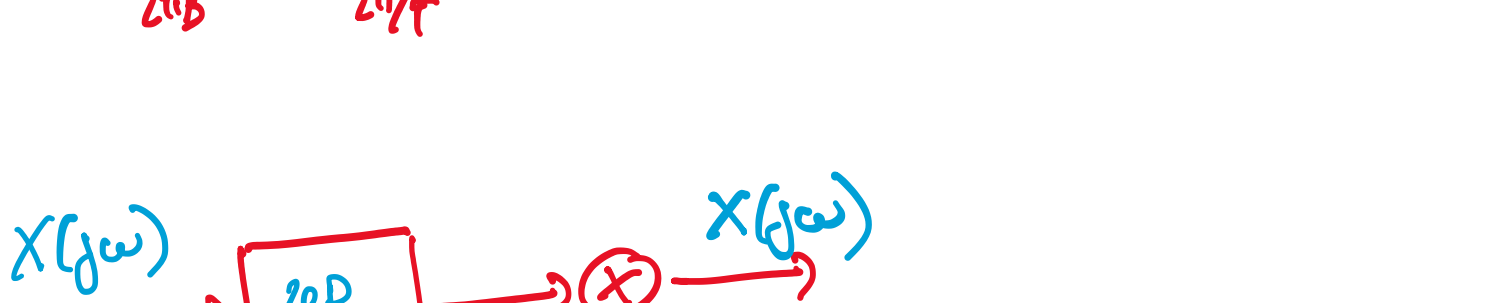


$$S(jw) = \text{triang}\left(\frac{w - \omega_0}{2\pi}\right)$$



$$2\pi B = \frac{23}{2}\pi$$

$$T = \frac{1}{2B} = \frac{1}{\frac{23}{4} \cdot 2} = \frac{2}{23}$$



$$\frac{H(jw)}{T} = 2H(jw) = \text{rect}\left(\frac{w - \omega_0}{4\pi}\right)$$

$$H(jw) = \frac{1}{2} \text{rect}\left(\frac{w - \omega_0}{2 \cdot 2\pi}\right)$$

$$h(t) = \text{sinc}\left(\frac{t}{T}\right) e^{j\omega_0 t} \quad T = 1/2$$