

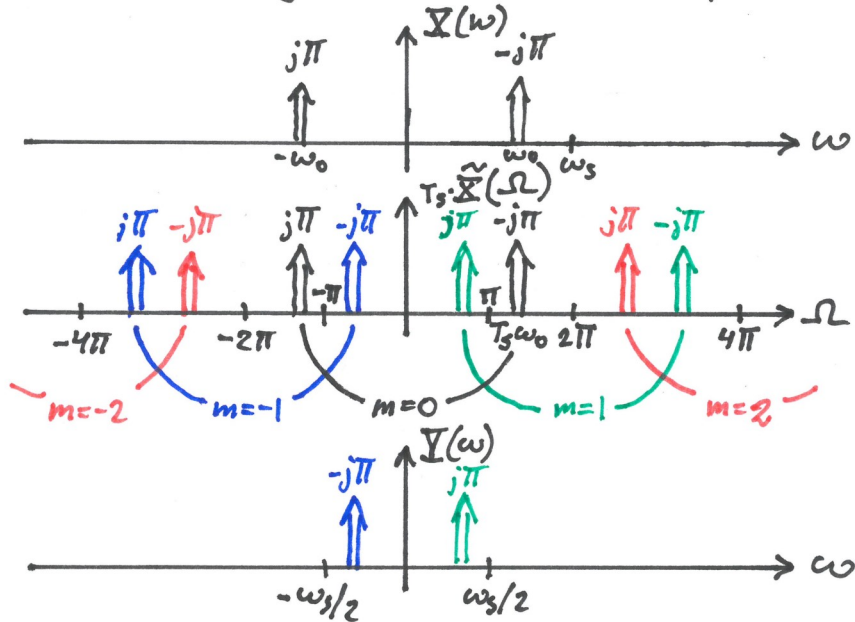
TSKS21 Facit till lektion 7

1(2)

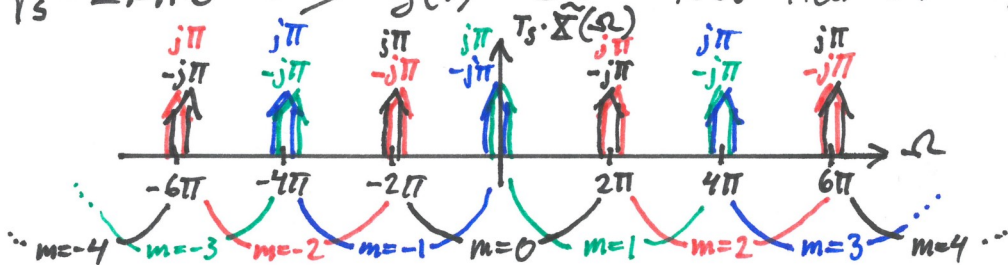
7.1 a) $y(t) = \cos(100\pi t)$

b) $y(t) = \cos(20\pi t)$

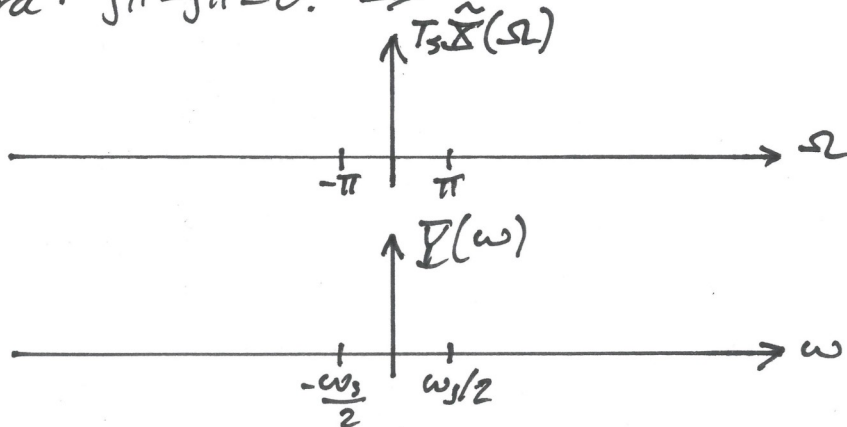
7.2 $f_s = 3 \text{ kHz} \Rightarrow y(t) = -\sin(2\pi 10^3 t)$



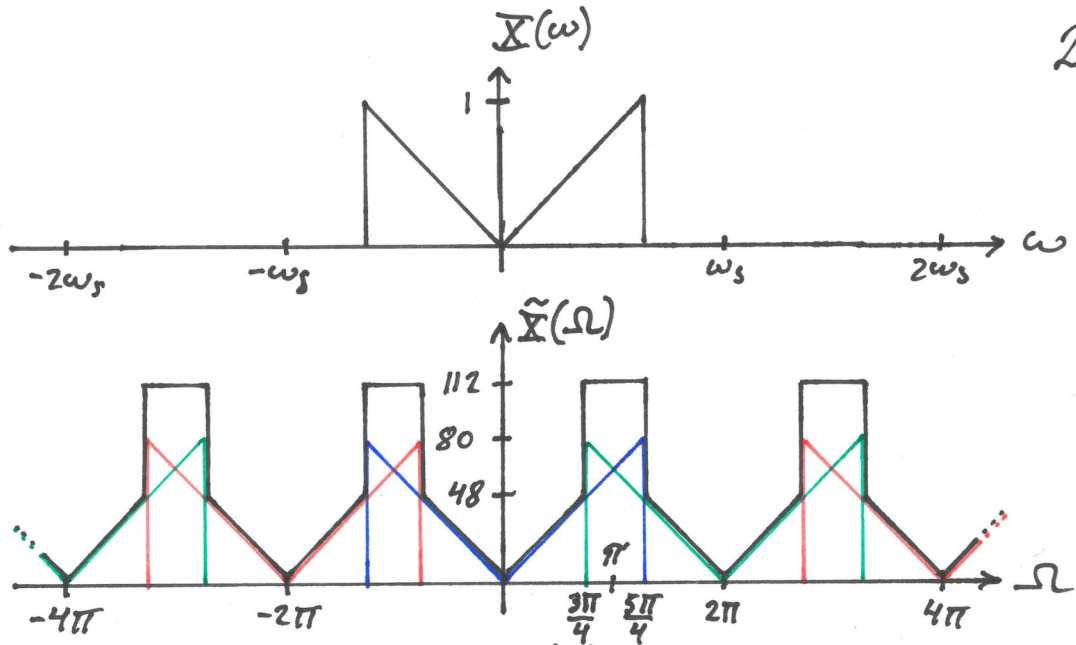
$f_s = 2 \text{ kHz} \Rightarrow y(t) = 0$. Not: Här är $\omega_s = \omega_0$



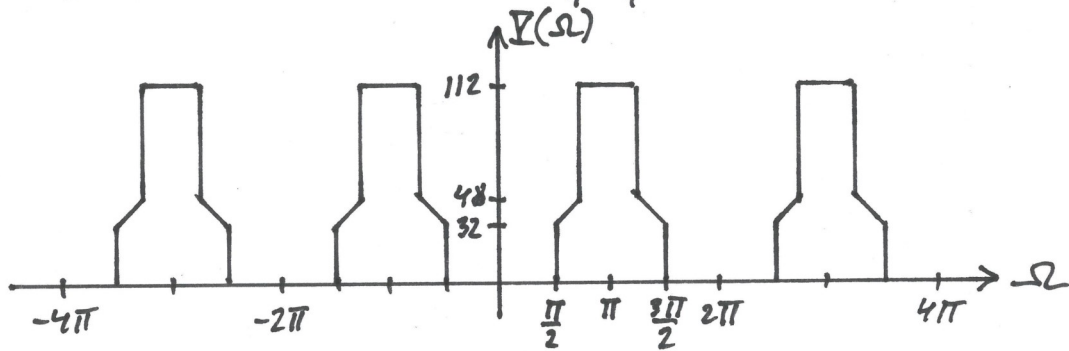
Notera: $j\pi - j\pi = 0 \Rightarrow$



7.5a)

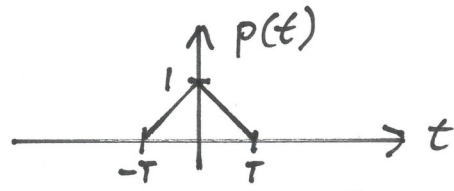


b)



7.7 $H_a(\frac{\Omega}{T}) = H_b(-\Omega)$

7.8 $P(t) = \begin{cases} 1 - \frac{|t|}{T}, & |t| < T \\ 0, & \text{f.ö.} \end{cases}$



7.10 $E_e = \frac{1}{\pi} \int_{\omega_s/2}^{\infty} |X(\omega)|^2 d\omega + \frac{1}{\pi} \int_0^{\omega_s/2} \left| \sum_{m \neq 0} X(\omega - m \cdot \omega_s) \right|^2 d\omega$

7.14 $f_{s, \min} = 120 \text{ Hz}$

7.21 De två tonerna byter plats.