

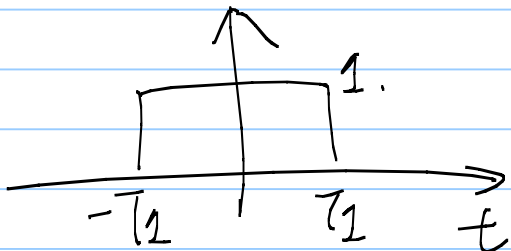
HW9Q85 Problem 4.18

Note Title

10/26/2014

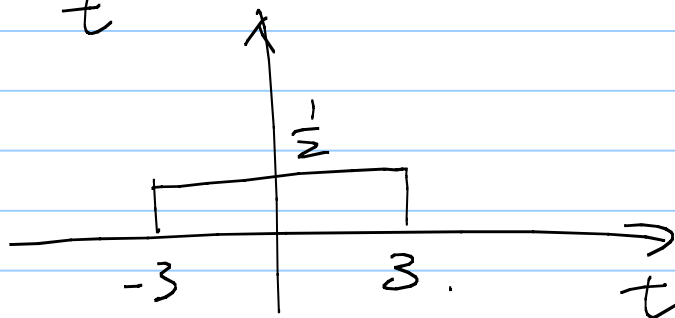
Q: $H(j\omega) = \frac{\sin^2(3\omega) \cos(\omega)}{\omega^2}$. Find $h(t)$.

Ans. Q1: $H_1(j\omega) = \frac{\sin(3\omega)}{\omega}$ Q = $h_1(t)$?



$$\frac{2\sin(\omega T_1)}{\omega}$$

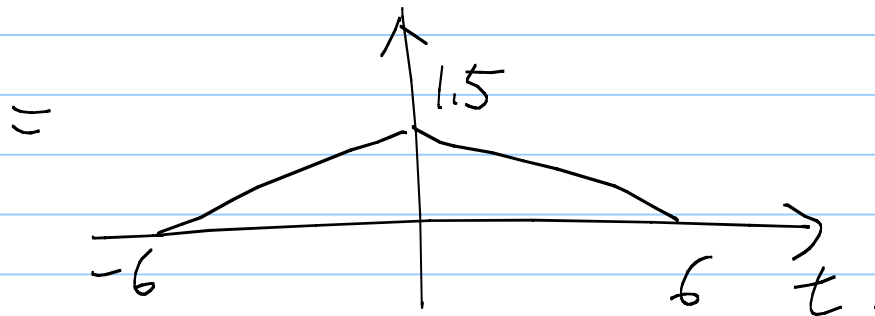
$\Rightarrow h_1(t) =$



Q2: $H_2(j\omega) = \frac{\sin^2(3\omega)}{\omega^2}$ Q = $h_2(t)$?

Ans: $H_2(j\omega) = H_1(j\omega) \cdot H_1(j\omega)$

$\Rightarrow h_2(t) = h_1(t) * h_1(t)$



Q3: $H_3(j\omega) = \frac{\sin^2(3\omega)}{\omega^2} \cdot \frac{1}{2} (e^{j\omega} + e^{-j\omega})$

$h(t)$

