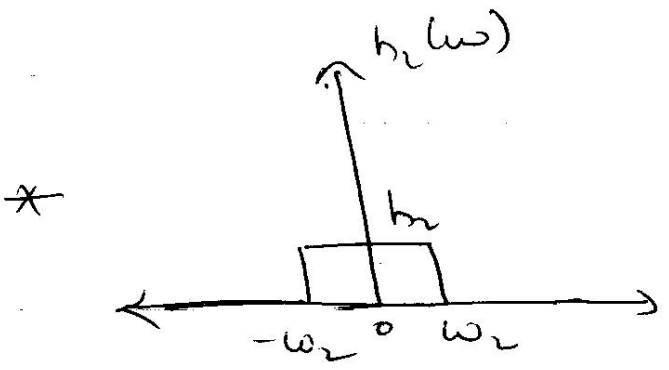
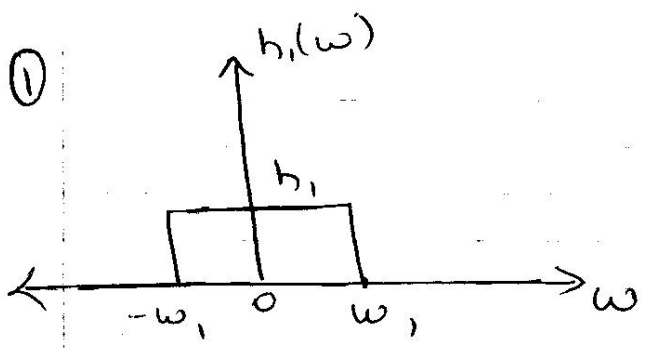
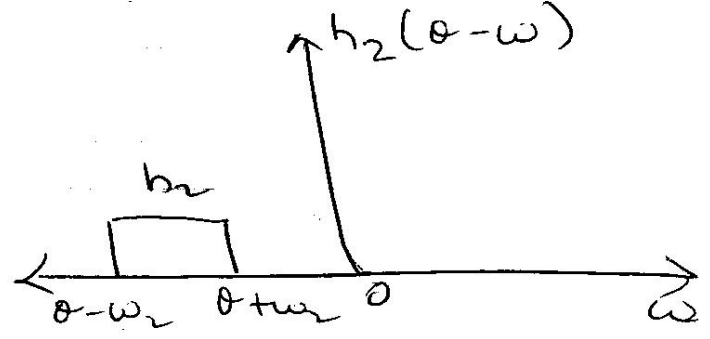
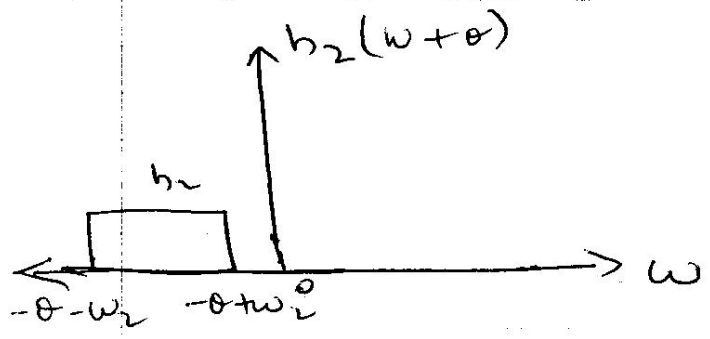


Bonus 6

Kaghu Valluri



lets assume  $\omega_1 > \omega_2$ , If  $\omega_2 > \omega_1$ , just invert the convolution.



①  $\theta + \omega_2 \leq -\omega_1 \Rightarrow \theta < -\omega_1 - \omega_2$   
 $y(\theta) = 0$

②  $\theta + \omega_2 > -\omega_1 \Rightarrow \theta > -\omega_1 - \omega_2$   
 $\& \theta < \omega_2 - \omega_1$

$y(\theta) = \int_{-\omega_1}^{\theta + \omega_2} h_1 h_2 d\tau = h_1 h_2 [\theta + \omega_1, \omega_2]$

③  $\theta > \omega_2 - \omega_1 \& \theta < \omega_1 - \omega_2$

$y(\theta) = \int_{\theta - \omega_1}^{\theta + \omega_1} h_1 h_2 d\tau = h_1 h_2 (2\omega_1)$

④  $\theta > \omega_1 - \omega_2 \& \theta < \omega_1 + \omega_2$

$y(\theta) = \int_{\theta - \omega_2}^{\omega_1} h_1 h_2 d\tau = h_1 h_2 [\omega_1, \omega_2 - \theta]$