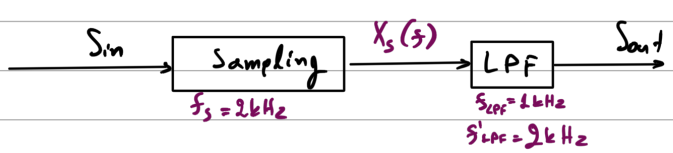
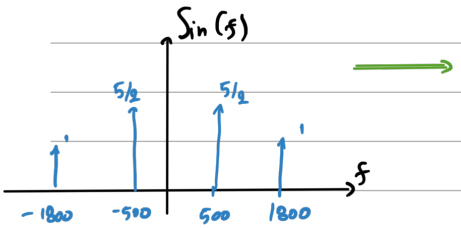
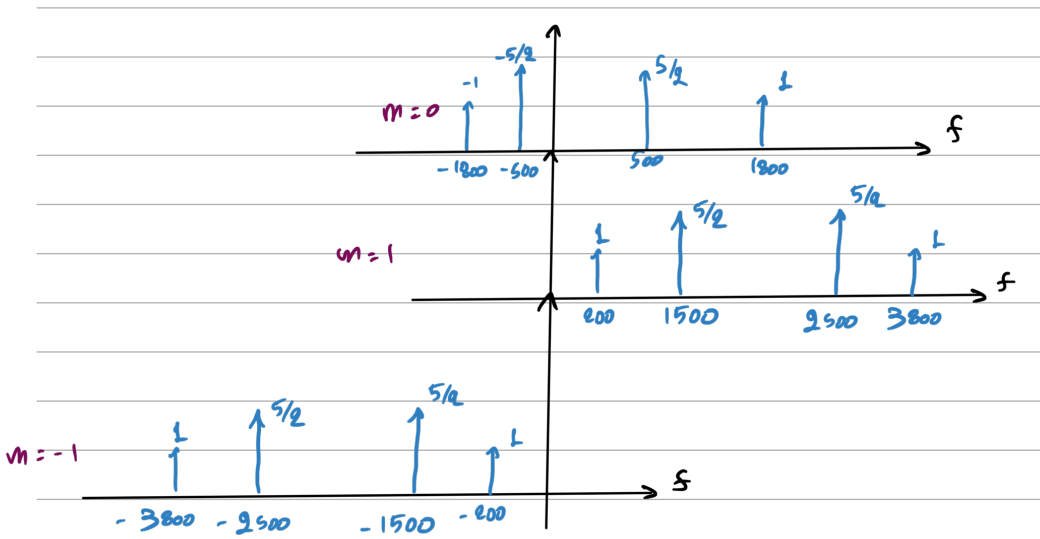
Έστω σήμα: $S_{in} = 5\cos(1000\pi t) + 2\cos(3600\pi t)$ (2·500, 2·1800) που:

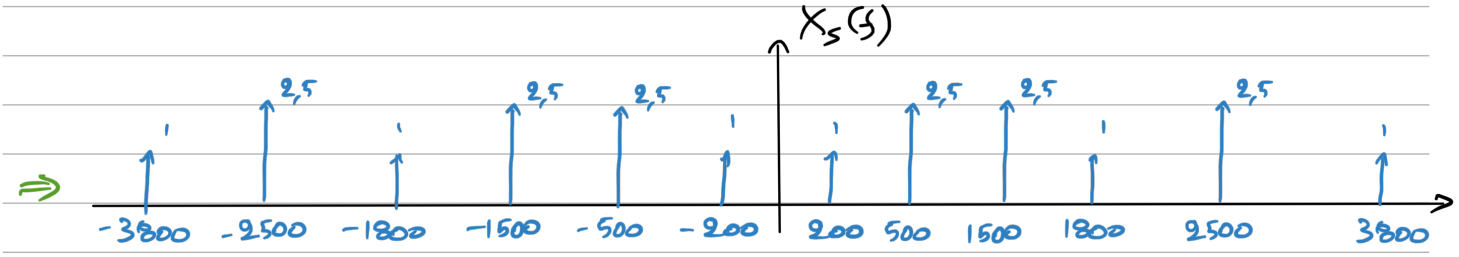


S_{out}, S'_{out}, f_{nyq} ?

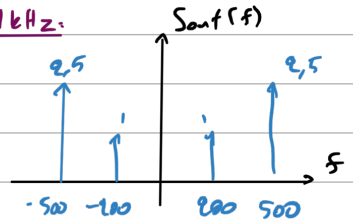


$X_s(f) = f_s \sum_{m=-\infty}^{\infty} S_{in}(f - m \cdot f_s)$ → κρατάμε τα 0, 1, -1 (τα υπόλοιπα θα φύγουν από το LPF)

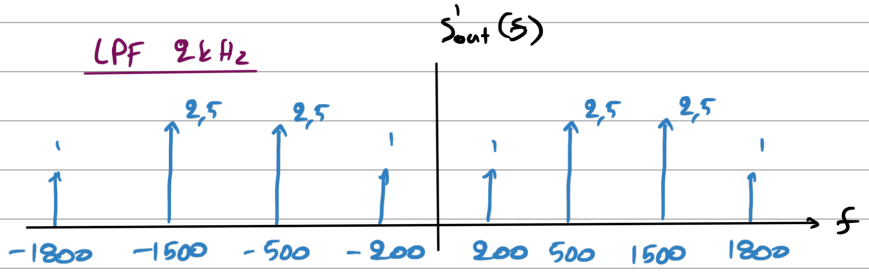




LPF 1kHz:



LPF 2kHz



$S_{out}(t) = 5\cos(1000\pi t) + 2\cos(400\pi t)$

$S'_{out}(t) = 5\cos(1000\pi t) + 2\cos(400\pi t) + 5\cos(3000\pi t) + 2\cos(3600\pi t)$

$f_{nyq} = 3600\ Hz$