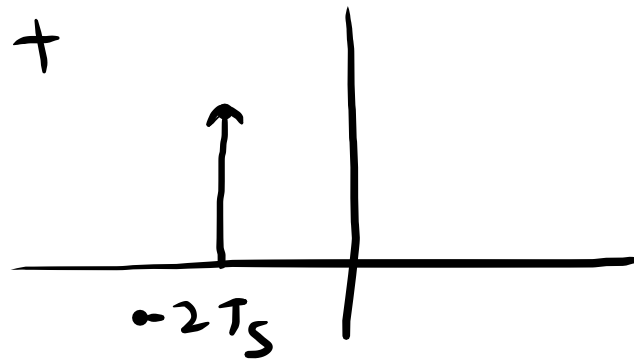
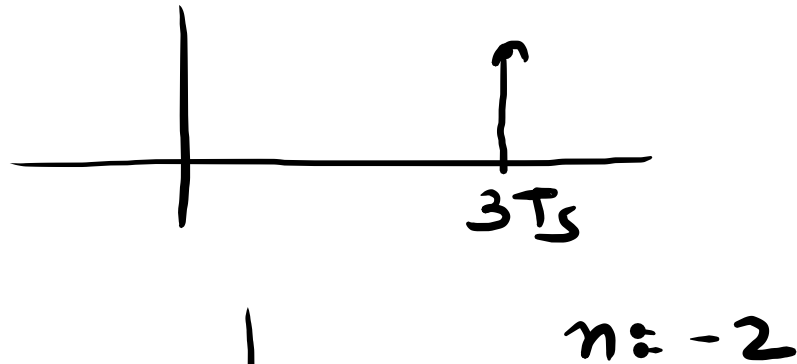
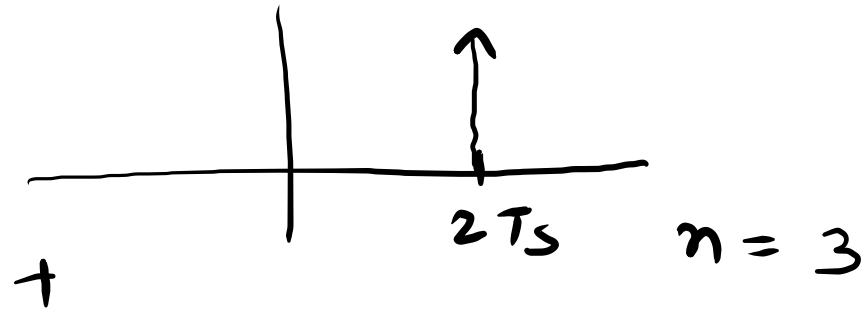
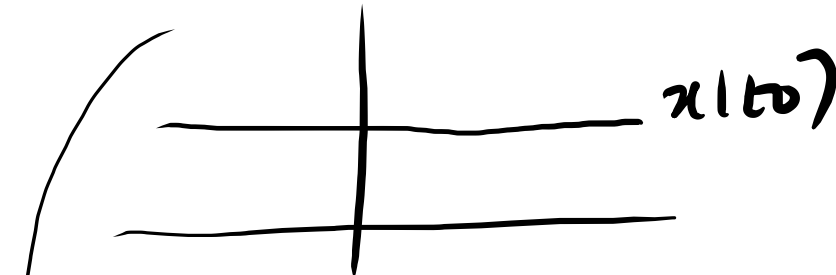


Lec - 6 - DC

$\delta(t - nT_s)$ for $n=2$



$$x(t)\delta(t - t_0) = x(t_0)$$



$$\delta(t - t_0) = 0, t \neq t_0$$

$$x(t_0)\delta(t - t_0)$$

$$x(t) * \delta(t - t_0) \stackrel{?}{=} x(t - t_0)$$

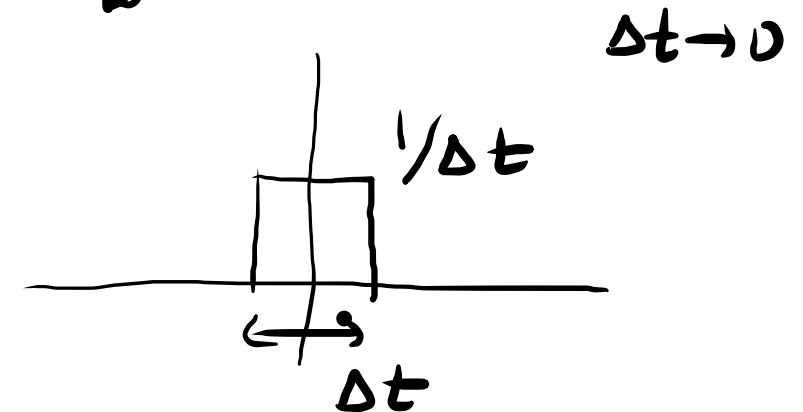
$$x(f) * \sum_m \delta(f - m f_s) = \sum_m x(f) * \delta(f - m f_s) \stackrel{?}{=} x(t_0)$$

$$\delta(t) =$$

A graph showing a vertical arrow at $t = 0$ on a horizontal axis labeled t .

$$\delta(t) = 0, t \neq 0$$

$$\int_{-\infty}^{\infty} \delta(t) dt = 1$$



$$g_s(t) = \sum_{n=-\infty}^{\infty} g(nT_s) \delta(t - nT_s)$$

$$g_s(2T_s) \stackrel{?}{=} g(2T_s)$$

$$g_s(2T_s) = \sum_{n=-\infty}^{\infty} g(nT_s) \delta(2T_s - nT_s)$$

$$g(2T_s) \delta(\underbrace{2T_s - 2T_s}_0)$$

$$\dots g(-T_s) \delta(2T_s + T_s) + g(0) \delta(2T_s - 0) + g(T_s) \delta(2T_s - T_s) + \dots$$

$$= \dots g(-T_s) \delta(3T_s) + g(0) \delta(2T_s) + g(T_s) \delta(T_s) + \dots$$

$$g(2T_s) \delta(0)$$

