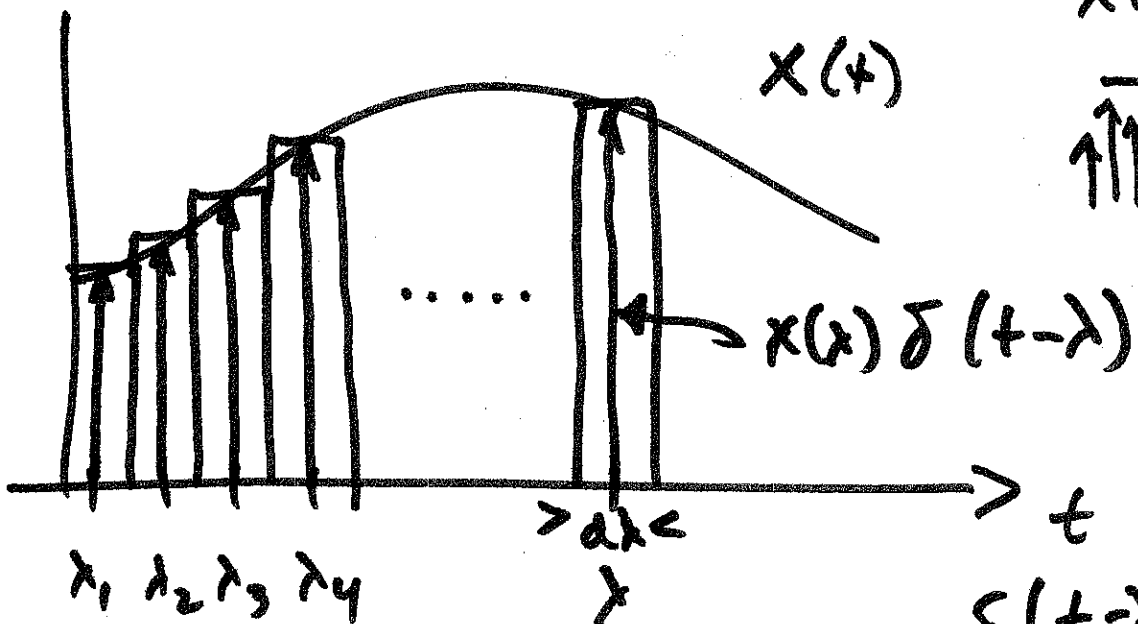
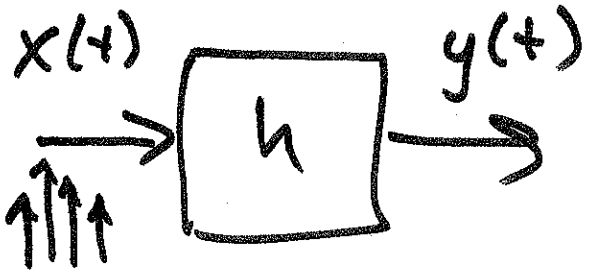
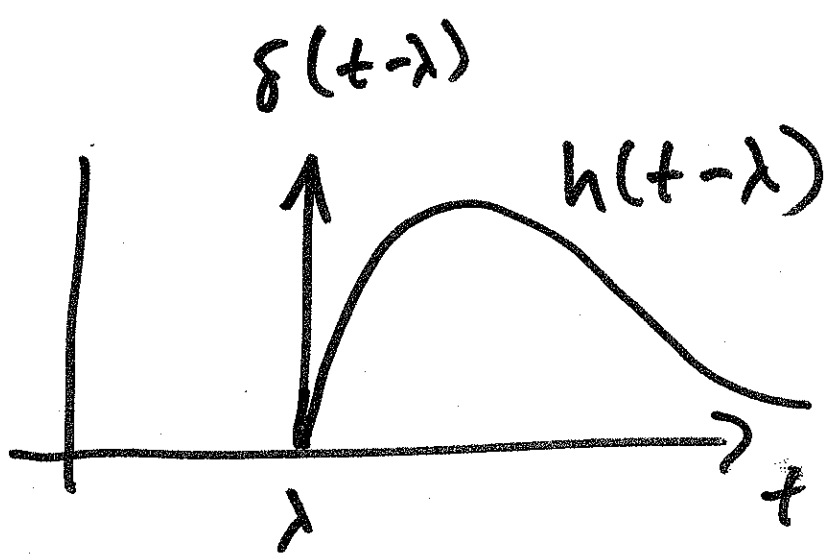
Sifting ☆

$$x(t) = \int_{-\infty}^{\infty} x(\lambda)\,\delta(t-\lambda)\,d\lambda$$

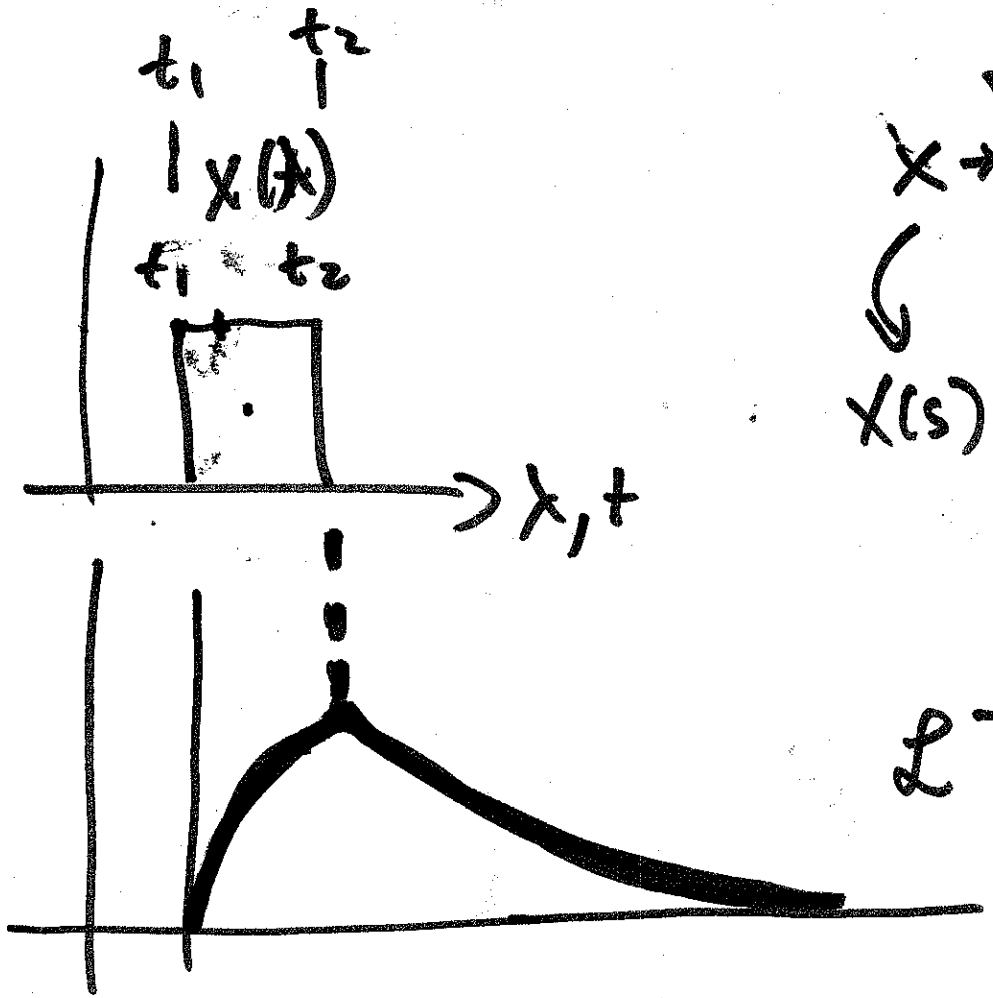






$$y(t) = \int_{-\infty}^{\infty} x(\lambda)\, h(t-\lambda)\, d\lambda$$

$$= x(t) * h(t)$$ "Convolution"



$x * h(t) = y(t)$

$X(s) \cdot H(s) = Y(s)$

↑ multiplication

$\mathcal{L}^{-1}(Y(s)) = y(t)$