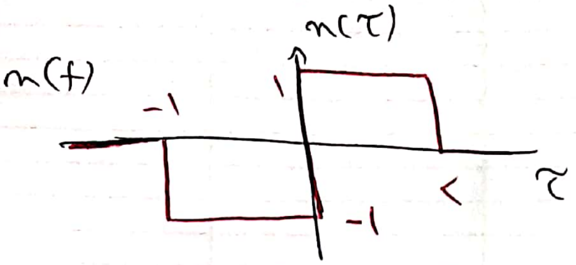
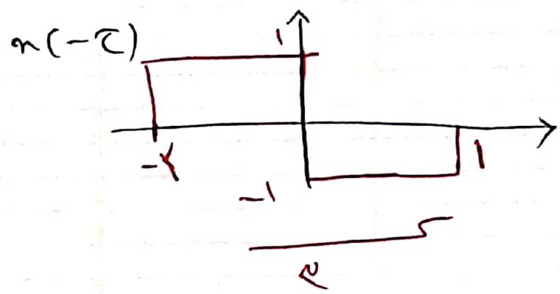
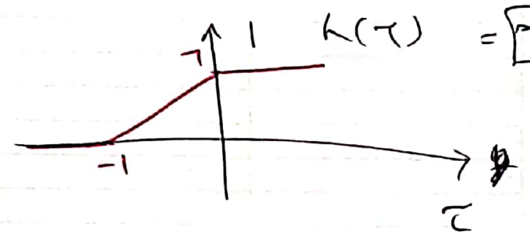
طبق فرمول $y(t) = \int_{-\infty}^{+\infty} x(\tau)\, h(t-\tau)\, d\tau = x(t) * h(t)$

(انتگرال کانولوشن)

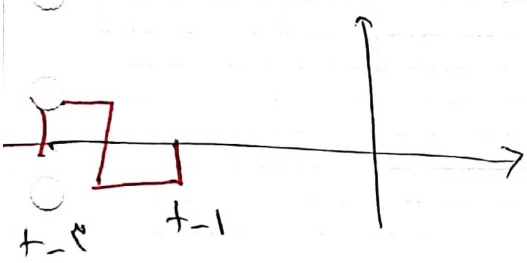
تابع $x(t)$ را شیفت می‌رسم







$h(\tau) = [\tau + 1]$



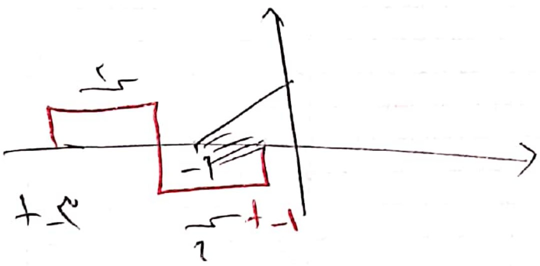
$x(t-\tau)$

$t<0$ هم‌پوشانی ندارد ← $y(t) = 0$

$t-1<-1 \rightarrow t<0$

$t-1>-1$ و $t \le 1$ ← $t-1 \le 0$

$t>0$ در بازه‌ی -1 تا $t-1$



$\int_{-1}^{t-1} h(\tau)\, x(t-\tau)\, d\tau =$

$\int_{-1}^{t-1} (\tau+1) \cdot -1\, d\tau \rightarrow$

$\frac{1}{2}\tau^2 + \tau \Big|_{-1}^{t-1}$

$\frac{1}{2}(t-1)^2 + (t-1) - \left[\frac{1}{2} - 1\right] =$ $\quad -\frac{1}{2}$

$$\boxed{\frac{1}{2}(t-1)^2 + (t-1) + \frac{1}{2}}$$

در بازه‌ی -1 تا $t-1$ که

$t>1$ ← $t-1>0$