5.3 (b)

Sonntag, 14. November 2021 17:05

(i) $$\frac{1}{3}\left(\tilde{y}_{n-1} + \tilde{y}_n + \tilde{y}_{n+1}\right)$$

$n=1: \frac{1}{3}(\tilde{y}_0 + \tilde{y}_1 + \tilde{y}_2)$

$n=2: \frac{1}{3}(\tilde{y}_1 + \tilde{y}_2 + \tilde{y}_3)$ $\Rightarrow$

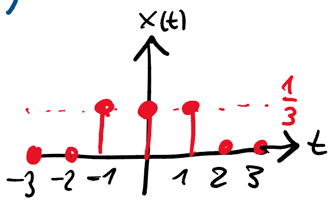
$n=3: \frac{1}{3}(\tilde{y}_2 + \tilde{y}_3 + \tilde{y}_4)$

$n=1: \frac{1}{3}(y_3 + y_1 + y_2)$

$n=2: \frac{1}{3}(y_1 + y_2 + y_3)$

$n=3: \frac{1}{3}(y_2 + y_3 + y_1)$

$x(t) := \frac{1}{3} \cdot \mathbb{1}_{\{-1,0,1\}}(t)$



$, t \in \mathbb{Z}$

(ii) The zero padding must be infinite.