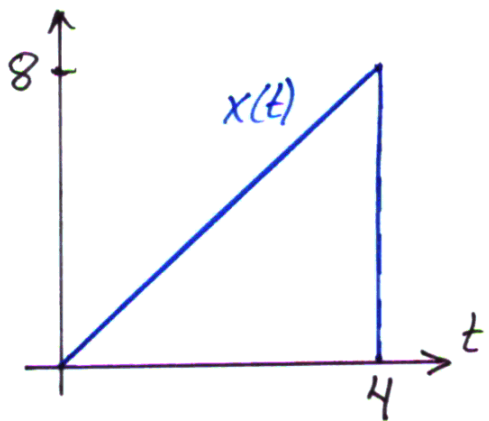
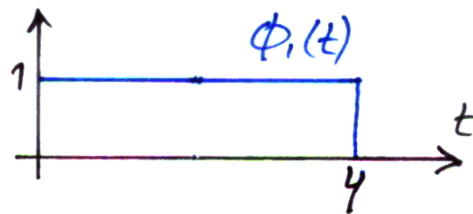
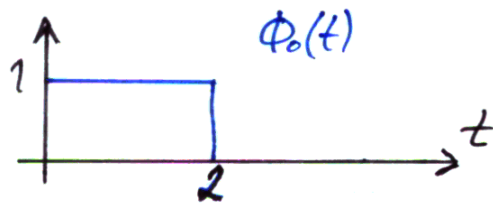


Exempel, basfunktionsbeskrivning av signal – 2 basfunktioner

(se bokens exempel, sid. 34-35)



$$x(t) = \begin{cases} 2t; & 0 \leq t < 4 \\ 0; & \text{f.ö.} \end{cases}$$



Approximera $x(t)$ med $\hat{x}(t) = \sum_{k=0}^1 c_k \cdot \phi_k(t) = c_0 \cdot \phi_0(t) + c_1 \cdot \phi_1(t)$

$$\left/ \begin{array}{l} \text{Minimera } \int_0^4 |e(t)|^2 dt \\ \text{där } e(t) = x(t) - \hat{x}(t) \end{array} \right/ \Rightarrow \begin{cases} 2c_0 + 2c_1 = 4 \\ 2c_0 + 4c_1 = 16 \end{cases} \Rightarrow \begin{cases} c_0 = -4 \\ c_1 = 6 \end{cases}$$

$\Rightarrow$ Bästa approximationen till $x(t)$ är $\hat{x}(t) = -4\phi_0(t) + 6\phi_1(t)$

