

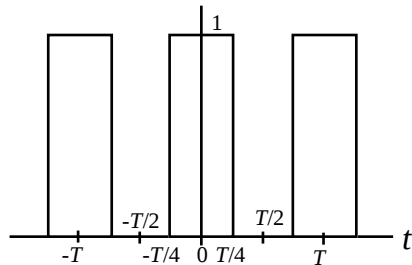
フーリエ級数展開

山崎 浩一

矩形波

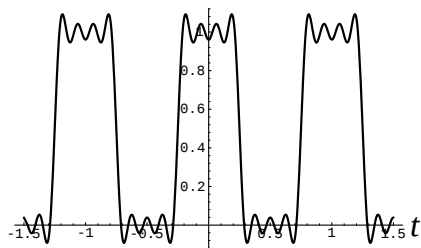
$$f(t) = c_0 + \sum_{n=1}^{\infty} (a_n \cos(n\omega_0 t) + b_n \sin(n\omega_0 t))$$

のこぎり波

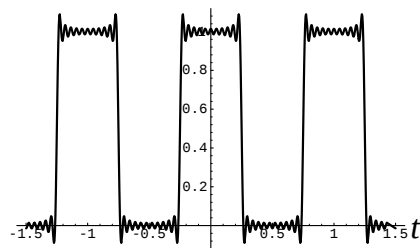


ただし、 $T = 2$ 。

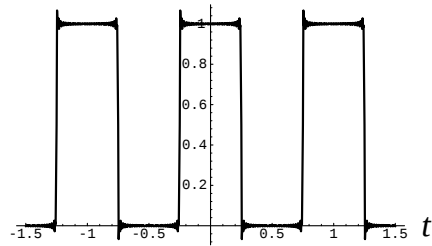
$$(a-1) f(t) = \begin{cases} 1, & |t| \leq T/4 \\ 0, & T/4 < |t| < T/2 \end{cases}, \quad f(t) = f(t+T)$$



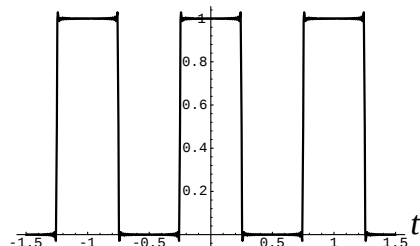
(a-2) $n=7$



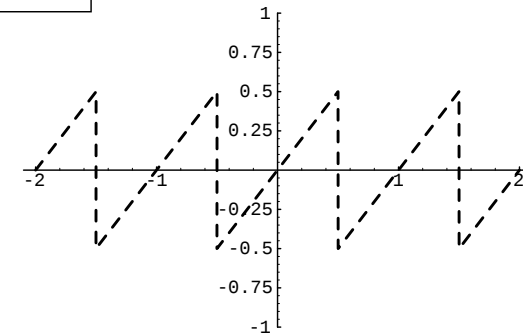
(a-3) $n=7$



(a-4) $n=7$

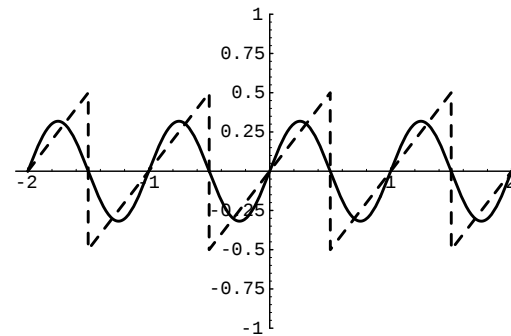


(a-5) $n=7$

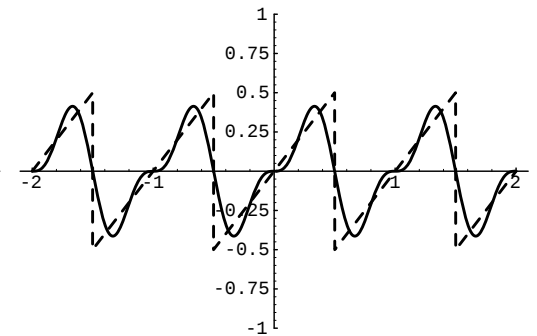


ただし、 $T = 1$ 。

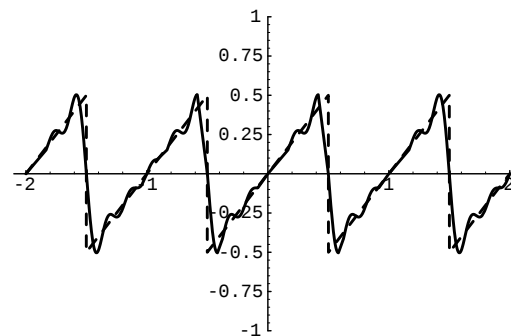
$$(b-1) f(t) = t, \quad |t| \leq T/2, \quad f(t) = f(t+T)$$



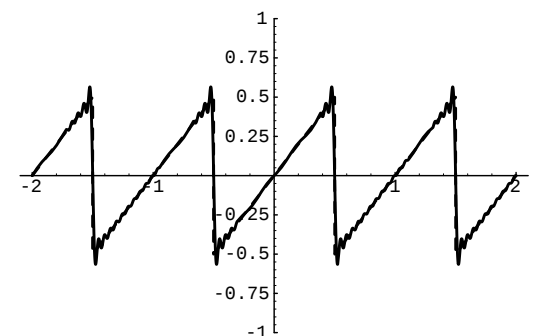
(b-2) $n=1$



(b-3) $n=2$



(b-4) $n=5$



(b-5) $n=10$