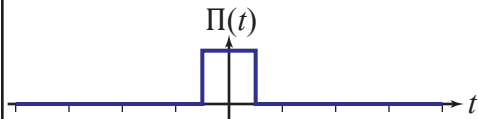


Name(s)

Defining Equation

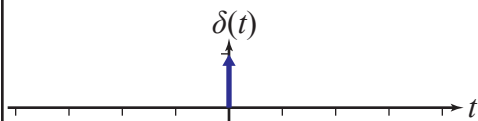
step

$$u(t) = \begin{cases} 0 & t < 0 \\ 1 & t \geq 0 \end{cases}$$



rectangle, rect, r

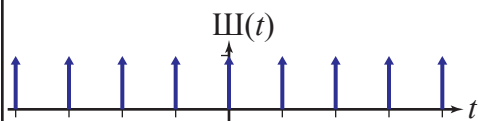
$$\text{rect}(t) = \Pi(t) = \begin{cases} 1 & |t| < \frac{1}{2} \\ \frac{1}{2} & |t| = \frac{1}{2} \\ 0 & |t| > \frac{1}{2} \end{cases}$$



impulse, delta

$$\delta(t) = \lim_{T \rightarrow 0} \left(\frac{1}{T} \right) \Pi\left(\frac{t}{T} \right)$$

$$u(t) = \int_{-\infty}^t \delta(t) dt$$



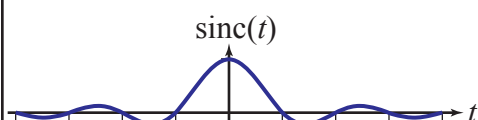
shah, comb, impulse train

$$\text{III}(t) = \sum_{n=-\infty}^{\infty} \delta(t - n)$$



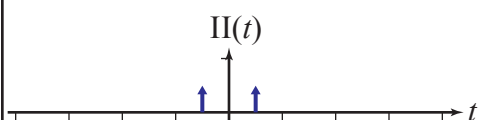
Gaussian

$$g(t) = e^{-\pi t^2}$$



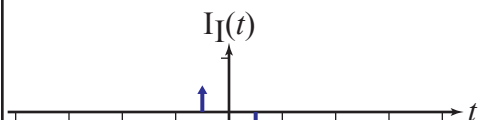
sinc

$$\text{sinc}(t) = \frac{\sin(\pi t)}{\pi t}$$



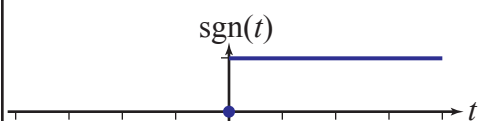
even impulse pair

$$\text{II}(t) = \frac{1}{2} \delta\left(t + \frac{1}{2}\right) + \frac{1}{2} \delta\left(t - \frac{1}{2}\right)$$



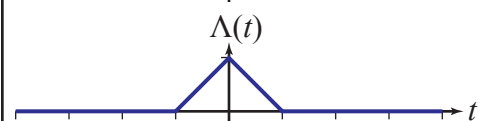
odd impulse pair

$$\text{I}_I(t) = \frac{1}{2} \delta\left(t + \frac{1}{2}\right) - \frac{1}{2} \delta\left(t - \frac{1}{2}\right)$$



sign, sgn

$$\text{sgn}(t) = \begin{cases} -1 & t < 0 \\ 0 & t = 0 \\ 1 & t > 0 \end{cases}$$



triangle

$$\Lambda(t) = \begin{cases} 1 - t & -1 \leq t \leq 0 \\ 1 + t & 0 \leq t \leq 1 \\ 0 & |t| > 1 \end{cases}$$