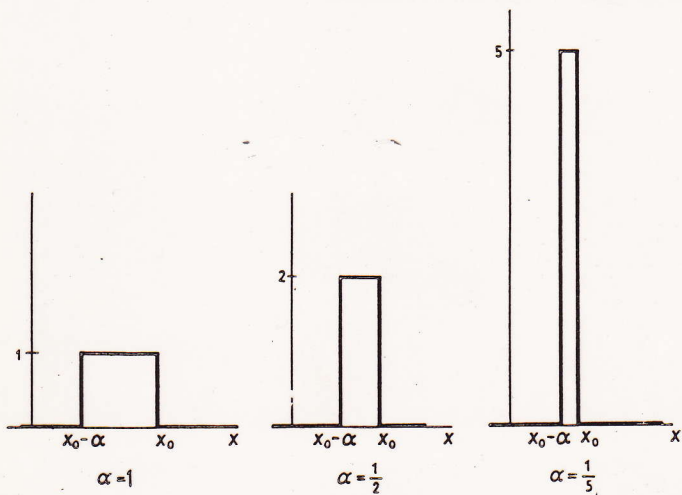


# Diracova $\delta$ - funkce

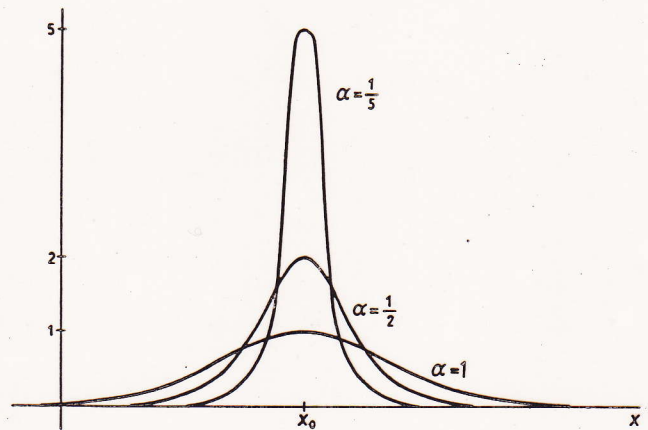
•  $\delta = 0$  všude kromě  $x=0$

•  $\int_{-\infty}^{+\infty} \delta(x) dx = 1$



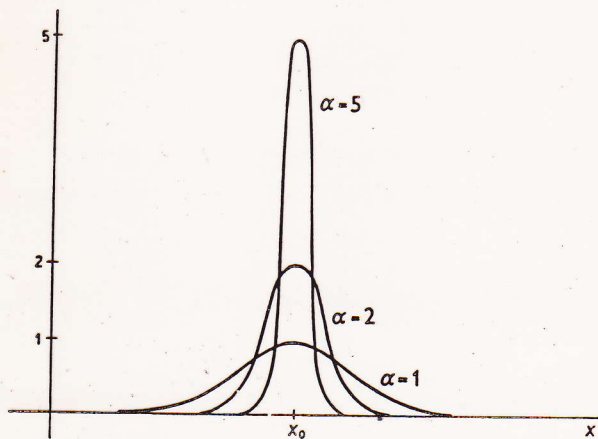
$$\delta_d(x-x_0) = \begin{cases} 0 & x \notin [x_0-d, x_0] \\ 1/d & x \in [x_0-d, x_0] \end{cases}$$

$d \rightarrow 0$



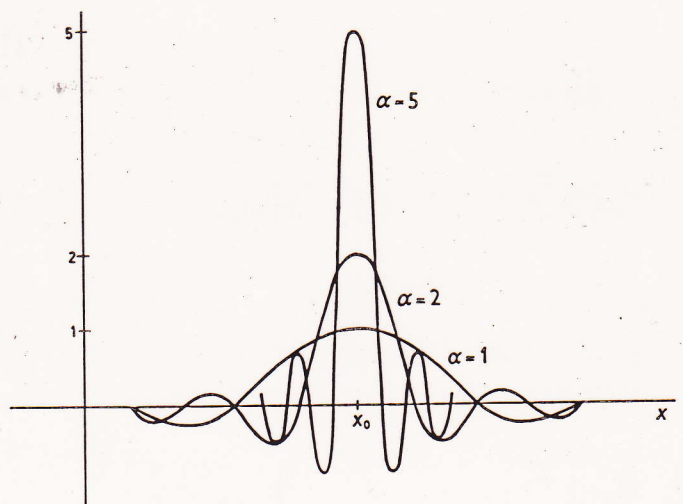
$$\delta_d(x-x_0) = \frac{1}{\pi} \frac{d}{(x-x_0)^2 + d^2}$$

$d \rightarrow 0$



$$\delta_d(x-x_0) = \frac{d}{\sqrt{\pi}} e^{-d^2(x-x_0)^2}$$

$d \rightarrow \infty$



$$\delta_d(x-x_0) = \frac{\sin d(x-x_0)}{\pi(x-x_0)}$$

$$= \frac{1}{2\pi} \int_{-d}^{+d} e^{iq(x-x_0)} dq$$

$d \rightarrow \infty$