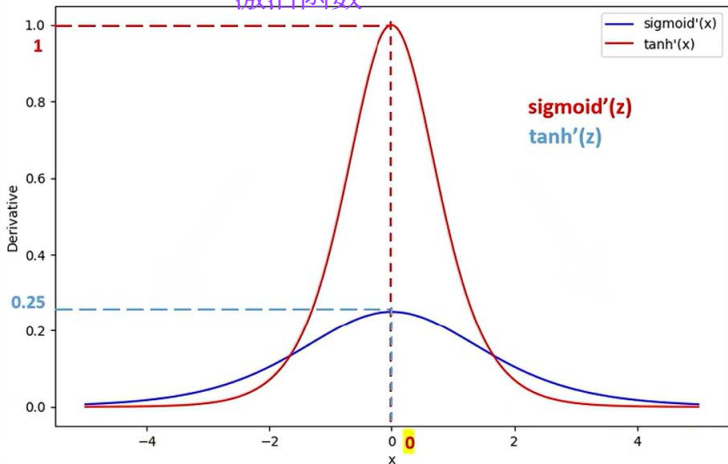
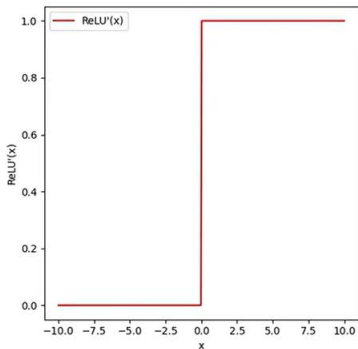
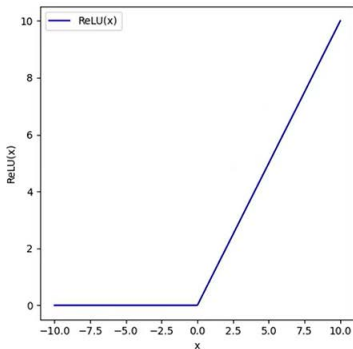


激活函数



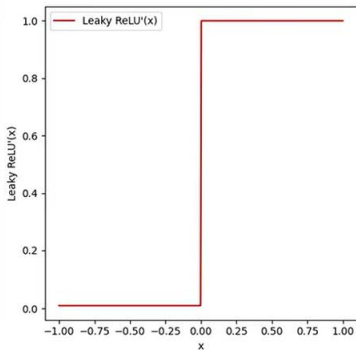
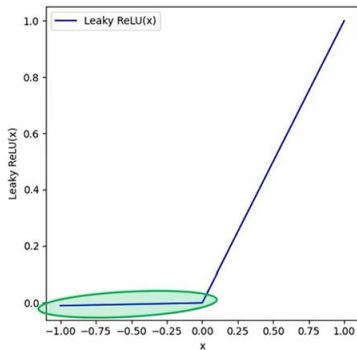
$$\begin{cases} \text{sigmoid}(z) = \frac{1}{1 + e^{-z}} \\ \text{sigmoid}'(z) = \frac{e^{-z}}{(1 + e^{-z})^2} \end{cases} \quad \begin{cases} \text{tanh}(z) = \frac{e^z - e^{-z}}{e^z + e^{-z}} \\ \text{tanh}'(z) = 1 - \text{tanh}^2(z) \end{cases}$$



$$\text{ReLU}(z) = \begin{cases} z & \text{if } z > 0 \\ 0 & \text{if } z \leq 0 \end{cases}$$

$$\text{ReLU}'(z) = \begin{cases} 1 & \text{if } z > 0 \\ 0 & \text{if } z \leq 0 \end{cases}$$

($z=0$ 处不可导, 工程上约定赋值)



$$\text{Leaky ReLU}(z) = \begin{cases} z & \text{if } z > 0 \\ 0.01 * z & \text{if } z \leq 0 \end{cases}$$

$$\text{Leaky ReLU}'(z) = \begin{cases} 1 & \text{if } z > 0 \\ 0.01 & \text{if } z \leq 0 \end{cases}$$

(z=0处不可导，工程上约定赋值)