

Derivative of common functions

$$1. \frac{d x^n}{d x} = n \cdot x^{n-1} ; n \neq 0, n: \text{rational number}$$

$$2. \frac{d(\log x)}{d x} = 1/x$$

$$3. \frac{d(e^x)}{d x} = e^x$$

$$4. \frac{d|x|}{d x} = \begin{cases} 1 & \text{if } x > 0 \\ \text{ND} & \text{if } x = 0 \\ -1 & \text{if } x < 0 \end{cases}$$