

DERIVATA DELLA POTENZA CON ESPONENTE NATURALE.

$$D \left[(f(x))^n \right] = n \cdot f(x)^{n-1} \cdot f'(x)$$

$$n=3 \quad \begin{matrix} F(x) \\ y = f(x) \left(\begin{matrix} f(x) \\ f(x) \end{matrix} \right) \end{matrix}$$

$$\begin{aligned} y' &= f'(x) (f(x))^2 + f(x) D(f^2(x)) = \\ &= f'(x) (f(x))^2 + f(x) \left[f'(x) f(x) + f(x) f'(x) \right] = \\ &= f'(x) (f(x))^2 + f(x) \left[2 f(x) f'(x) \right] = \\ &= f'(x) (f(x))^2 + 2 (f(x))^2 f'(x) = \\ &= 3 f'(x) (f(x))^2 \end{aligned}$$