

## ESERCIZI SUL CALCOLO DI DERIVATE

$$f(x) = \sin^5 x \quad \Rightarrow \quad f'(x) = 5\sin^4 x \cos x$$

$$f(x) = \cos^5 x \quad \Rightarrow \quad f'(x) = -5\cos^4 x \sin x$$

$$f(x) = \sin(x^2) \quad \Rightarrow \quad f'(x) = 2x \cos(x^2)$$

$$f(x) = x^7 + \log x \quad \Rightarrow \quad f'(x) = 7x^6 + \frac{1}{x}$$

$$f(x) = x^3 \sin x \quad \Rightarrow \quad f'(x) = 3x^2 \sin x + x^3 \cos x$$

$$f(x) = \frac{e^x}{x} \quad \Rightarrow \quad f'(x) = \frac{e^x(x-1)}{x^2}$$

$$f(x) = \pi^5 \quad \Rightarrow \quad f'(x) = 0$$

$$f(x) = e^{-3x^2} \quad \Rightarrow \quad f'(x) = -6xe^{-3x^2}$$

$$f(x) = \sqrt{\cos x + 2} \quad \Rightarrow \quad f'(x) = \frac{-\sin x}{2\sqrt{\cos x + 2}}$$

$$f(x) = \frac{1}{\log 2 + x^2} \quad \Rightarrow \quad f'(x) = \frac{-2x}{(\log 2 + x^2)^2}$$

$$f(x) = (3x^2 - 2)(x^5 + 4x^3 - 3) \quad \Rightarrow \quad f'(x) = 6x(x^5 + 4x^3 - 3) + (3x^2 - 2)(5x^4 + 12x^2)$$

$$f(x) = \frac{2x - 3}{x^2 + 1} \quad \Rightarrow \quad f'(x) = \frac{-2x^2 + 6x + 2}{(x^2 + 1)^2}$$

$$f(x) = \frac{\sin x}{e^{3x} + x^2} \quad \Rightarrow \quad f'(x) = \frac{(e^{3x} + x^2)\cos x - (3e^{3x} + 2x)\sin x}{(e^{3x} + x^2)^2}$$

$$f(x) = e^x \sin x \quad \Rightarrow \quad f'(x) = e^x \cos x + e^x \sin x$$

$$f(x) = (7x^2 + x^5) \log(2 + e^x) \quad \Rightarrow \quad f'(x) = (14x + 5x^4) \log(2 + e^x) + (7x^2 + x^5) \frac{e^x}{2 + e^x}$$

$$f(x) = \operatorname{arctg}(e^{x^2} + x^2) \quad \Rightarrow \quad f'(x) = \frac{2x(e^{x^2} + 1)}{1 + (e^{x^2} + x^2)^2}$$

$$f(x) = -x^2 + 2x^2 \log x \quad \Rightarrow \quad f'(x) = 4x \log x$$

$$f(x) = e^{\operatorname{arctg} x} \quad \Rightarrow \quad f'(x) = \frac{e^{\operatorname{arctg} x}}{1 + x^2}$$

$$f(x) = \operatorname{arctg}(\log x) \quad \Rightarrow \quad f'(x) = \frac{1}{x(1 + \log^2 x)}$$

$$f(x) = 1 + \log(x + 1) \quad \Rightarrow \quad f'(x) = \frac{1}{x + 1}$$