

ESERCIZI SUL CALCOLO DI DERIVATE

$$f(x) = \frac{\operatorname{sen} x}{e^{3x} + 1} \quad f'(x) = \frac{\cos x}{e^{3x} + 1} - \frac{3e^{3x} \operatorname{sen} x}{(e^{3x} + 1)^2}$$

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

$$f(x) = \operatorname{arctg}(e^{7x} + x) \quad f'(x) = \frac{7e^{7x} + 1}{1 + (x + e^{7x})^2}$$

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

$$f(x) = \log(3 + \operatorname{tg} x) \quad f'(x) = \frac{1}{(3 + \operatorname{tg} x) \cos^2 x}$$

$$f(x) = \operatorname{sen} \left(\frac{1}{2x^2 + 1} \right) \quad f'(x) = -\frac{4x \cos \left(\frac{1}{2x^2 + 1} \right)}{(2x^2 + 1)^2}$$

$$f(x) = \frac{1}{e^{-5x} + 1} \quad f'(x) = \frac{5e^{-5x}}{(e^{-5x} + 1)^2}$$

$$f(x) = e^{\frac{1}{5x^2 - 4}} \quad f'(x) = -\frac{10xe^{\frac{1}{5x^2 - 4}}}{(5x^2 - 4)^2}$$

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

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

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

$$f(x) = \frac{e^x}{\sqrt{5x + 3}} \quad f'(x) = \frac{e^x}{\sqrt{5x + 3}} - \frac{5e^x}{2(5x + 3)^{3/2}}$$

$$f(x) = \log \left(\frac{1}{\operatorname{sen} x} \right) \quad f'(x) = -\frac{\cos x}{\operatorname{sen} x} = -\frac{1}{\operatorname{tg} x}$$

$$f(x) = \log^2(2x + 3) \quad f'(x) = \frac{4 \log(2x + 3)}{2x + 3}$$

$$f(x) = \frac{e^x + 1}{\operatorname{sen} x} \quad f'(x) = \frac{e^x}{\operatorname{sen} x} - \frac{(e^x + 1) \cos x}{\operatorname{sen}^2 x}$$

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

$$f(x) = 5^{\sqrt{1-x^2}} \quad f'(x) = -\frac{x 5^{\sqrt{1-x^2}} \log 5}{\sqrt{1-x^2}}$$

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

$$f(x) = \operatorname{arcsen}(3x^2) \quad f'(x) = \frac{6x}{\sqrt{1-9x^4}}$$

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