$$y = 5\,arctg\,x - \cos x + 3Ln\,x + 7\,.\,6^x$$

$$y' = 5\,\frac{1}{1+x^2} - (-sen\,x) + 3\,\frac{1}{x} + 7\cdot 6^x\,Ln\,6 = \frac{5}{1+x^2} + sen\,x + \frac{3}{x} + 7\cdot 6^x\,Ln\,6$$

$$y = \frac{3 - sen\,x + 4\,x^3}{\log_5 x - tg\,x}$$

$$y' = \frac{\left(-\cos x + 12x^2\right)\left(\log_5 x - tg\,x\right) - \left(3 - sen\,x + 4\,x^3\right)\left(\frac{1}{x\,Ln\,5} - \frac{1}{\cos^2 x}\right)}{\left(\log_5 x - tg\,x\right)^2}$$

$$y = \left(\arccos x - arctg\,x\right)\left(3\,tg\,x + 5\cos x\right)$$

$$y' = \left(\frac{-1}{\sqrt{1-x^2}} - \frac{1}{1+x^2}\right)\left(3\,tg\,x + 5\cos x\right) + \left(\arccos x - arctg\,x\right)\left(\frac{3}{\cos^2 x} - 5\,sen\,x\right)$$

$$y = \left(x^3 - 2x + 1\right)\cos x$$

$$y' = \left(3x^2 - 2\right)\cos x + \left(x^3 - 2x + 1\right)(-sen\,x) = \left(3x^2 - 2\right)\cos x - \left(x^3 - 2x + 1\right)sen\,x$$

$$y = 3^x + Ln\,x - \frac{1}{x}$$

$$y' = 3^x\,Ln\,3 + \frac{1}{x} - \frac{-1}{x^2} = 3^x\,Ln\,3 + \frac{1}{x} + \frac{1}{x^2}$$

$$y = 2^x \log_2 x$$

$$y' = 2^x\,(Ln\,2)\log_2 x + 2^x\,\frac{1}{x\,Ln\,2}$$

$$y = \frac{x}{Ln\,x}$$

$$y' = \frac{1\cdot Ln\,x - x\frac{1}{x}}{(Ln\,x)^2} = \frac{Ln\,x - 1}{(Ln\,x)^2}$$

$$y = 3^x\,sen\,x - \log_5 x$$

$$y' = 3^x\,(Ln\,3)\,sen\,x + 3^x\cos x - \frac{1}{x\,Ln\,5}$$

Derivada de la función compuesta.

$$y=(f(x))^n \quad \rightarrow \quad y'=n\,(f(x))^{n-1}\,f'(x)$$

$$y=(3x^4-5x+8)^7 \quad \rightarrow \quad y'=7(3x^4-5x+8)^6\,(12x^3-5)$$

$$y=(Ln\ x)^5 \quad \rightarrow \quad y'=5(Ln\ x)^4\,\frac{1}{x}=\frac{5(Ln\ x)^4}{x}=\frac{5\ Ln^4 x}{x}$$

$$y=tg^3 x=(tg\ x)^3 \quad \rightarrow \quad y'=3\,tg^2 x\,\frac{1}{\cos^2 x}=\frac{3\,tg^2 x}{\cos^2 x}$$

$$y=\sqrt{f(x)} \quad \rightarrow \quad y'=\frac{f'(x)}{2\sqrt{f(x)}}$$

$$y=\sqrt{x^3-4x} \quad \rightarrow \quad y'=\frac{3x^2-4}{2\sqrt{x^3-4x}}$$