

REGLES DE DERIVACIÓ

$$f(x) = k \quad \rightarrow \quad f'(x) = 0$$

$$f(x) = x \quad \rightarrow \quad f'(x) = 1$$

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

$$F(x) = f(x) \pm g(x) \quad \rightarrow \quad F'(x) = f'(x) \pm g'(x)$$

$$F = k \cdot f(x) \quad \rightarrow \quad F' = k \cdot f'(x)$$

$$F(x) = f(x) \cdot g(x) \quad \rightarrow \quad F'(x) = f'(x) \cdot g(x) + f(x) \cdot g'(x)$$

$$F(x) = \frac{f(x)}{g(x)} \quad \rightarrow \quad F'(x) = \frac{f'(x) \cdot g(x) - f(x) \cdot g'(x)}{g(x)^2}$$

$$f(x) = \sin x \quad \rightarrow \quad f'(x) = \cos x$$

$$f(x) = \cos x \quad \rightarrow \quad f'(x) = -\sin x$$

$$f(x) = \tan x \quad \rightarrow \quad f'(x) = 1 + \tan^2 x = \frac{1}{\cos^2 x}$$

$$f(x) = e^x \quad \rightarrow \quad f'(x) = e^x$$

$$f(x) = a^x \quad \rightarrow \quad f'(x) = a^x \cdot \ln a$$

$$f(x) = \ln x \quad \rightarrow \quad f'(x) = \frac{1}{x}$$

$$f(x) = \log_a x \quad \rightarrow \quad f'(x) = \frac{1}{x} \cdot \frac{1}{\ln a} = \frac{1}{x \cdot \ln a}$$

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

$$F(x) = \sin(f(x)) \quad \rightarrow \quad F'(x) = \cos(f(x)) \cdot f'(x)$$

$$F(x) = \cos(f(x)) \quad \rightarrow \quad F'(x) = -\sin(f(x)) \cdot f'(x)$$

$$F(x) = \tan(f(x)) \quad \rightarrow \quad F'(x) = \left(1 + \tan^2(f(x)) \cdot f'(x)\right) = \frac{f'(x)}{\cos^2(f(x))}$$

$$F(x) = e^{f(x)} \quad \rightarrow \quad F'(x) = e^{f(x)} \cdot f'(x)$$

$$F(x) = a^{f(x)} \quad \rightarrow \quad F'(x) = a^{f(x)} \cdot \ln a \cdot f'(x)$$

$$F(x) = \ln f(x) \quad \rightarrow \quad F'(x) = \frac{1}{f(x)} \cdot f'(x) = \frac{f'(x)}{f(x)}$$

$$F(x) = \log_a(f(x)) \quad \rightarrow \quad F'(x) = \frac{1}{f(x) \cdot \ln a} \cdot f'(x) = \frac{f'(x)}{f(x) \cdot \ln a}$$