

Calculus

Mohammed Amine Chennoufi

November 19, 2022

I- Derivatives

Définition N°1

A derivative Is the rate of change of a function under a finitely small value noted dx . For a function $f(x)$ defined in \mathbb{R} ; It's derivative is written under the form:

$$\frac{df}{dx} = \lim_{x \rightarrow 0} \frac{f(dx + x) - f(x)}{dx}$$

Which gives us the formal definition of derivatives; They are the rate of change of a function df after we move it by a little amount dx .

Propriétés N°1

Derivatives have many rules most importantly

- $\frac{d(x^n)}{dx} = \lim_{x \rightarrow 0} n * x^{n-1}.$