Fundamental Theorem of Calculus

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February 6, 2020

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The definition of the derivative is the angle at a point on curve:

$$\begin{aligned}\frac{\mathrm{d}}{\mathrm{d}x}\left(f\left(x\right)\right) &= \lim_{x\to a}\left[\frac{f\left(x\right)-f\left(a\right)}{x-a}\right] \\ &= \lim_{\Delta\to 0}\left[\frac{f\left(x+\Delta x\right)-f\left(x\right)}{\Delta x}\right];\ \ \Delta x = x-a\end{aligned}$$

and if $y = f\left(x\right)$ it is expressed that $\frac{\mathrm{d}y}{\mathrm{d}x} = f'\left(x\right)$.
The definition of the integral is the cumulative sum, the area benath that curve and the

$$\int_a^b f\left(x\right)\mathrm{d}x = \lim_{n\to\infty}\left[\sum_{i=1}^{n}\left[\frac{b-a}{n}\times f\left(x_i\right)\right]\right]$$

This is known as the definite integral.
Cauchy