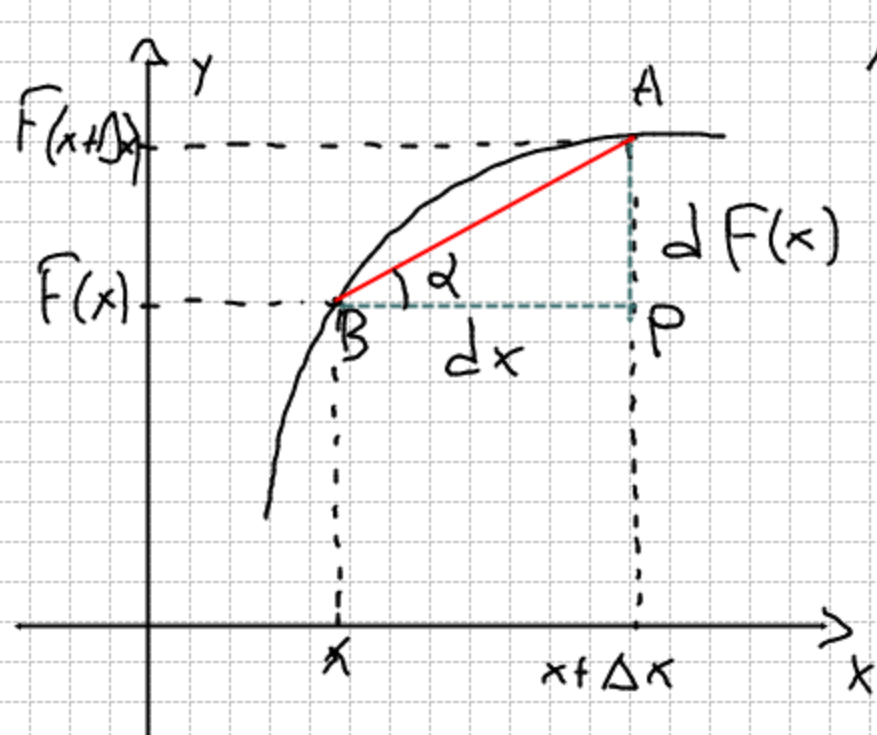


Data una funzione $F(x)$ continuo e definita nell'intorno I si chiama differenziale della funzione $F(x)$:

$$dF(x): F'(x_0) \Delta x$$



$$AP = \sin \alpha \cdot AB$$

$$BP = \cos \alpha \cdot AB$$

$$\frac{AP}{BP} = \tan \alpha$$

$$dF: F'(x) \cdot dx$$

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$$\sqrt{3,99} = \sqrt{3+0,99}$$

$$x = 3$$

$$dF: F'(x_0) \cdot \Delta x$$

$$\Delta x = 0,99$$

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

$$dF(x) = F(x) + F'(x) \cdot \Delta x = 1,997$$

$$dF(x) = \sqrt{3} + \frac{1}{2\sqrt{3}} \cdot 0,99$$

$$\frac{F(x+\Delta x) - F(x)}{\Delta x} = F'(x)$$

$$F(x+\Delta x) = F'(x) \cdot \Delta x + F(x)$$

$$\sqrt{3,99} = \sqrt{4-0,01}$$

$$x = 4$$

$$\Delta x = -0,01$$

$$f'(x) = \frac{1}{2\sqrt{x}}$$

$$dF = \sqrt{4} + \frac{1}{4} \cdot (-0,01) = 2 - 0,0025 = 1,9975$$

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$$\frac{1}{\sqrt{1,01}} = \frac{1}{\sqrt{1+0,01}} \Rightarrow$$

$$x = 1$$

$$\Delta x = 0,01$$

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

$$dF(x) = F(x) + F'(x) \cdot \Delta x = 1 + \left(-\frac{1}{2}\right) \cdot 0,01 = +0,995$$