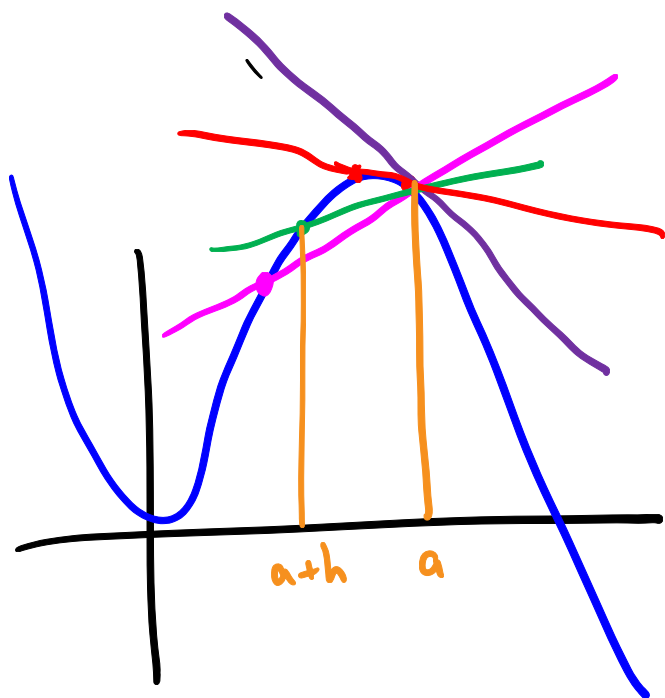


Differentiation - Instantaneous
(Local)

Integration - Cumulative
(Global)

Differentiation

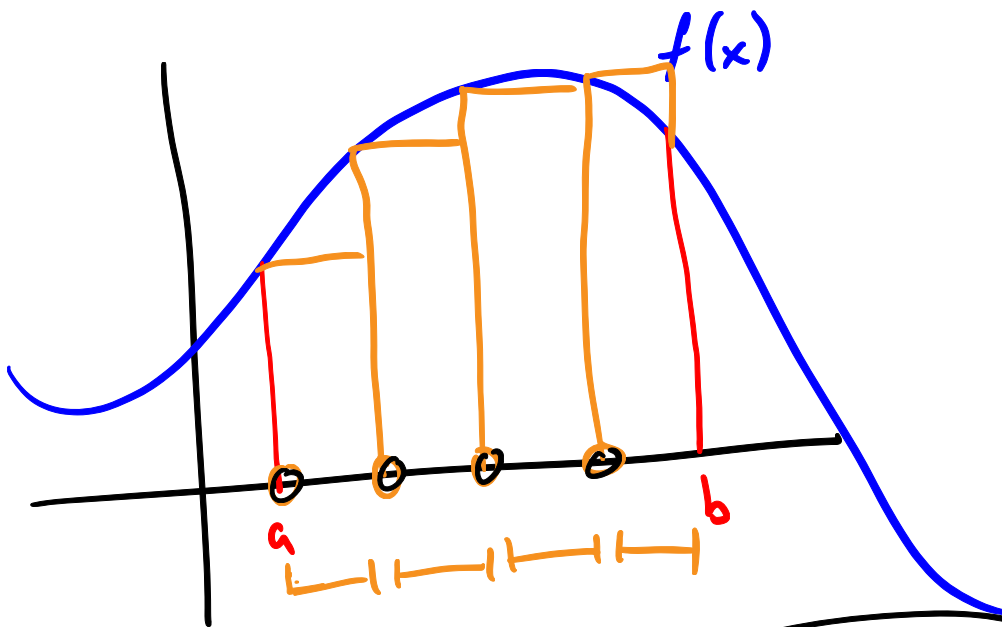
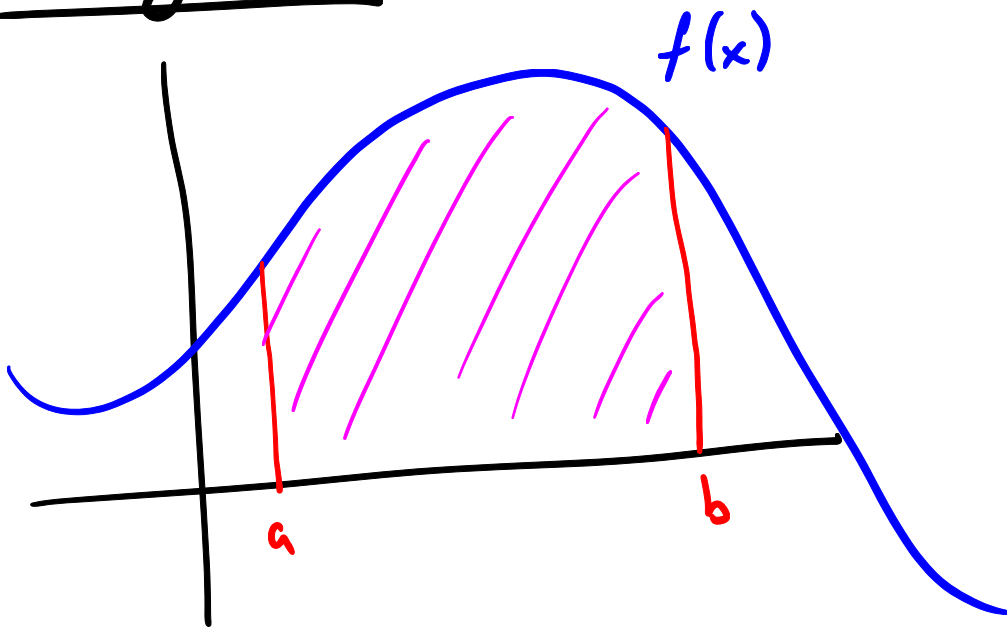


$$\text{slope}_{\text{sec}} = \frac{f(a+h) - f(a)}{h} = \frac{\Delta y}{\Delta x}$$

limit
↓

$$\text{slope}_{\text{tan}} = \lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h}$$

Integration



Riemann
Sum

$$\sum_{i=1}^n f(x_i^*) \Delta x_i$$

$$\lim_{n \rightarrow \infty} (f(x_1) + f(x_2) + \dots + f(x_n)) \left(\frac{b-a}{n} \right)$$

$$= \int_a^b f(x) dx$$