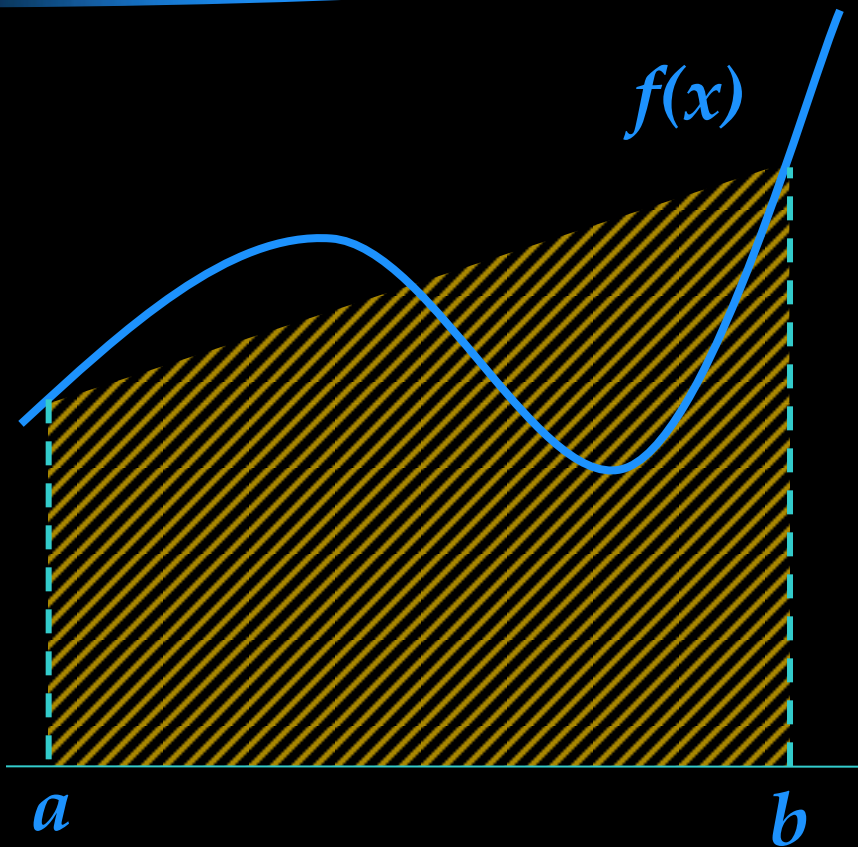


Método del trapecio



Integración numérica

Método del trapecio (un segmento)

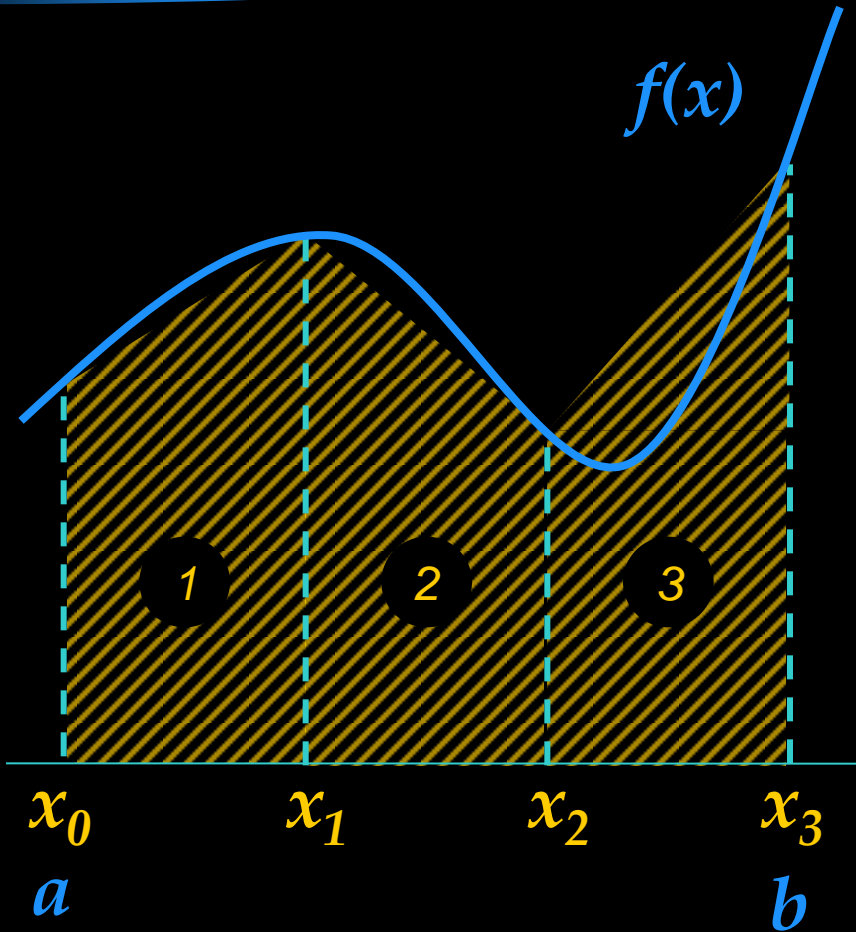


$$\int_a^b f(x) \approx \text{área}$$

$$\approx \text{base} \cdot \text{altura}$$

$$\approx (b - a) \cdot \left(\frac{f(a) + f(b)}{2} \right)$$

Método del trapecio (varios segmentos)



$$\int_a^b f(x) \approx a_1 + a_2 + a_3$$

$$\approx base \cdot h_1 + base \cdot h_2 + base \cdot h_3$$

$$\approx base(h_1 + h_2 + h_3)$$

$$\approx \text{base}(h_1 + h_2 + h_3)$$

$$\approx \frac{(b-a)}{n} \cdot \left[\frac{f(x_0) + f(x_1)}{2} + \frac{f(x_1) + f(x_2)}{2} + \frac{f(x_2) + f(x_3)}{2} \right]$$

$$\approx \frac{(b-a)}{2n} \cdot [f(x_0) + 2f(x_1) + 2f(x_2) + f(x_3)]$$

$$\approx \frac{(b-a)}{2n} \cdot \sum_{i=0}^n [f(x_i) + f(x_{i+1})]$$

