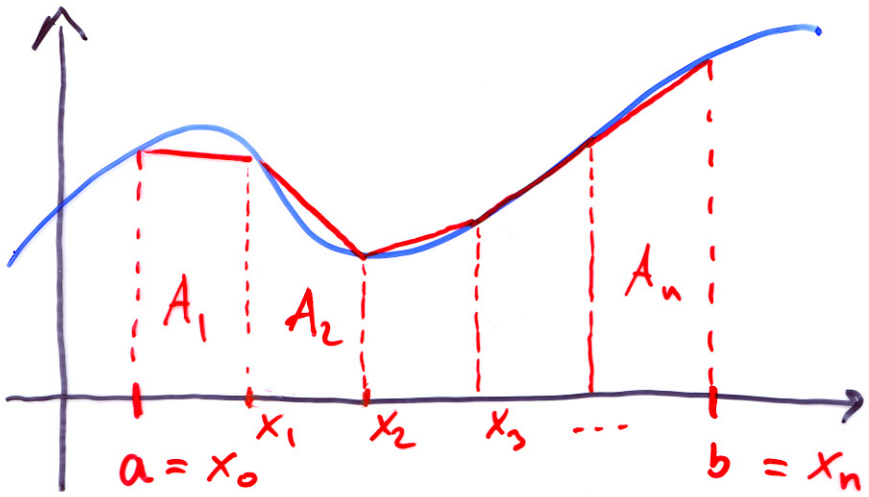
Trapetsmetoden:



Intervallet $[a,b]$ delas in i n st. lika delar.

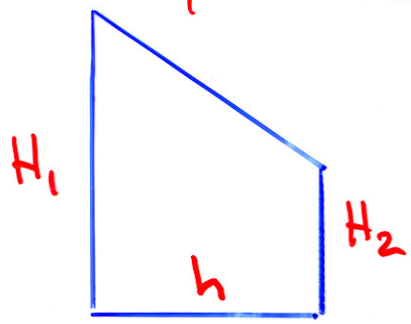
$$h = \frac{b-a}{n}$$

$x_0 = a$, $x_1 = a+h$, $x_2 = a+2h$, ..., $x_n = a+nh = b$

I varje delintervall approximeras arean under grafen av arean av en trapets!

Trapetsarean = basen · (höjd 1 + höjd 2)/2

$$= h \cdot \frac{H_1 + H_2}{2}$$!



Vi finner att $A_1 = h \cdot \frac{f(x_0)+f(x_1)}{2}$,

$A_2 = h \cdot \frac{f(x_1)+f(x_2)}{2}$, ..., $A_n = h \cdot \frac{f(x_{n-1})+f(x_n)}{2}$

Drs

$$\int_a^b f(x)\,dx \approx A_1 + A_2 + \ldots + A_n =$$

$$= h\left(\frac{f(x_0)}{2} + f(x_1) + f(x_2) + \ldots + f(x_{n-1}) + \frac{f(x_n)}{2}\right)$$