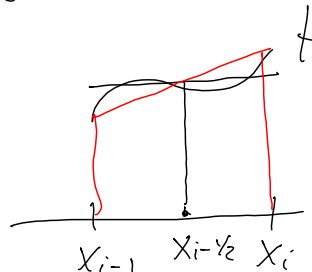


Trapezmetoden.

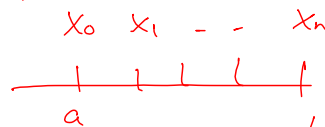
Vi har sett på midtpunktmetoden for å beregne integraler numerisk. Del opp $[a, b]$ i delintervaller.

Bruk $(x_i - x_{i-1}) f(x_{i-1/2})$
 som tilnærming til $\int_{x_{i-1}}^{x_i} f(x) dx$



Alternativt: Bruk trapeset med høyde $f(x_{i-1})$
 i x_{i-1} og $f(x_i)$ i x_i .

$$\int_{x_{i-1}}^{x_i} f(x) dx \approx \frac{f(x_{i-1}) + f(x_i)}{2} (x_i - x_{i-1})$$

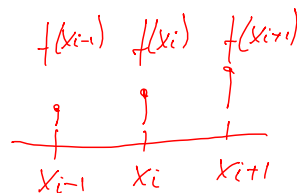


$$\int_a^b f(x) dx = \sum_{i=1}^n \int_{x_{i-1}}^{x_i} f(x) dx$$

$x_i - x_{i-1} = h$
 $i = 1 \rightarrow n$

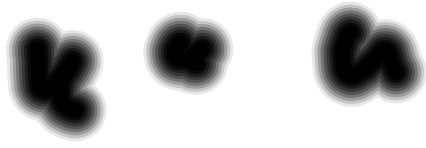
$$\approx \sum_{i=1}^n \frac{f(x_{i-1}) + f(x_i)}{2} (x_i - x_{i-1})$$

$$= \sum_{i=1}^n \frac{f(x_{i-1}) + f(x_i)}{2} h$$



$$= h/2 \sum_{i=1}^n (f(x_{i-1}) + f(x_i))$$

$$= \frac{h}{2} \left(f(x_0) + 2 \sum_{i=1}^{n-1} f(x_i) + f(x_n) \right)$$



.