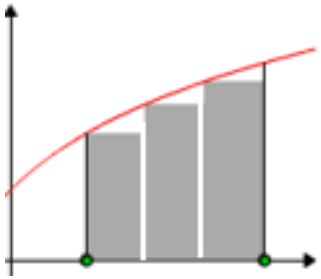
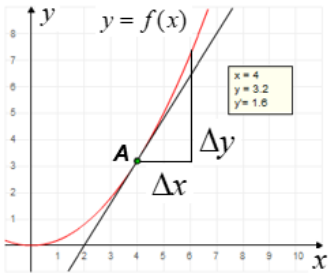
Integrasjon

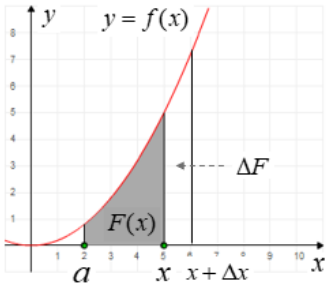
Def

$$\int_a^b f(x)dx = \lim_{\|P\|\to 0} \sum_{i=1}^{n} f(x_i^*)\cdot \Delta x_i$$



Integrasjon / Derivasjon
Motsatte regneoperasjoner

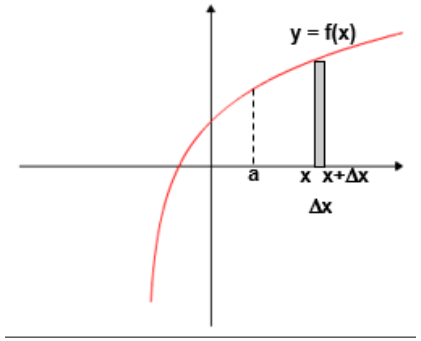




$$y' = \lim_{\Delta x\to 0} \frac{\Delta y}{\Delta x} = \frac{dy}{dx}$$

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

$$F'(x) = \lim_{\Delta x\to 0} \frac{\Delta F}{\Delta x} = \lim_{\Delta x\to 0} \frac{f(x)\cdot \Delta x}{\Delta x} = f(x)$$



Substituasjon

$$\int f(u(x))\cdot u'(x)dx = \int f(u)du \qquad \text{hvor } u = u(x)$$

Delvis integasjon

$$\int udv = uv - \int vdu + C$$