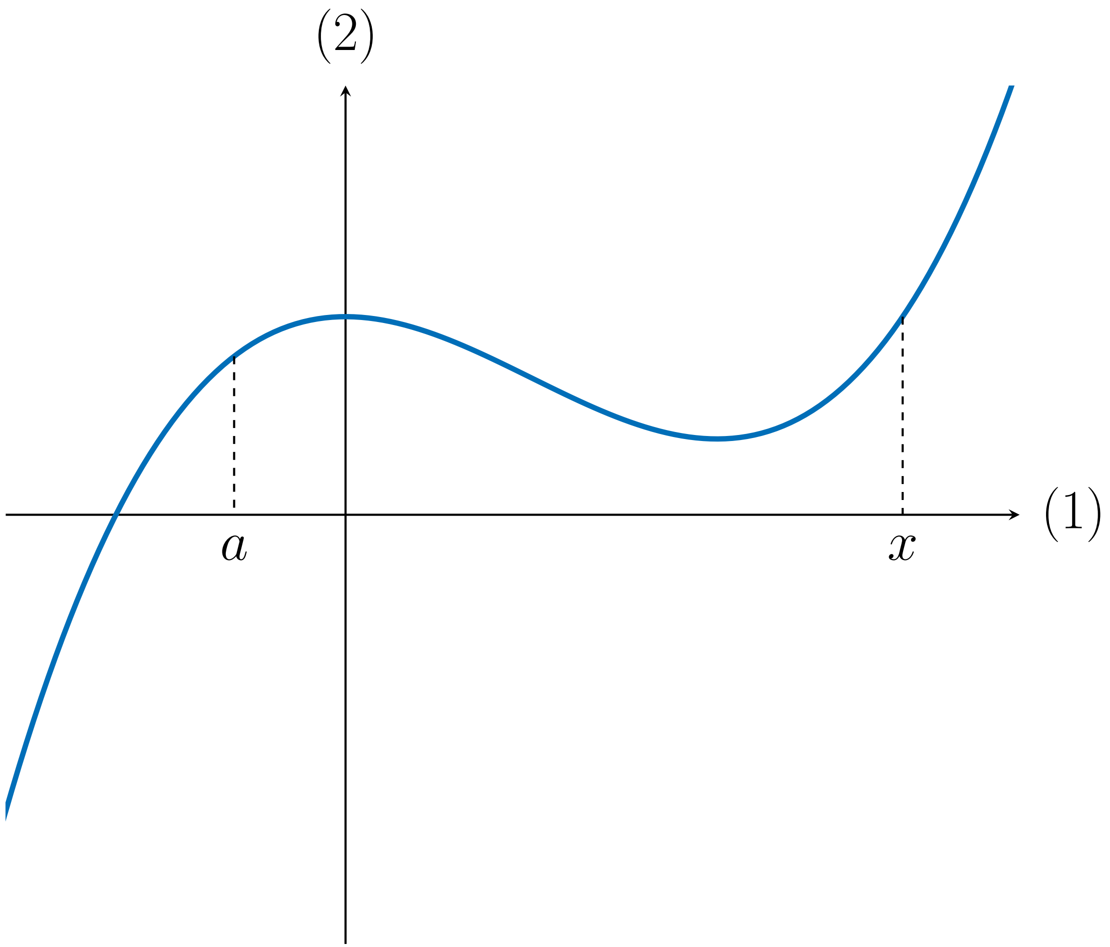
Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$

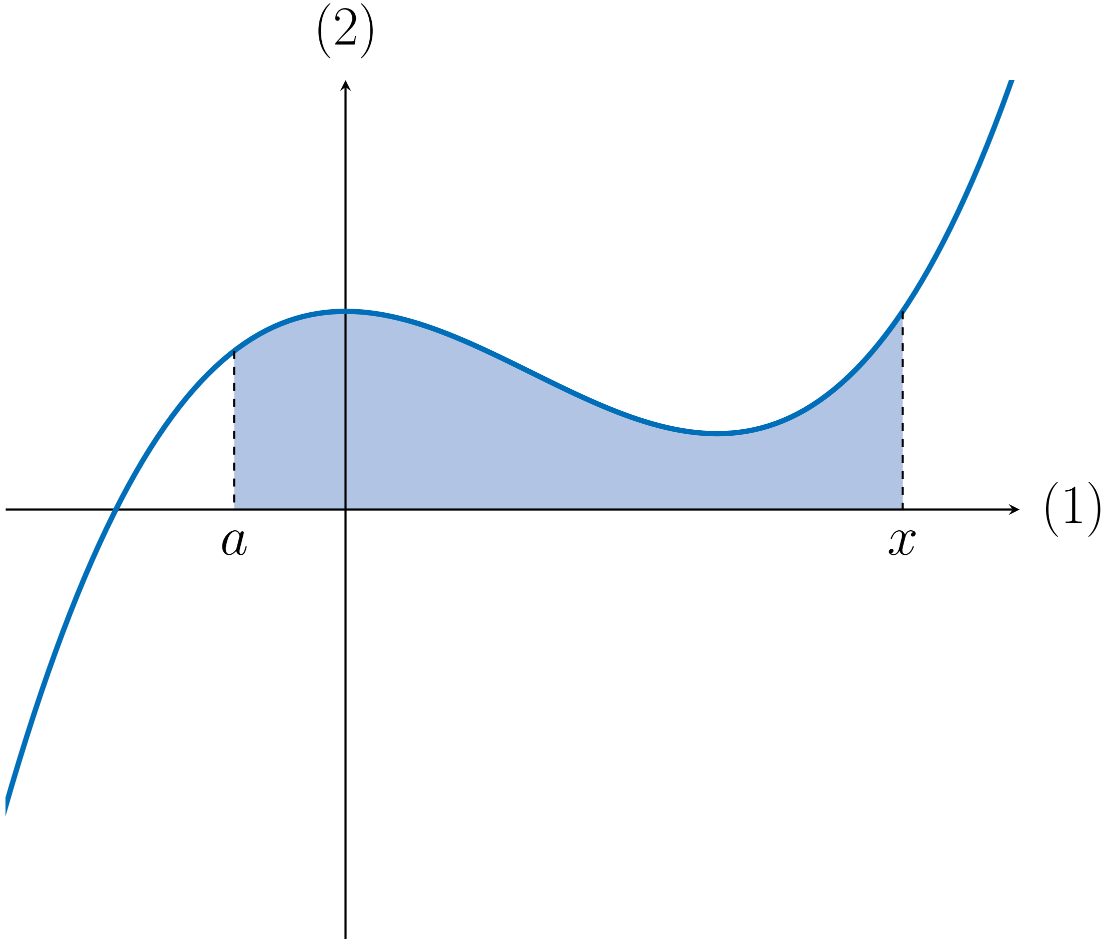
Hovedsætning $F'(x) = f(x)$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$

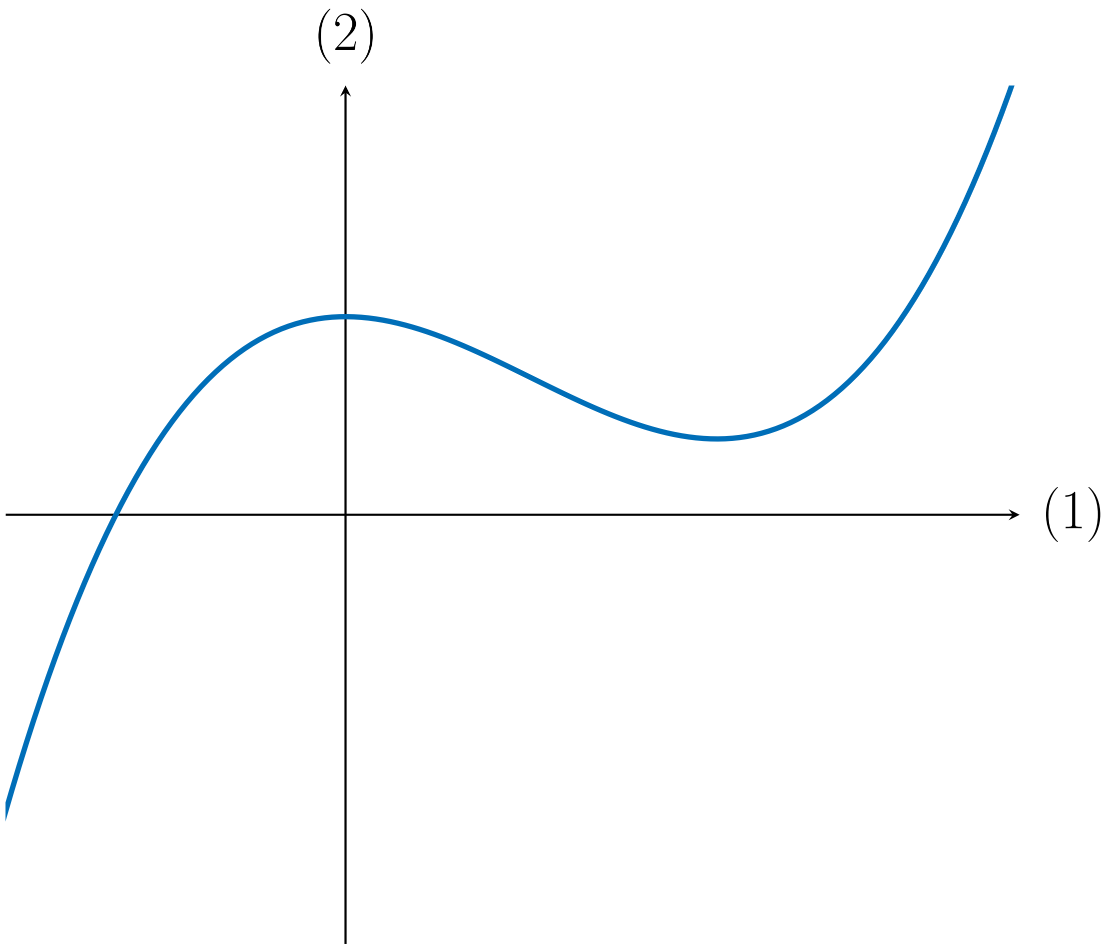
Hovedsætning $F'(x) = f(x)$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

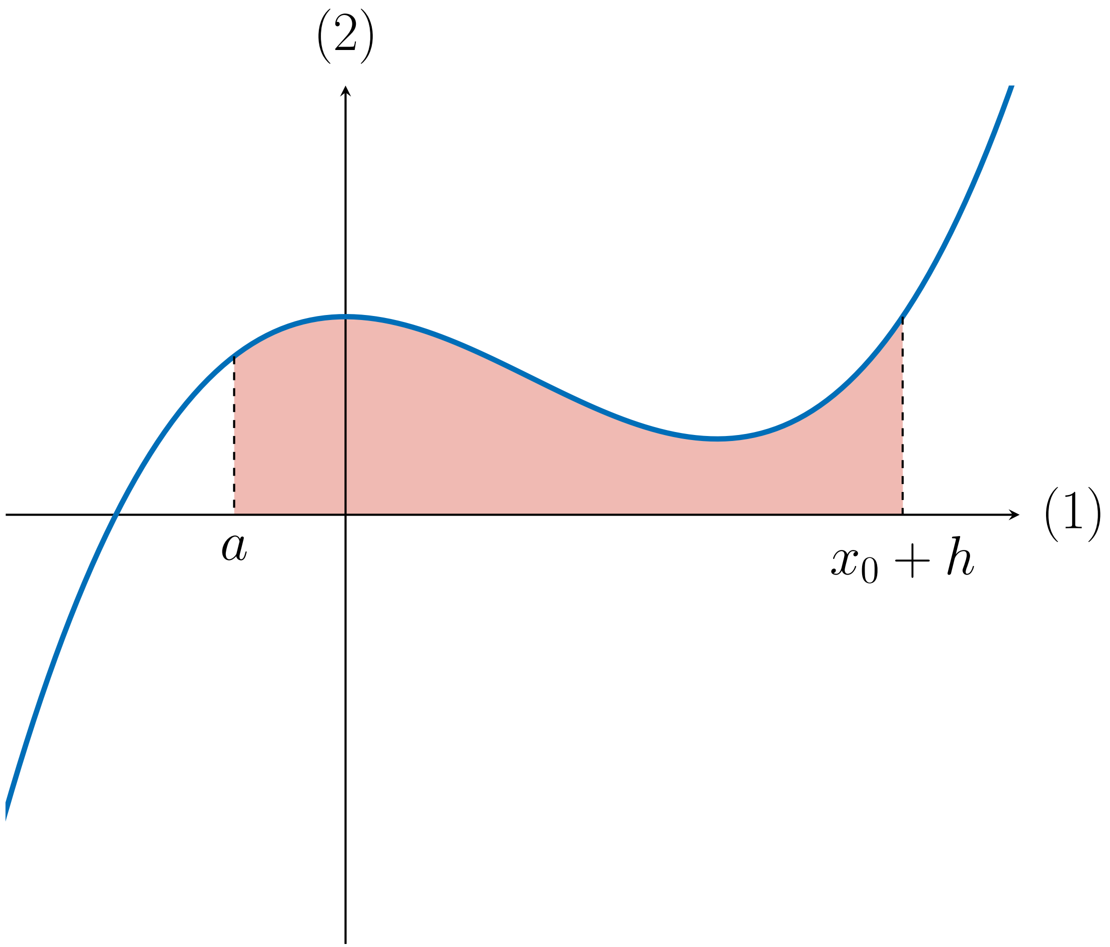
$$F'(x_0) = \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h}$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

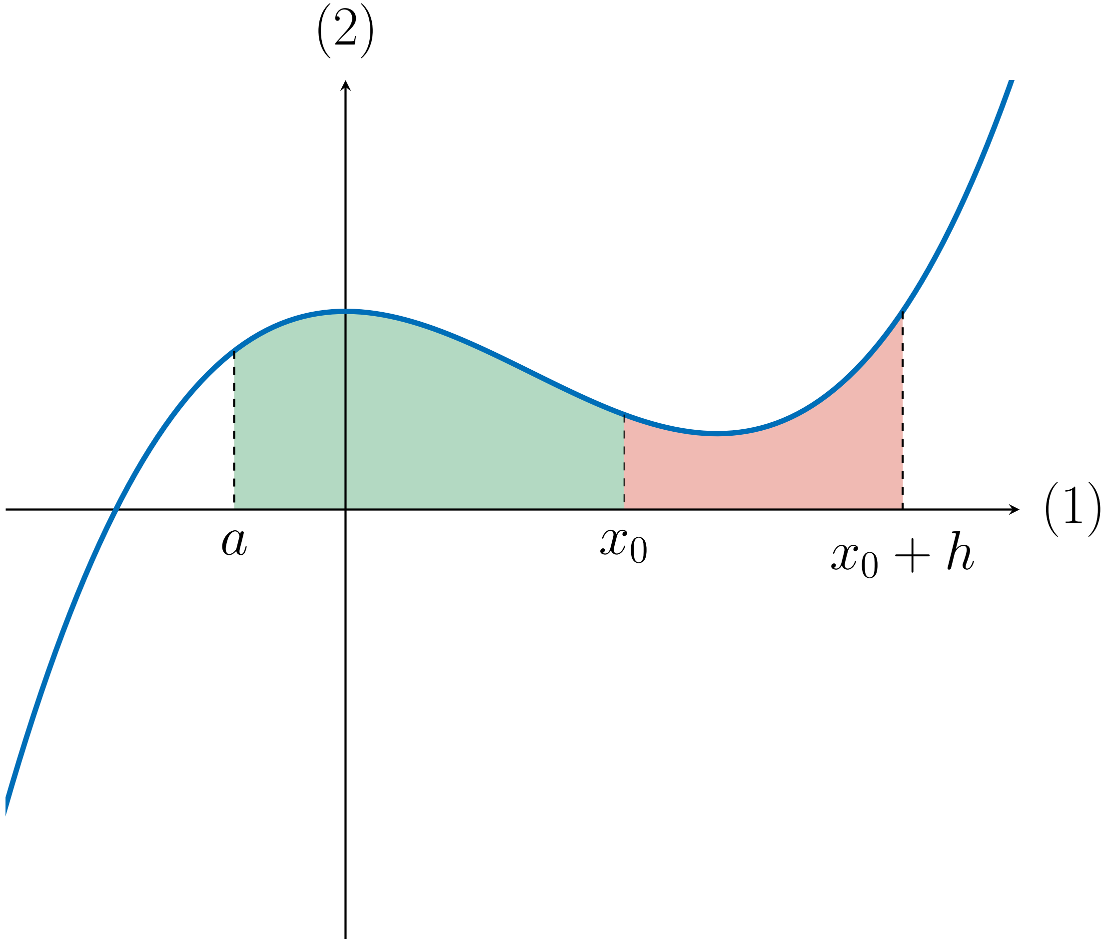
$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h}
\end{aligned}
$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

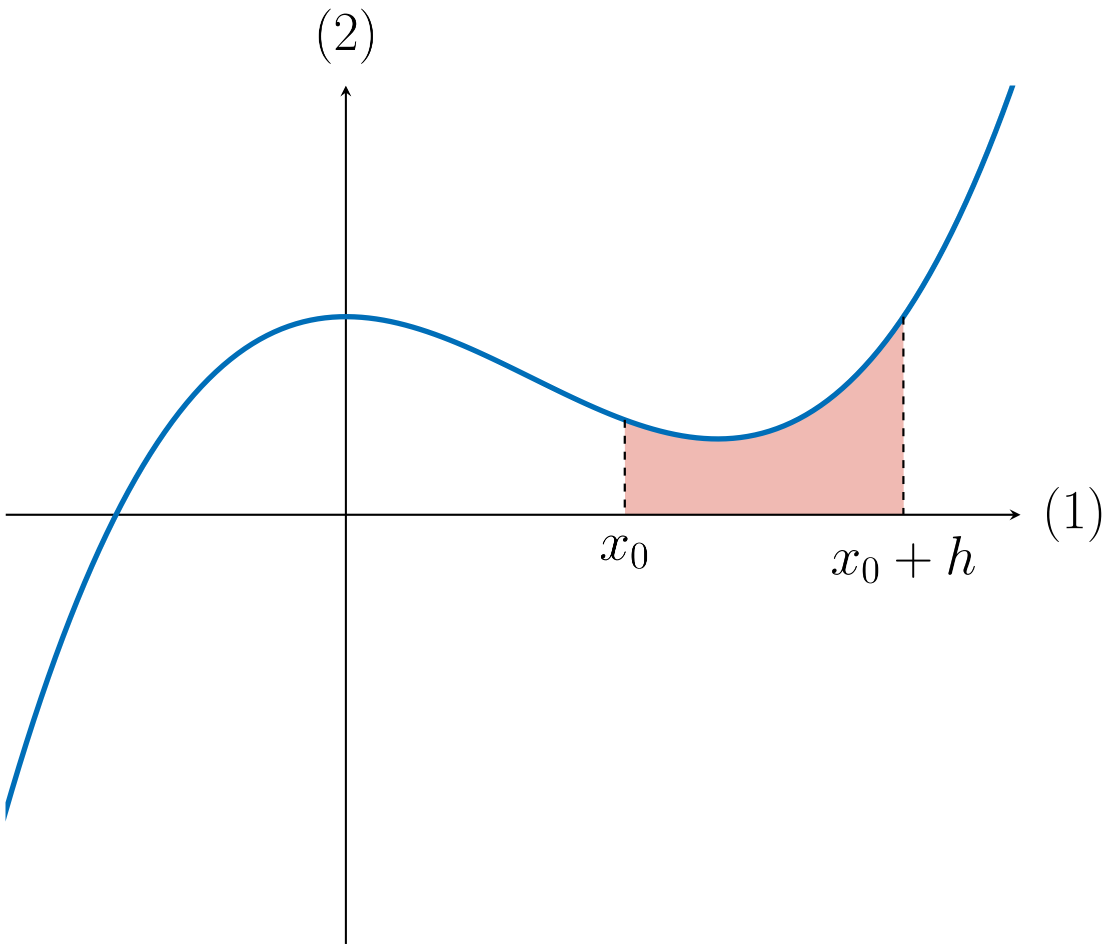
$$\begin{aligned} F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\ &= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \end{aligned}$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

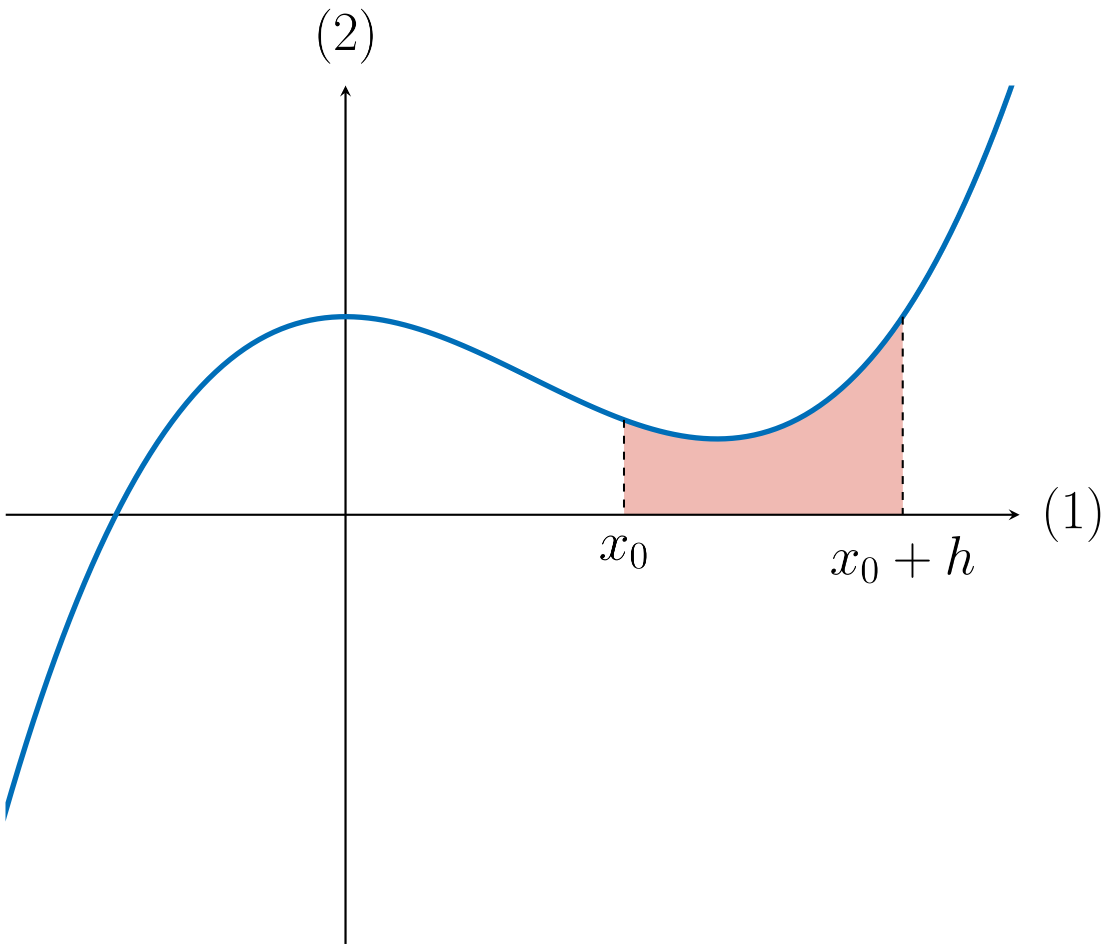
$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h}
\end{aligned}
$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

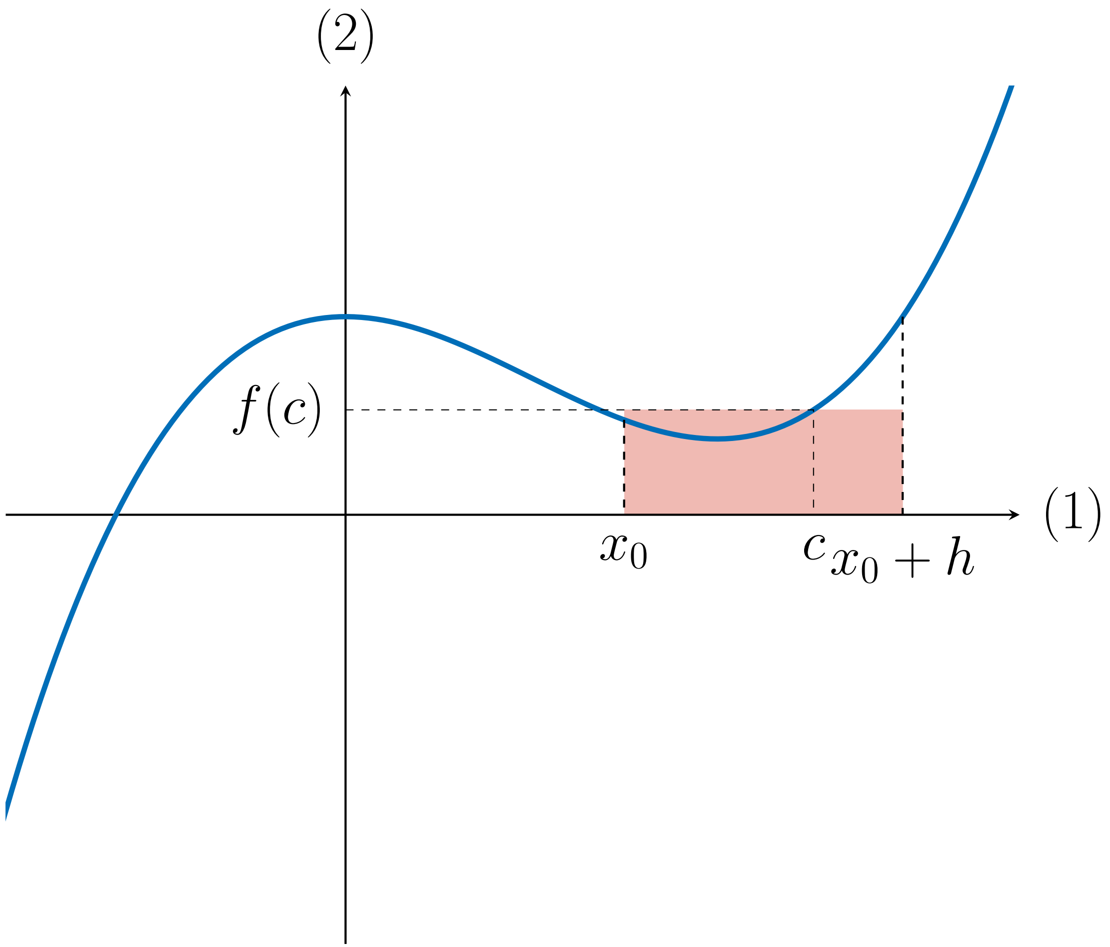
$$\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h}
\end{aligned}$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

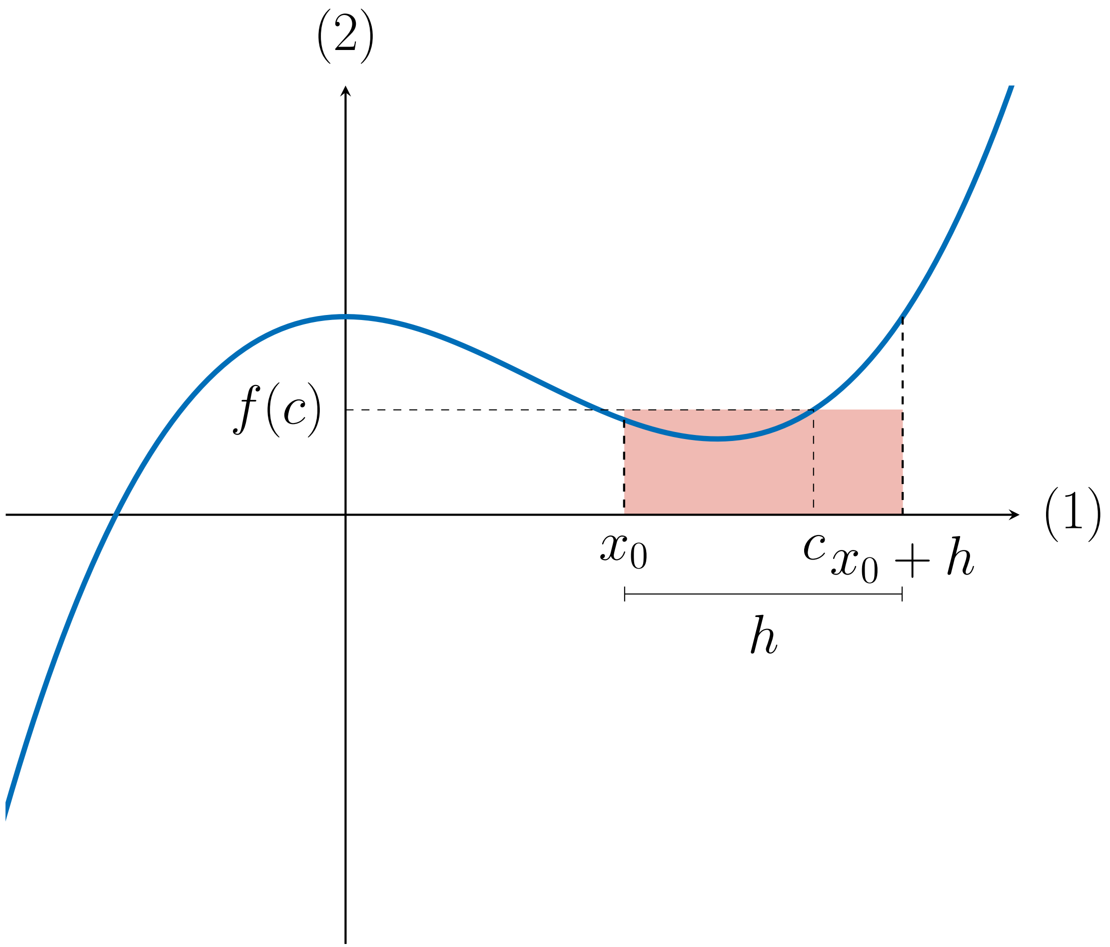
$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h}
\end{aligned}
$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

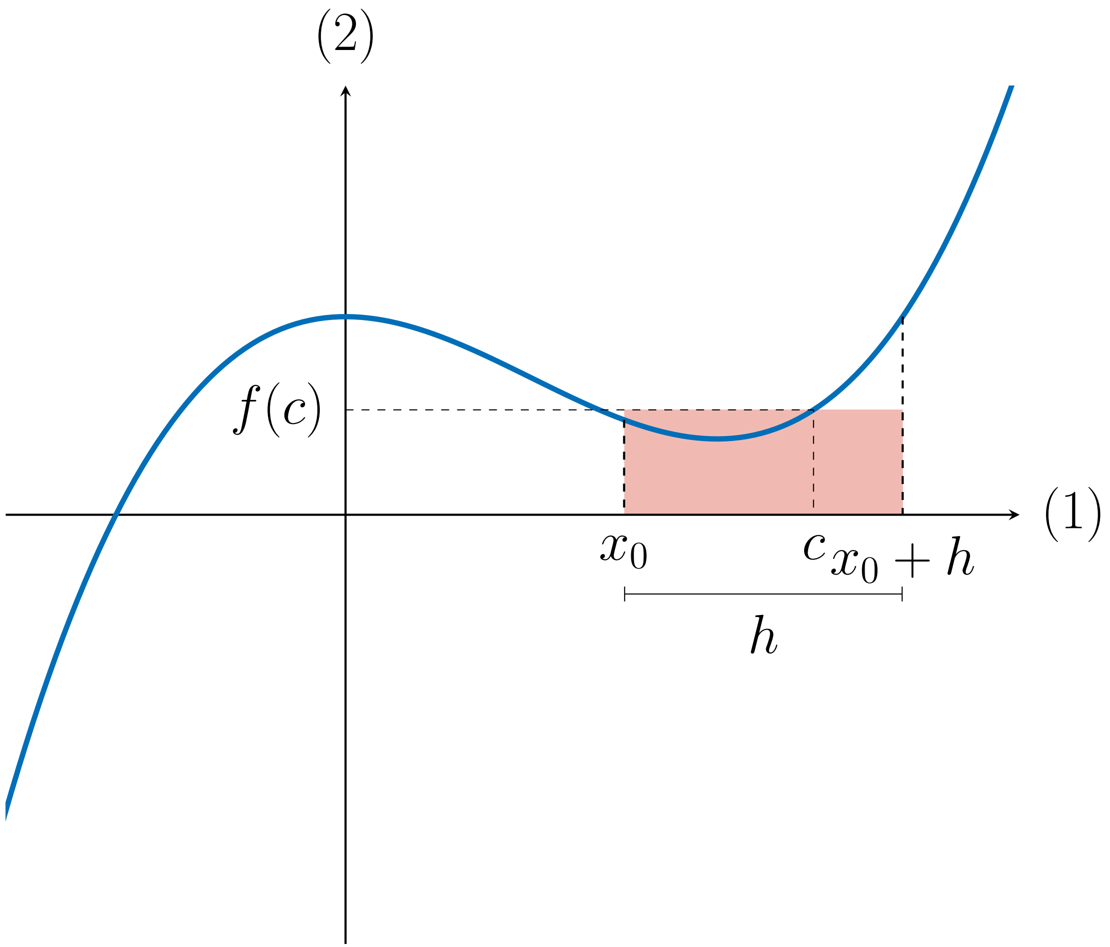
$$\begin{aligned} F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\ &= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\ &= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h} \\ &= \lim_{h\to 0} \frac{h \cdot f(c)}{h} \end{aligned}$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

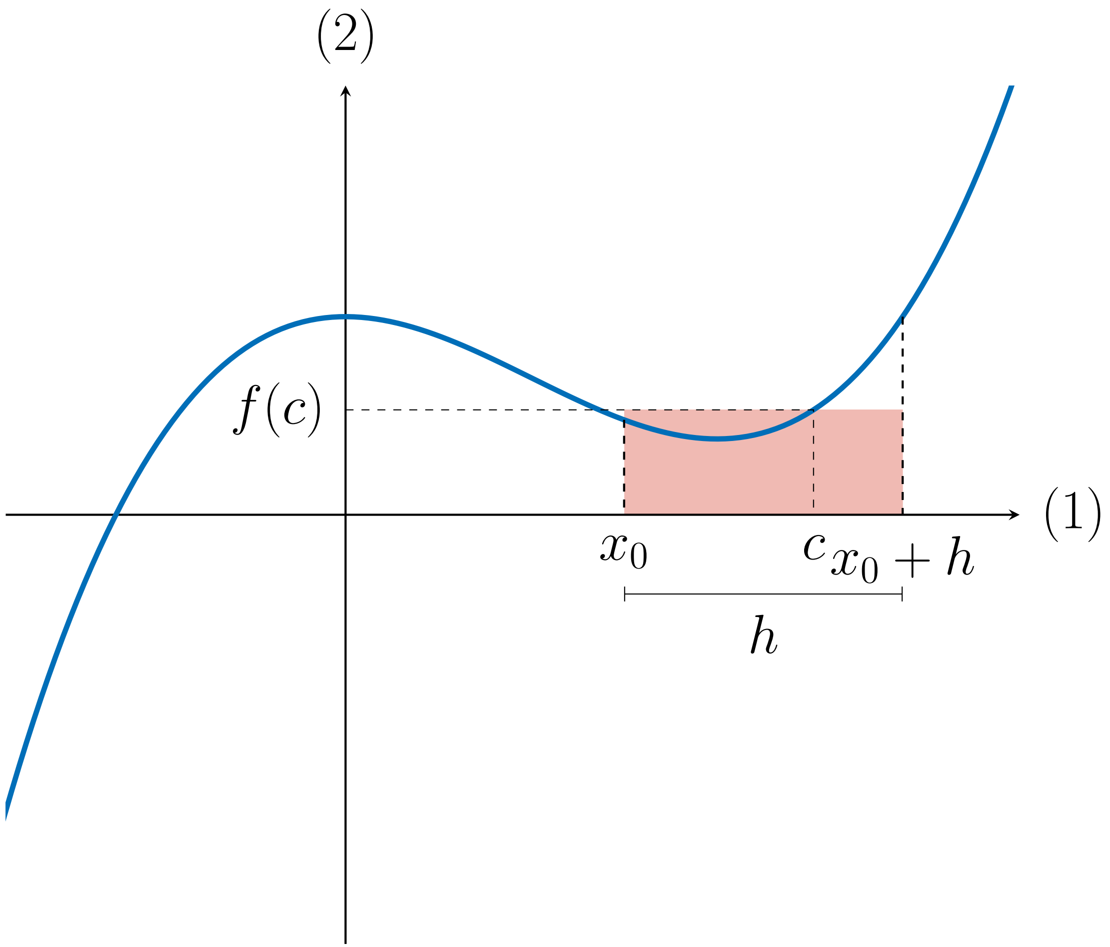
$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{h \cdot f(c)}{h} \\
&= \lim_{h\to 0} f(c)
\end{aligned}
$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$
Hovedsætning $F'(x) = f(x)$

$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{h \cdot f(c)}{h} \\
&= \lim_{h\to 0} f(c)
\end{aligned}
$$

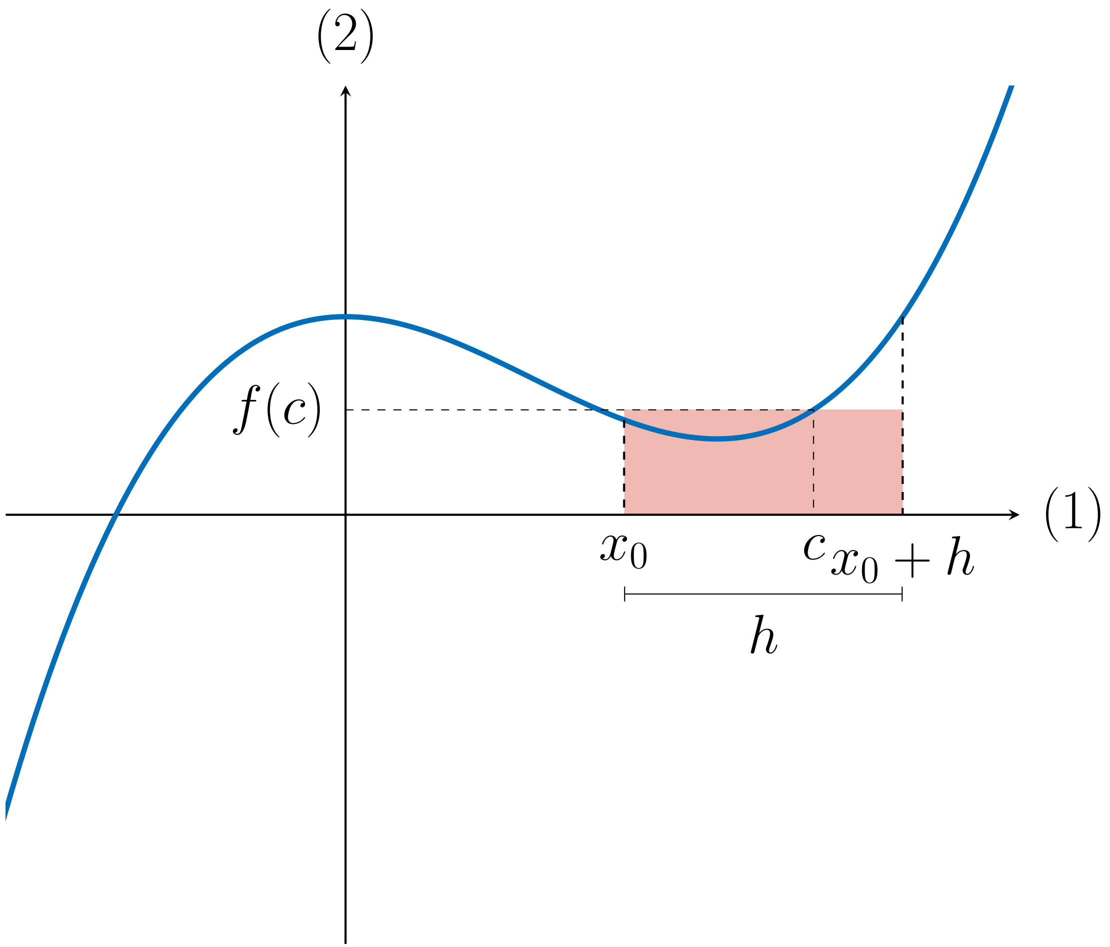


Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$

Hovedsætning $F'(x) = f(x)$

$$
\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{h \cdot f(c)}{h} \\
&= \lim_{h\to 0} f(c) \\
&= \lim_{c\to x_0} f(c)
\end{aligned}
$$



Hovedsætning for intergralregning

Arealfunktion $F(x) = \int_a^x f(t)\,dt$

Hovedsætning $F'(x) = f(x)$

$$\begin{aligned}
F'(x_0) &= \lim_{h\to 0} \frac{F(x_0+h) - F(x_0)}{h} \\
&= \lim_{h\to 0} \frac{\int_a^{x_0+h} f(t)\,dt - \int_a^{x_0} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{\int_{x_0}^{x_0+h} f(t)\,dt}{h} \\
&= \lim_{h\to 0} \frac{h \cdot f(c)}{h} \\
&= \lim_{h\to 0} f(c) \\
&= \lim_{c\to x_0} f(c) \\
&= f(x_0)
\end{aligned}$$