

Afgeleiden: formularium

Basisformules:

- $Dx^n = n \cdot x^{n-1} \quad (\forall n \in \mathbb{R})$

- $D\sqrt{x} = \frac{1}{2\sqrt{x}}$

- $De^x = e^x$

- $Da^x = a^x \cdot \ln a$

- $D \ln x = \frac{1}{x}$

- $D {}^a\log x = \frac{1}{x \cdot \ln a}$

- $D \sin x = \cos x$

- $D \cos x = -\sin x$

- $D \tan x = \frac{1}{\cos^2 x}$

- $D \cot x = -\frac{1}{\sin^2 x}$

- $D \operatorname{Bgsin} x = \frac{1}{\sqrt{1-x^2}}$

- $D \operatorname{Bgcos} x = -\frac{1}{\sqrt{1-x^2}}$

- $D \operatorname{Bgtan} x = \frac{1}{1+x^2}$

- $D \operatorname{Bgcot} x = -\frac{1}{1+x^2}$

Definities:

- $f'(a) = \lim_{x \rightarrow a} \frac{f(x) - f(a)}{x - a}$

- $f'(x) = \lim_{\Delta x \rightarrow 0} \frac{f(x + \Delta x) - f(x)}{\Delta x}$

Rekenregels:

- $D(r \cdot f) = r \cdot Df \quad (\forall r \in \mathbb{R})$

- $D(f + g) = Df + Dg$

- $D(f \cdot g) = Df \cdot g + f \cdot Dg$

- $D\left(\frac{f}{g}\right) = \frac{g \cdot Df - f \cdot Dg}{g^2}$

- $D\frac{1}{f} = \frac{-Df}{f^2}$

- $D(f^g) = g \cdot f^{g-1} \cdot Df + f^g \cdot \ln f \cdot Dg$

- $D(f(g)) = Df(g) \cdot Dg$

Raaklijn (aan de grafiek van f in punt $P(a, f(a))$):

- $t \leftrightarrow y = f'(a) \cdot (x - a) + f(a)$