

$$\frac{dy}{dx} = f'(x) = y'$$

(Forskellige notationer for differentialkvotienten af en funktion...)

$$\frac{d}{dx}$$

(Notationen for differentialkvotienten af et udtryk - ikke en funktion...)

Den første kolonne er, når udtrykket står som en funktion:

Den anden kolonne er, når udtrykket står alene:

$$f(x) = a \quad \Leftrightarrow \quad f'(x) = 0$$

$$\frac{d}{dx} a = 0$$

Differentialkvotient af en konstant

$$f(x) = ax \quad \Leftrightarrow \quad f'(x) = a$$

$$\frac{d}{dx} ax = a$$

Differentialkvotient af en ligefrem proportionalitet

$$f(x) = ax + b \quad \Leftrightarrow \quad f'(x) = a$$

$$\frac{d}{dx} ax + b = a$$

Differentialkvotient af en ret linje

$$f(x) = a \cdot x^n \quad \Leftrightarrow \quad f'(x) = a \cdot n \cdot x^{n-1}$$

$$\frac{d}{dx} a \cdot x^n = a \cdot n \cdot x^{n-1}$$

Differentialkvotient af en potensfunktion

$$f(x) = \sin(x) \quad \Leftrightarrow \quad f'(x) = \cos(x)$$

$$\frac{d}{dx} \sin(x) = \cos(x)$$

$$f(x) = \cos(x) \quad \Leftrightarrow \quad f'(x) = -\sin(x)$$

$$\frac{d}{dx} \cos(x) = -\sin(x)$$

$$f(x) = \tan(x) \quad \Leftrightarrow \quad f'(x) = \frac{1}{\cos^2(x)} = 1 + \tan^2(x)$$

$$\frac{d}{dx} \tan(x) = \frac{1}{\cos^2(x)} = 1 + \tan^2(x)$$

$$f(x) = e^x \quad \Leftrightarrow \quad f'(x) = e^x$$

$$\frac{d}{dx} e^x = e^x$$

$$f(x) = a^x \quad \Leftrightarrow \quad f'(x) = a^x \cdot \ln|a|$$

$$\frac{d}{dx} a^x = a^x \cdot \ln|a|$$

$$f(x) = \ln|x| \quad \Leftrightarrow \quad f'(x) = \frac{1}{x}$$

$$\frac{d}{dx} \ln|x| = \frac{1}{x}$$

$$f(x) = \log(x) \quad \Leftrightarrow \quad f'(x) = \frac{1}{x \cdot \ln(10)}$$

$$\frac{d}{dx} \log(x) = \frac{1}{x \cdot \ln(10)}$$

$$f(x) = k \cdot f(x) \quad \Leftrightarrow \quad f'(x) = k \cdot f'(x)$$

$$\frac{d}{dx} k \cdot f(x) = k \cdot f'(x)$$

Differentialkvotient af en funktion multipliceret med en konstant

$$h(x) = f(x) + g(x) \quad \Leftrightarrow \quad h'(x) = f'(x) + g'(x)$$

$$\frac{d}{dx} f(x) + g(x) = f'(x) + g'(x)$$

Differentialkvotient af summen af to (eller flere) led

$$h(x) = f(x) - g(x) \quad \Leftrightarrow \quad h'(x) = f'(x) - g'(x)$$

$$\frac{d}{dx} f(x) - g(x) = f'(x) - g'(x)$$

Differentialkvotient af differensen af to (eller flere) led

$$h(x) = f(x) \cdot g(x) \quad \Leftrightarrow \quad h'(x) = f'(x) \cdot g(x) + g'(x) \cdot f(x)$$

$$\frac{d}{dx} f(x) \cdot g(x) = f'(x) \cdot g(x) + g'(x) \cdot f(x)$$

Differentialkvotient af en produktfunktion

$$h(x) = \frac{f(x)}{g(x)} \quad \Leftrightarrow \quad h'(x) = \frac{f'(x) \cdot g(x) - g'(x) \cdot f(x)}{(g(x))^2}$$

$$\frac{d}{dx} \frac{f(x)}{g(x)} = \frac{f'(x) \cdot g(x) - g'(x) \cdot f(x)}{(g(x))^2}$$

Differentialkvotient af en brøkfunktion

$$h(x) = f(g(x)) \quad \Leftrightarrow \quad h'(x) = f'(g(x)) \cdot g'(x)$$

$$\frac{d}{dx} f(g(x)) = f'(g(x)) \cdot g'(x)$$

Differentialkvotient af en sammensat funktion (Kædereglen)