

DÉRIVÉES : FORMULAIRE

Formules générales¹

$$\begin{aligned}(f(x) \pm g(x))' &= f'(x) \pm g'(x) \\ (f(x).g(x))' &= f'(x)g(x) + f(x)g'(x) \\ \left(\frac{f(x)}{g(x)}\right)' &= \frac{f'(x)g(x) - f(x)g'(x)}{g(x)^2} \\ (kf(x))' &= kf'(x)\end{aligned}$$

Formules particulières²

$$\begin{aligned}(k)' &= 0 \\ (x)' &= 1 \\ (x^n)' &= nx^{n-1} & (f(x)^n)' &= nf(x)^{n-1}f'(x) \\ (\sqrt{x})' &= \frac{1}{2\sqrt{x}} & (\sqrt{f(x)})' &= \frac{f'(x)}{2\sqrt{f(x)}} \\ \left(\frac{1}{x}\right)' &= -\frac{1}{x^2} & \left(\frac{1}{f(x)}\right)' &= -\frac{f'(x)}{f^2(x)} \\ (\cos x)' &= -\sin x & (\cos f(x))' &= -\sin f(x)f'(x) \\ (\sin x)' &= \cos x & (\sin f(x))' &= \cos f(x)f'(x) \\ (\tan x)' &= \frac{1}{\cos^2 x} & (\tan f(x))' &= \frac{f'(x)}{\cos^2 f} \\ (\cot x)' &= -\frac{1}{\sin^2 x} & (\cot f(x))' &= -\frac{f'(x)}{\sin^2 f} \\ (\arcsin x)' &= \frac{1}{\sqrt{1-x^2}} & (\arcsin f(x))' &= \frac{f'(x)}{\sqrt{1-f^2(x)}} \\ (\arccos x)' &= -\frac{1}{\sqrt{1-x^2}} & (\arccos f(x))' &= -\frac{f'(x)}{\sqrt{1-f^2(x)}} \\ (\arctan x)' &= \frac{1}{1+x^2} & (\arctan f(x))' &= \frac{f'(x)}{1+f^2(x)} \\ (\ln x)' &= \frac{1}{x} & (\ln f(x))' &= \frac{f'(x)}{f(x)} \\ (\log_a x)' &= \frac{1}{x \cdot \ln a} & (\log_a f(x))' &= \frac{f'(x)}{f(x) \cdot \ln a} \\ (e^x)' &= e^x & (e^{f(x)})' &= e^{f(x)} \cdot f'(x) \\ (a^x)' &= a^x \cdot \ln a & (a^{f(x)})' &= a^{f(x)} \cdot \ln a \cdot f'(x)\end{aligned}$$

1. k est une constante

2. k est une constante