Dérivées : formulaire

Formules générales

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

Formules particulières

$(k)' = 0$

$(x)' = 1$

$(x^n)' = nx^{n-1}$ $\qquad$ $(f(x)^n)' = nf(x)^{n-1}f(x)'$

$(\sqrt{x})' = \dfrac{1}{2\sqrt{x}}$ $\qquad$ $\left(\sqrt{f(x)}\right)' = \dfrac{f(x)'}{2\sqrt{f(x)}}$

$\left(\dfrac{1}{x}\right)' = -\dfrac{1}{x^2}$ $\qquad$ $\left(\dfrac{1}{f(x)}\right)' = -\dfrac{f(x)'}{f^2(x)}$

$(\cos x)' = -\sin x$ $\qquad$ $(\cos f(x))' = -\sin f(x)f(x)'$

$(\sin x)' = \cos x$ $\qquad$ $(\sin f(x))' = \cos f(x)f(x)'$

$(\tan x)' = \dfrac{1}{\cos^2 x}$ $\qquad$ $(\tan f(x))' = \dfrac{f(x)'}{\cos^2 f}$

$(\cot x)' = -\dfrac{1}{\sin^2 x}$ $\qquad$ $(\cot f(x))' = -\dfrac{f(x)'}{\sin^2 f}$

$(\arcsin x)' = \dfrac{1}{\sqrt{1-x^2}}$ $\qquad$ $(\arcsin f(x))' = \dfrac{f(x)'}{\sqrt{1-f^2(x)}}$

$(\arccos x)' = -\dfrac{1}{\sqrt{1-x^2}}$ $\qquad$ $(\arccos f(x))' = -\dfrac{f(x)'}{\sqrt{1-f^2(x)}}$

$(\arctan x)' = \dfrac{1}{1+x^2}$ $\qquad$ $(\arctan f(x))' = \dfrac{f(x)'}{1+f^2(x)}$

$(\ln x)' = \dfrac{1}{x}$ $\qquad$ $(\ln f(x))' = \dfrac{f(x)'}{f(x)}$

$(\log_a x)' = \dfrac{1}{x.\ln a}$ $\qquad$ $(\log_a f(x))' = \dfrac{f(x)'}{f(x).\ln a}$

$(e^x)' = e^x$ $\qquad$ $(e^{f(x)})' = e^{f(x)}.f(x)'$

$(a^x)' = a^x.\ln a$ $\qquad$ $(a^{f(x)})' = a^{f(x)}.\ln a.f(x)'$