Formules de Dérivation :

$(k)' = 0$ pour toute constante $k \in \mathbb{R}$	$(\sin x)' = \cos x$ $(\tan x)' = 1 + \cos^2 x$
$(x)' = 1$, $(x^2)' = 2x$, $(x^3)' = 3x^2$	$(\cos x)' = -\sin x$
$\left(\frac{1}{x}\right)' = -\frac{1}{x^2} \Leftrightarrow (x^{-1})' = -1(x^{-2}) = -\frac{1}{x^2}$	$(\tan x)' = 1 + \tan^2 x = \frac{1}{\cos^2 x}$
$(\sqrt{x})' = \frac{1}{2\sqrt{x}} \Leftrightarrow (x^{1/2})' = \frac{1}{2}(x^{-1/2}) = \frac{1}{2\sqrt{x}}$	$(\ln x)' = \frac{1}{x}$, $(\ln \lvert x\rvert)' = \frac{1}{x}$
Généralisation : $(x^p)' = px^{p-1}$ $\forall p \in \mathbb{Q}$	$(e^x)' = e^x$, $(a^x)' = a^x.\ln a$ pour $a > 0$

$(\lambda u)' = \lambda u'$, pour tout $\lambda \in \mathbb{R}$	$(3x^2)' = 3(x^2)' = 3(2x) = 6x$
$(u + v)' = u' + v'$	$(x^3 - 5x^2) = (x^3)' - 5(x^2)' = 3x^2 - 10x$
$(uv)' = u'v + uv'$	$(x \sin x)' = 1.\sin x + x.\cos x = \sin x + x.\cos x$
$\left(\frac{u}{v}\right)' = \frac{u'v - v'u}{v^2}$	$\left(\frac{2x-3}{x+2}\right)' = \frac{2(x+2) - 1.(2x-3)}{(x+2)^2} = \frac{7}{(x+2)^2}$
$(v \circ u)' = (v[u])' = v'[u] \times u'$.	$(\cos^3 x)' = [(\cos x)^3]' = 3[(\cos x)^2].(-\sin x) = -3\sin x.\cos^2 x$

Compositions de Fonctions : $(v \circ u)'$

$(u^n)' = nu^{n-1}$. $\boldsymbol{u'}$ $\forall n \in \mathbb{N}$	$(\sin^3 x)' = 3(\sin^2 x)(\sin x)' = 3\sin^2 x.\cos x$
$\left(\frac{1}{u}\right)' = -\frac{\boldsymbol{u'}}{u^2} \Leftrightarrow (u^{-1})' = -1(u^{-2}).\boldsymbol{u'} = -\frac{\boldsymbol{u'}}{u^2}$	$\left(\frac{1}{\ln x}\right)' = -\frac{(\ln x)'}{(\ln x)^2} = -\frac{\frac{1}{x}}{\ln^2 x} = -\frac{1}{x.\ln^2 x}$
$(\sqrt{u})' = \frac{\boldsymbol{u'}}{2\sqrt{u}} \Leftrightarrow (u^{1/2})' = \frac{1}{2}(x^{-1/2}) = \frac{\boldsymbol{u'}}{2\sqrt{u}}$	$(\sqrt{3x^2 + x + 1})' = \frac{(3x^2 + x + 1)'}{2\sqrt{3x^2 + x + 1}} = \frac{6x + 1}{\sqrt{3x^2 + x + 1}}$
$(\sin u)' = \boldsymbol{u'}.\cos u$, $(\cos u)' = -\boldsymbol{u'}.\sin u$ $(\tan u)' = \boldsymbol{u'}(1 + \tan^2 u) = \frac{\boldsymbol{u'}}{\cos^2 u}$	$[\cos(2x - \frac{\pi}{3})]' = -(2x - \frac{\pi}{3})'.\sin(2x - \frac{\pi}{3}) = -2.\sin(2x - \frac{\pi}{3})$
$(\ln \lvert u\rvert)' = \frac{\boldsymbol{u'}}{u}$ $(e^u)' = \boldsymbol{u'}.e^u$	$[\ln(x^2 + 3x + 1)]' = \frac{(x^2 + 3x + 1)'}{3x^2 + 3x + 1} = \frac{2x + 3}{3x^2 + 3x + 1}$ $(e^{1/x})' = \left(\frac{1}{x}\right)'. e^{1/x} = -\frac{1}{x^2} . e^{1/x}$