

# FORMULAIRE DE PRIMITIVATION

Fonction	Primitive	Ensemble de primitivation
$x^n \quad (n \in \mathbb{N})$	$\frac{x^{n+1}}{n+1}$	$\mathbb{R}$
$\frac{1}{x}$	$\ln x $	$\mathbb{R}^*$
$\frac{1}{x^n} \quad (n \geq 2)$	$-\frac{1}{(n-1)x^{n-1}}$	$\mathbb{R}^*$
$x^\alpha \quad (\alpha \neq -1)$	$\frac{x^{\alpha+1}}{\alpha+1}$	$\mathbb{R}_+^*$
$\ln x$	$x \ln x - x$	$\mathbb{R}_+^*$
$e^x$	$e^x$	$\mathbb{R}$
$\cos x$	$\sin x$	$\mathbb{R}$
$\sin x$	$-\cos x$	$\mathbb{R}$
$\tan x$	$-\ln \cos x $	$\mathbb{R} \setminus \left\{ \frac{\pi}{2} + k\pi : k \in \mathbb{Z} \right\}$
$1 + \tan^2 x = \frac{1}{\cos^2 x}$	$\tan x$	$\mathbb{R} \setminus \left\{ \frac{\pi}{2} + k\pi : k \in \mathbb{Z} \right\}$
$\frac{1}{\sqrt{1-x^2}}$	$\arcsin x \quad \text{ou} \quad -\arccos x$	$] -1; 1 [$
$\frac{1}{1+x^2}$	$\arctan x$	$\mathbb{R}$
$\operatorname{ch} x$	$\operatorname{sh} x$	$\mathbb{R}$
$\operatorname{sh} x$	$\operatorname{ch} x$	$\mathbb{R}$
$1 - \operatorname{th}^2 x = \frac{1}{\operatorname{ch}^2 x}$	$\operatorname{th} x$	$\mathbb{R}$

$$\int u' u^{n-1} = \frac{u^n}{n} \quad \int \frac{u'}{\sqrt{u}} = 2\sqrt{u} \quad \int \frac{u'}{u^{n+1}} = -\frac{1}{n} \frac{1}{u^n} \quad (n \in \mathbb{N}^*)$$

$$\int \frac{u'}{u} = \ln|u| \quad \int u' e^u = e^u$$

$$\int u' \cos u = \sin u \quad \int u' \sin u = -\cos u$$

$$\int \frac{u'}{\sqrt{1-u^2}} = \arcsin u \quad \int \frac{u'}{1+u^2} = \arctan u$$