PRIMITIVES USUELLES

On pose $P = \frac{\pi}{2} + \pi\mathbf{Z}$ et $Q = \pi\mathbf{Z}$.

Fonctions		*Primitives*	*Intervalles*
$(x-c)^n$	$c \in \mathbf{C}$ $n \in \mathbf{Z}-\{-1\}$	$\frac{(x-c)^{n+1}}{n+1}$	$\mathbf{R}$
$(x-a)^\alpha$	$a \in \mathbf{R}$ $\alpha \in \mathbf{R}-\{-1\}$	$\frac{(x-a)^{\alpha+1}}{\alpha+1}$	$]a, +\infty[$
$\frac{1}{x-a}$	$a \in \mathbf{R}$	$\ln \lvert x-a \rvert$	$\mathbf{R}-\{a\}$
$\frac{1}{x-c}$	$c=a+ib$ $a \in \mathbf{R}, b \in \mathbf{R}^*$	$\begin{cases} \ln \lvert x-c \rvert + i \operatorname{Arg}(x-c) \\ = \frac{1}{2} \ln [(x-a)^2+b^2] \\ + i \operatorname{Arc\,tg} \frac{x-a}{b} \end{cases}$	$\mathbf{R}$
$\ln x$		$x(\ln x - 1)$	$\mathbf{R}_+^*$
e^{cx}	$c \in \mathbf{C}^*$	$\frac{e^{cx}}{c}$	$\mathbf{R}$
$\operatorname{ch} x$		$\operatorname{sh} x$	$\mathbf{R}$
$\operatorname{sh} x$		$\operatorname{ch} x$	$\mathbf{R}$
$\cos x$		$\sin x$	$\mathbf{R}$
$\sin x$		$-\cos x$	$\mathbf{R}$
$\operatorname{th} x$		$\ln(\operatorname{ch} x)$	$\mathbf{R}$
$\operatorname{coth} x$		$\ln \lvert \operatorname{sh} x \rvert$	$\mathbf{R}^*$
$\operatorname{tg} x$		$-\ln \lvert \cos x \rvert$	$\mathbf{R}-P$
$\cot x$		$\ln \lvert \sin x \rvert$	$\mathbf{R}-Q$
$\frac{1}{\operatorname{ch}^2 x}$		$\operatorname{th} x$	$\mathbf{R}$
$\frac{1}{\operatorname{sh}^2 x}$		$-\operatorname{coth} x$	$\mathbf{R}^*$
$\frac{1}{\cos^2 x}$		$\operatorname{tg} x$	$\mathbf{R}-P$

PRIMITIVES USUELLES (fin)

Fonctions		*Primitives*	*Intervalles*
$\dfrac{1}{\sin^2 x}$		$-\cot x$	$\mathbf{R}-Q$
$\dfrac{1}{\operatorname{ch} x}$		$\begin{cases} 2 \operatorname{Arc tg} e^x \\ 2 \operatorname{Arc tg} \operatorname{th} \dfrac{x}{2} = \operatorname{Arc tg} \operatorname{sh} x \end{cases}$	$\mathbf{R}$
$\dfrac{1}{\operatorname{sh} x}$		$\ln \left\| \operatorname{th} \dfrac{x}{2} \right\|$	$\mathbf{R}^*$
$\dfrac{1}{\cos x}$		$\ln \left\| \operatorname{tg} \left(\dfrac{x}{2} + \dfrac{\pi}{4} \right) \right\|$	$\mathbf{R}-P$
$\dfrac{1}{\sin x}$		$\ln \left\| \operatorname{tg} \dfrac{x}{2} \right\|$	$\mathbf{R}-Q$
$\dfrac{1}{1+x^2}$		$\operatorname{Arc tg} x$	$\mathbf{R}$
$\dfrac{1}{a^2+x^2}$	$a \in \mathbf{R}_+^*$	$\dfrac{1}{a} \operatorname{Arc tg} \dfrac{x}{a}$	$\mathbf{R}$
$\dfrac{1}{1-x^2}$		$\begin{cases} \operatorname{Arg th} x \\ \dfrac{1}{2} \ln \left\| \dfrac{1+x}{1-x} \right\| \end{cases}$	$]-1, 1[$ $\mathbf{R}-\{-1, 1\}$
$\dfrac{1}{a^2-x^2}$	$a \in \mathbf{R}_+^*$	$\dfrac{1}{2a} \ln \left\| \dfrac{a+x}{a-x} \right\|$	$\mathbf{R}-\{-a, a\}$
$\dfrac{1}{\sqrt{1-x^2}}$		$\operatorname{Arc sin} x = \dfrac{\pi}{2} - \operatorname{Arc cos} x$	$]-1, 1[$
$\dfrac{1}{\sqrt{a^2-x^2}}$	$a \in \mathbf{R}_+^*$	$\operatorname{Arc sin} \dfrac{x}{a}$	$]-a, a[$
$\dfrac{1}{\sqrt{1+x^2}}$		$\operatorname{Arg sh} x = \ln (x + \sqrt{x^2+1})$	$\mathbf{R}$
$\dfrac{1}{\sqrt{a^2+x^2}}$	$a \in \mathbf{R}_+^*$	$\ln (x + \sqrt{x^2+a^2})$	$\mathbf{R}$
$\dfrac{1}{\sqrt{x^2-1}}$		$\begin{cases} \operatorname{Arg ch} x \\ -\operatorname{Arg ch} (-x) \\ \ln \lvert x + \sqrt{x^2-1} \rvert \end{cases}$	$]1, +\infty[$ $]-\infty, -1[$ $\mathbf{R}-[-1, 1]$
$\dfrac{1}{\sqrt{x^2-a^2}}$	$a \in \mathbf{R}_+^*$	$\ln \lvert x + \sqrt{x^2-a^2} \rvert$	$\mathbf{R}-[-a, a]$