

Les fonctions usuelles

<u>f(x):</u>	<u>D_f:</u>	<u>D'_f:</u>	<u>A_f:</u>	<u>f(x):</u>	<u>Limite:</u>	<u>Variations:</u>	<u>Graphie:</u>	<u>Parité:</u>	<u>Période:</u> <u>cite:</u>
<u>Logarithme:</u>	$\mathbb{R}^+$	$\mathbb{R}^+$	$\mathbb{R}$	$\frac{1}{x}$	$\lim_{x \rightarrow +\infty} \ln(x) = +\infty$ $\lim_{x \rightarrow 0^+} \ln(x) = -\infty$	$\begin{array}{c c} x & 0 \quad +\infty \\ \ln & -\infty \quad +\infty \end{array}$			
<u>Puissance:</u>	$\mathbb{R}^+$	$\mathbb{R}^+$	$\mathbb{R}^+$	ax^{a-1}	$\lim_{x \rightarrow +\infty} x^a = \begin{cases} +\infty & \text{si } a > 0 \\ 0 & \text{si } a < 0 \end{cases}$ $\lim_{x \rightarrow 0^+} x^a = \begin{cases} 0 & \text{si } a > 0 \\ +\infty & \text{si } a < 0 \end{cases}$	$\begin{array}{c c} x & 0 \quad +\infty \\ \text{Pos} & 0 \quad +\infty \end{array} \quad \begin{array}{c c} x & 0 \quad +\infty \\ \text{Neg} & +\infty \quad 0 \end{array}$		$\cos \alpha > 0$ $\cos \alpha = 1$ $\cos 0 < \alpha < 1$ $\cos \alpha < 0$	
<u>Valeur absolue:</u>	$\mathbb{R}$	$\mathbb{R}^+$	$\mathbb{R}^+$	$ x $	$\lim_{x \rightarrow +\infty} x = +\infty$ $\lim_{x \rightarrow -\infty} x = +\infty$	$\begin{array}{c c} x & -\infty \quad 0 \quad +\infty \\ x & +\infty \quad 0 \quad +\infty \end{array}$		Pair	
<u>Sin:</u>	$\mathbb{R}$	$\mathbb{R}$	$[-1, 1]$	$\sin(x)$	$\sin(0) = 0$ $\sin(\frac{\pi}{2}) = 1$ $\sin(\pi) = 0$ $\sin(\frac{3\pi}{2}) = -1$ $\sin(2\pi) = 0$	$\begin{array}{c c} x & 0 \quad \frac{\pi}{2} \quad \pi \\ \sin & 0 \quad 1 \quad 0 \end{array}$		Impair	2π
<u>Cos:</u>	$\mathbb{R}$	$\mathbb{R}$	$[-1, 1]$	$-\sin(x)$	$\cos(0) = 1$ $\cos(\frac{\pi}{2}) = 0$ $\cos(\pi) = -1$ $\cos(\frac{3\pi}{2}) = 0$ $\cos(2\pi) = 1$	$\begin{array}{c c} x & 0 \quad \pi \\ \cos & 1 \quad -1 \end{array}$		Pair	2π
<u>Tan:</u>	$\mathbb{R} \setminus \{\frac{\pi}{2} + k\pi, k \in \mathbb{Z}\}$	$\mathbb{R}$	$\frac{1}{\cos^2 x}$	$\tan(x)$	$\lim_{x \rightarrow \frac{\pi}{2}^-} \tan(x) = +\infty$ $\lim_{x \rightarrow \frac{\pi}{2}^+} \tan(x) = -\infty$ $\tan(0) = 0$ $\tan(\frac{\pi}{4}) = 1$	$\begin{array}{c c} x & 0 \quad \frac{\pi}{2} \\ \tan & 0 \quad +\infty \end{array}$		Impair	π
<u>arctan:</u>	$\mathbb{R}$	$\mathbb{R}$	$]-\frac{\pi}{2}, \frac{\pi}{2}[$	$\frac{1}{1+x^2}$	$\arctan(0) = 0$ $\lim_{x \rightarrow +\infty} \arctan(x) = \frac{\pi}{2}$ $\lim_{x \rightarrow -\infty} \arctan(x) = -\frac{\pi}{2}$	$\begin{array}{c c} x & -\infty \quad +\infty \\ \arctan & -\frac{\pi}{2} \quad \frac{\pi}{2} \end{array}$		Impair	