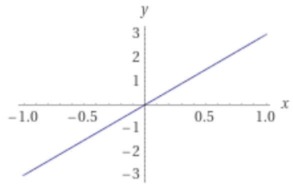
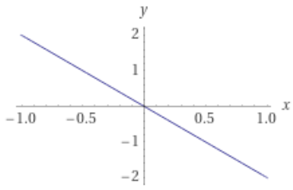
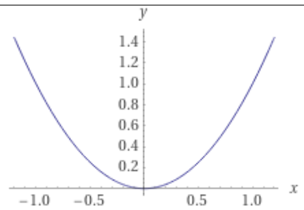
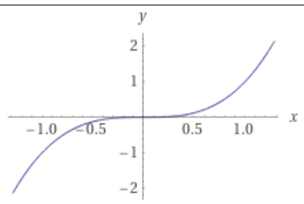
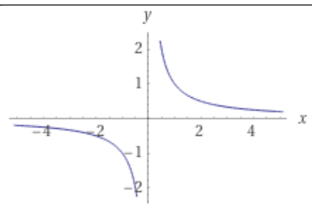
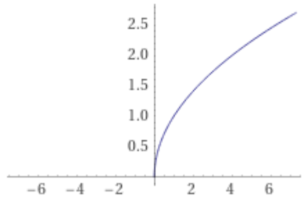
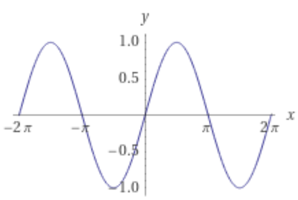
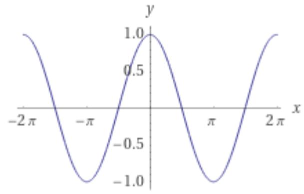
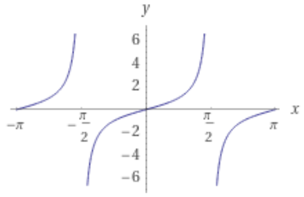
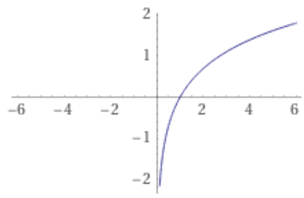
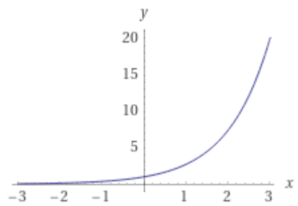
CORRECTION DE L'EXERCICE 15 DU TD 4

L'outil qui permet de tout visualiser : WolframAlpha.

Fonction	Domaine de définition $\mathcal{D}_f$	Dérivée $f'(x)$	Allure du graphe	Remarques diverses
$f(x) = ax$	$\mathbb{R}$	a	 	$f(0) = 0$
$f(x) = x^2$	$\mathbb{R}$	$2x$		$f(0) = 0$ et pour tout $x \in \mathcal{D}_f$, $f(x) = f(-x)$
$f(x) = x^3$	$\mathbb{R}$	$3x^2$		$f(0) = 0$ et pour tout $x \in \mathcal{D}_f$, $f(-x) = -f(x)$
$f(x) = \frac{1}{x}$	$\mathbb{R}^*$	$-\frac{1}{x^2}$		Pour tout $x \in \mathcal{D}_f$, $f(-x) = -f(x)$
$f(x) = \sqrt{x}$	$\mathbb{R}^+$	$\frac{1}{2\sqrt{x}}$		$f(0) = 0$ et $f(1) = 1$
$f(x) = \sin x$	$\mathbb{R}$	$\cos x$		Pour tout $x \in \mathcal{D}_f$ et tout $k \in \mathbb{Z}$, $f(x + 2k\pi) = f(x)$

Fonction	Domaine de définition $\mathcal{D}_f$	Dérivée $f'(x)$	Allure du graphe	Remarques diverses
$f(x) = \cos x$	$\mathbb{R}$	$-\sin x$		Pour tout $x \in \mathcal{D}_f$ et tout $k \in \mathbb{Z}$, $f(x+2k\pi) = f(x)$
$f(x) = \tan x$	$\mathbb{R}\backslash\{\frac{\pi}{2}+k\pi, k \in \mathbb{Z}\}$	$1+\tan^2 x = \dfrac{1}{\cos^2 x}$		Pour tout $x \in \mathcal{D}_f$ et tout $k \in \mathbb{Z}$, $f(x) = f(x+\pi)$ $f(-x) = -f(x)$
$f(x) = \ln x$	$\mathbb{R}_+^*$	$\dfrac{1}{x}$		$f(1) = 0$
$f(x) = \exp x$	$\mathbb{R}$	$\exp x$		$f(0) = 1$