Analyse I (Partie B) : Définitions des limites

- $\lim\limits_{x \to +\infty} f(x) = +\infty \iff \forall R > 0, \exists B > 0, \forall x \geq B, f(x) \geq R$
- $\lim\limits_{x \to -\infty} f(x) = -\infty \iff \forall R > 0, \exists A < 0, \forall x \leq A, f(x) \leq R$
- Soit $\lambda \in \mathbb{R}$, $\lim\limits_{x \to +\infty} f(x) = \lambda \iff \forall \varepsilon > 0, \exists A > 0, \forall x \geq A, |f(x) + \lambda| \leq \varepsilon$
- Soit $\lambda \in \mathbb{R}$, $\lim\limits_{x \to -\infty} f(x) = \lambda \iff \forall \varepsilon > 0, \exists B < 0, \forall x \leq B, |f(x) + \lambda| \leq \varepsilon$
- Soit $a \in \mathbb{R}$, $\lim\limits_{x \to a} f(x) = +\infty \iff \forall R > 0, \exists \delta > 0, \forall x \in \mathbb{R}, |x - a| \leq \delta \Rightarrow f(x) \geq R$
- Soit $a \in \mathbb{R}$, $\lim\limits_{x \to a} f(x) = -\infty \iff \forall R > 0, \exists \delta > 0, \forall x \in \mathbb{R}, |x - a| \leq \delta \Rightarrow f(x) \leq R$
- Soient $a, \lambda \in \mathbb{R}$, $\lim\limits_{x \to a} f(x) = \lambda \iff \forall \varepsilon > 0, \exists \delta > 0, \forall x \in \mathbb{R}, |x - a| \leq \delta \Rightarrow |f(x) - \lambda| \leq \varepsilon$