## Section 5.1 Continuous Functions

Let $A \subseteq \mathbb{R}, f: A \rightarrow \mathbb{R}, c \in A$. Then $f$ is continuous at $c$ if $\forall \epsilon>0, \exists \delta(c, \epsilon)>0$ such that $|f(x)-f(c)|<\epsilon$ if $|x-c|<\delta$.

Let $f: A \rightarrow \mathbb{R}$. If $B \subseteq A$, then $f$ is continuous on $B$ if $f$ is continuous at every point of $B$.

Sequential Criterion for Continuity $f: A \rightarrow \mathbb{R}$ is continuous at $c \in A$ if and only if for every sequence $\left(x_{n}\right)$ in $A$ that converges to $c,\left(f\left(x_{n}\right)\right)$ converges to $f(c)$.

