The most important ϵ-ish definitions
Math 131A and 131B

	Applies to:	Definition
$\sup S = U$	Nonempty $S \subseteq \mathbf{R}$	1. U is an upper bound for S (i.e., for all $x \in S$, $x \leq U$); and 2. If v is a upper bound for S, then $U \leq v$.
$\lim_{n\to\infty} a_n = L$	Sequence a_n	For every $\epsilon > 0$, there exists $N(\epsilon)$ such that if $n > N(\epsilon)$, then $d(a_n, L) < \epsilon$.
f continuous at a (ϵ-δ)	Function $f : X \to \mathbf{C}$	For every $\epsilon > 0$, there exists $\delta(\epsilon)$ such that if $d(x, a) < \delta(\epsilon)$, then $d(f(x), f(a)) < \epsilon$.
f continuous at a (sequential)	Function $f : X \to \mathbf{C}$	For every sequence x_n in X, if $\lim_{n\to\infty} x_n = a$, then $\lim_{n\to\infty} f(x_n) = f(a)$.
f_n converges to f pointwise	Sequence f_n $f_n, f : X \to \mathbf{C}$	For every $x \in X$ and every $\epsilon > 0$, there exists $N(\epsilon, x)$ such that if $n > N(\epsilon, x)$, then $d(f_n(x), f(x)) < \epsilon$.
f_n converges to f uniformly	Sequence f_n $f_n, f : X \to \mathbf{C}$	For every $\epsilon > 0$, there exists $N(\epsilon)$ such that for every $x \in X$, if $n > N(\epsilon)$, then $d(f_n(x), f(x)) < \epsilon$.

Note: For each of the $d(a, b)$ occurring above, if $a, b \in \mathbf{C}$, then $d(a, b) = |a - b|$; otherwise, $d(a, b)$ depends on the metric chosen for the space in which both a and b lie.