Definition MunkTop.21.1: If (X, T) is a topological space and $x \in X$ then X has a countable basis at x if and only if there exists f such that f is a function from $\mathbb{N}$ to T, and for every U such that U is a neighborhood of x in (X, T), we have that there exists $n \in \mathbb{N}$ such that $f(n) \subseteq U$.

Definition MunkTop.21.2: If (X, T) is a topological space then (X, T) is *first countable* if and only if for every $x \in X$, X has a countable basis at x.

Definition MunkTop.21.3: If (X, T) is a topological space and Y is a metric space and F is a function and the domain of F equals $\mathbb{N}$ and for every $n \in \mathbb{N}$, $F(n)$ is a function from X to Y then $(F(n))_{n=0}^{\infty}$ *uniformly converges* to f if and only if for every $\varepsilon \in \mathbb{R}$, if $\varepsilon > 0$ then there exists $N \in \mathbb{N}$ such that for every $n > N$, for every $x \in X$, $d([F(n)](x), f(x)) < \varepsilon$.