Definition MunkTop.18.1: If (X, T) and (Y, T') are topological spaces and f is in the set of maps from X to Y then f is *continuous* if and only if for every $V \in T'$, the range of the converse relation to f when restricted to V is in T.

Definition MunkTop.18.2: If (X, T) and (Y, T') are topological spaces and f is in the set of maps from X to Y and $x \in X$ then f is *continuous* at x if and only if for every V, if V is a neighborhood of $f(x)$ in (Y, T') then there exists U such that U is a neighborhood of x in (X, T) and the range of f when restricted to U is contained in V.

Definition MunkTop.18.3: If (X, T) and (Y, T') are topological spaces and f is a bijection from X to Y then f is a *homeomorphism* if and only if f and the converse relation to f are continuous.

Definition MunkTop.18.3.5: If (X, T) and (Y, T') are topological spaces then (X, T) is homeomorphic to (Y, T') if and only if there exists f such that f is a homeomorphism.

Definition MunkTop.18.4: If (X, T) and (Y, T') are topological spaces and f is an injection from X to Y and f is continuous then f is an *imbedding* if and only if f is a homeomorphism.