Properties of Compact Spaces

- **Proposition:** If X is T_2 and $F \subset X$ is a compact set with $x \notin F$ there are open disjoint sets U and V such that $x \in U$ and $F \subset V$.
- **Corollary:** Every compact subset of a Hausdorff space is closed.
- **Proposition:** Every compact T_2 space is T_4.

Properties Continuous Functions of Compact Spaces

- **Proposition:** Let $f : X \to Y$ continuous and assume X is compact then $f(X)$ is also compact.
- **Corollary:** If X is compact then $BC(X) = C(X)$.
- **Proposition:** If X is compact and Y is T_2 then every continuous bijection $f : X \to Y$ is a homeomorphism.