|  |
| --- |
| Math 373: Sheet #2 |

1. Let be compact Hausdorff space. Prove that it is normal.
2. Let be compact and be Hausdorff. Show that if , then .
3. Let and be compact Hausdorff spaces. Prove that is continuous function if and only if for each compact subset , is compact in .
4. Prove that the following properties are equivalent:
5. The space is Hausdorff.
6. The diagonal is a closed subset of the product
7. Show that a finite subset of a -space has no limit points.
8. Show that any infinite subset of a discrete topological space is not compact.
9. Suppose is Hausdorff and is finite. Then is the discrete topology.