

Topology I, Newberger, Spring 2005

Homework: Sections 17 and 18. Due Thursday, March 3rd.

Follow the instructions carefully. Write your answer so that I do not have to look up the problems in the book *or on the assignment* in order to understand your responses. It is sufficient but not necessary for you to copy the problems onto your homework to achieve this.

- I. Read the section on Hausdorff spaces beginning on page 96. Memorize the definitions of Hausdorff and T1 (for T1, know the definition in the book that a topological space is T1 if that finite sets of points are closed).
- II. A. Write the definition of Hausdorff. Explain what you have to do to prove that a space is Hausdorff. By this I mean explain how will your proof begin, and what will you show.
B. (10 points each) Do numbers 11 and 12 on page 101.
- III. A. Memorize the definition of continuity for topological spaces. Memorize the equivalent definitions given in Theorem 18.1
B.
 - i. Read problems 11 and 12 on page 112. Write a few sentences explaining what the author is showing us by listing these two problems side by side.
 - ii. Do problem 11 on page 112.
C. (10 points) Do problem 12 on page 112.