

Homework 1

Real Analysis

Math 212a – Harvard University – Fall 1998

Due Friday, 25 September 1998

Do the following problems from Royden:

Chapter 1: 20, 32.

Chapter 2: 37, 38, 39, 43, 48, 50, 53.

In addition:

1. Let $(X, <)$ be a partially ordered set. Show that $<$ can be extended to a total ordering of X : i.e. there is a total ordering (X, \ll) such that $x \ll y$ if $x < y$.
2. Construct a homeomorphism from $[0, 1] \cap \mathbb{Q}$ to $(0, 1) \cap \mathbb{Q}$.