

# Math 206, Fall 2024 — Homework 4

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Due October 4 at 5:00 pm

**Instructions.** This problem set contains problems from Week 4 of class. The problem numbers refer to our textbook, *Reading, Writing, and Proving* by Ulrich Daepf and Pam Gorkin.

**Problem 1.** Do the following textbook problems: Problems 7.13, 7.17, 8.6, 8.7, 8.9, 8.14.

**Problem 2.** Let  $a, b \in \mathbb{R}$  be given real numbers such that  $a < b$ . Prove that  $(a, b)$  is an open set.

**Problem 3.** Prove that  $\mathbb{R}$  is an open set.

**Problem 4.** Prove that  $[0, 1)$  is not an open set.