Math 206, Fall 2024 — Homework 1

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Due September 13 at 5:00 pm

Instructions. This problem set contains problems from Week 1 of class. The problem numbers refer to our textbook, *Reading, Writing, and Proving* by Ulrich Daepp and Pam Gorkin.

Problem 1. Do the following textbook problems: Problem 2.5, 2.7, 2.8, 2.12

Problem 2. Use truth tables and a sentence or two to explain why $P \implies Q$ is logically equivalent to $Q \vee \neg P$.

Problem 3. Write the following statements as implications of the form "if P then Q."

1. The product of two rational numbers is rational.
2. A series diverges whenever the limit of its terms is non-zero.
3. I go grocery shopping or my refrigerator is not empty.