

You may turn this homework in physically or electronically. To submit it physically, hand in a copy at the start of class before the weekly quiz. To submit electronically, please email a PDF (**not** a Word document!) to the course grader, Yue Zhao, at [zhaoy28@uw.edu](mailto:zhaoy28@uw.edu).

The homework problems are from Sundstrom's *Mathematical Reasoning*, available here:  
<https://scholarworks.gvsu.edu/books/9/>

Throughout the course, you should imagine that you are writing your proofs so that they can be understood by someone who is also taking Math 300 at the same time. For the problems from Chapters 2.3 and 2.4, your solutions should be informal explanations. For the proofs using the axioms handout, you should write two-column proofs.

For this assignment, please solve:

- Chapter 2.3, pages 61-62, problems 5bd and 6.
- Chapter 2.4, pages 74-78, problems 3bdf, 4, 5, and 8.
- Using the axioms on the [Axioms handout](#), prove the following statements:
  1. For every real number  $a$ ,  $0a = 0$ .
  2. For every real number  $a$ ,  $(-1)a = -a$ .
  3. For all real numbers  $a$  and  $b$ ,  $(-a)(-b) = ab$ .

For extra practice, I recommend completing the progress checks in chapters 2.3, 2.4, and 3.1. (Don't hand in the progress checks. Just think about the problems on your own. You can look up solutions in the back of the book.)