

PROBLEM SET #6

MA 109A: INTRODUCTION TO GEOMETRY AND TOPOLOGY

Due on Friday November 21, 2025

(Last modified November 14, 2025)

(25 points in total)

Solve the following problems from the textbook *Topology, second edition* by J. Munkres.

You may only use the relevant course material described below.

- (1) (5 points) Chapter 7, section 44, exercise 2
- (2) (10 points) Chapter 7, section 45, exercise 7
- (3) (5 points) Chapter 7, section 46, exercise 6
- (4) (5 points) Chapter 7, section 47, exercise 5

Relevant course material for this homework: Up to section 47 of Munkres.

You may not search the solutions to the homework problems from any source. Please do not consult Large Language Models and please write the homework in your own words, as that is the best way to learn. If you collaborated with other students, please list their names on the solutions.