

PROBLEM SET #4

MA 109C: INTRODUCTION TO GEOMETRY AND TOPOLOGY

Due on Friday May 15, 2024

The exercise numbers refer to the textbook *Differential Topology* by V. Guillemin and A. Pollack.

- (1) Exercises 2.5.1, 2.5.2, 2.5.3
- (2) Exercises 3.3.1, 3.3.14¹
- (3) Exercises 3.4.7, 3.4.8, 3.4.11

I strongly recommend that you solve, but not submit solutions for, the following additional problems.

- Exercise 2.4.14 (you do not need to show the part after “However, ...”.)
- Exercises 3.2.3, 3.2.4, 3.2.18 (the definition of triviality of normal bundles is given in exercise 19 of section 3 of Chapter 2.)
- Exercises 3.3.8, 3.3.9, 3.3.17

¹Note that the conditions of the problem do not guarantee that X is orientable. You may assume that X is orientable.