

Due: Monday Nov 6

HMC Math 142 Fall 2023  
Prof. Gu  
Problem Set 7

Start this assignment as soon as possible!

**Read:**

- Baby Do Carmo, Differential Geometry of Curves and Surfaces: Sections 3-2, 3-3 of Chapter 3.
- Review handouts 11, 12 and 13.
- Lecture Notes.

**Do:**

**A: Problems on Reviewing of Self-Adjoint Linear Maps.**

- a) Write up a proof for the Key Theorem on page 216, Baby Do Carmo.

**B: Problems for understanding course materials**

- a) Carry out the details for Example 5, page 162, Baby Do Carmo. (Including the application to a geometric interpretation of the Dupin indicatrix, that is from page 164 to 165, Baby Do Carmo.)

**C: Other Problems**

- a) Problem 2 on page 151, Section 3-2, Baby Do Carmo.
- b) Problem 6 on page 151, Section 3-2, Baby Do Carmo.
- c) Problem 8 on page 151, Section 3-2, Baby Do Carmo.
- d) Problem 17 on page 152, Section 3-2, Baby Do Carmo.