Due: Thursday, March 30

HMC Math 143 Spring 2006
Prof. Gu
Problem Set 4

Start this assignment as soon as possible!

Read:

- Handout on Riemannian Manifolds.
- Riemannian Geometry by Do Carmo, Chapter 1
- Lecture Notes.

Do:

A: Problems on Reviewing The Differential of a (Differentiable) Map.
   - a) Write in your own words for a proof of Proposition 5.4 on page 28, Do Carmo. (You may first carry out Problem B below first.)

B: Problems from Lectures
   - a) Prove Lemma 5.2 on page 26, Do Carmo.
   - b) Prove Proposition 5.3 on page 27, Do Carmo.

C: Other Problems
   - a) Problem 1, page 45, Riemannian Geometry, Do Carmo.
   - b) Problem 2, page 46, Riemannian Geometry, Do Carmo.
   - c) Problem 4, page 46, Riemannian Geometry, Do Carmo.
   - d) Problem 5, page 46, Riemannian Geometry, Do Carmo.
   - e) Problem 6, page 46, Riemannian Geometry, Do Carmo.
   - f) Problem 7, page 46, Riemannian Geometry, Do Carmo.