

Homework 7

Total 28 points

Due Monday, November 4, 12:50 pm in class.

Reading: Chapter 6 from the textbook.

Note: Make your solutions neat, concise, and intelligible. It is not sufficient just to state the answer. Points may be deducted, if it is difficult to find and/or understand the solutions.

Problem 1. Geodesics on a sphere. Problem 6.1★ from the textbook.

Problem 2. Fermat's principle. Problem 6.5★★ from the textbook.

Problem 3. Stationary path. Problem 6.9★ from the textbook.

Problem 4. Brachistochrone. Problem 6.14★★ from the textbook.

Problem 5. Shortest path between two points on a sphere.

Problem 6.16★★ from the textbook.

Problem 6. Optimal flight route. Problem 6.23★★★ from the textbook.