1. Homework 4

Due: In Lecture 9-30

Problem 1. Read the full proof of Sard's Theorem in Milnor's book. It uses one more idea involving Fubini's Theorem. Then write the proof up in your own words.

Problem 2. Exhibit a smooth map $f : \mathbb{R} \to \mathbb{R}$ whose set of critical values is dense.

Problem 3. Use Sard's Theorem and stereographic projection to show S^k is simply connected.