

# MATH 154, EXAM PREPARATION SHEET II

## For an efficient preparation for the first midterm exam:

- ✚ **Make use of available resources.** Attend your Professor's office hours. Do not feel as though you are infringing on your Professor's time by attending office hours, it is part of their job description.
- ✚ **Read your Calculus book.** Read the sections covered in syllabus. This will reduce your dependence on class notes, which can often get in the way of listening and actively learning.
- ✚ **Rework the homework problems out of sequence.** It is helpful to compile 5x10 index cards with problems and answers on opposite sides. Draw the cards randomly so that you must identify the proper technique or concept. Look in the textbook or ask your Professor for supplemental problems.
- ✚ **Work for a deeper understanding of Calculus.** Topics will now be presented from visual, symbolic, numeric and linguistic perspectives. It is important to master these perspectives, and their relationship to one another.
- ✚ **Try to solve the following questions:**

**Section 12.1.** (*Functions of Several Variables*) 1-10.

**Section 12.2.** (*Limits and Continuity*) 2, 4, 6, 8, 11, 13-15, 20.

**Section 12.3.** (*Partial derivatives*) 4, 5, 7, 9-12, 14, 15, 21, 22, 24, 37, 39.

**Section 12.7.** (*Gradients and directional derivatives*) 3, 4, 6, 7, 8, 10, 11-13, 26, 27.

**Section 13.1.** (*Extreme Values*) 3 - 5, 8 - 13, 19, 22.

**Section 13.2.** (*Extreme Values of Functions on Restricted Domains*) 1 – 10, 12.

**Section 13.3.** (*Lagrange Multipliers*) 1-10.

**Section 14.2.** (*Iteration of double integrals in cartesian coordinates*) 2, 4, 8, 9, 11, 13-15, 18, 20, 22, 25.