

Math 163A A01 Fall 2009**Guide for the Final Exam**

The final exam is Thursday, November 19, at 10:10 am, in our classroom. This is also the final deadline for any late good problems. I will have office hours:

- Monday 9-10am
- Tuesday 9-10am and 3-4pm
- Wednesday 9-10am and 3-4pm
- Thursday 8-10am

The exam is cumulative, but there will not be any questions specifically from Chapters 1 and 2. The tests and their study guides give good sample questions for the sections they covered.

Here are some sample questions from sections 5-5 and 5-6, which were not covered by the other tests.

1. Find the absolute maximum and minimum of the function $f(x) = 2x^3 - 3x^2 - 12x + 5$
 - (a) on the interval $[-2, 0]$,
 - (b) on the interval $(0, \infty)$.
2. A company wishes to manufacture a box with a volume of 6 m^3 that is open on top and has a square base. The material for the bottom of the box costs \$3 per m^2 , while the material for the sides costs \$2 per m^2 . Find the dimensions of the box that will lead to minimum total cost. What is the minimum total cost?
3. To sell x thousand widgets, you figure that you should charge $p = 12 - x$ dollars each. To manufacture x thousand widgets costs you $10 + 2x$ thousand dollars.
 - (a) What is the most revenue that you can bring in by making and selling widgets?
 - (b) What is the most profit that you can make by making and selling widgets?