Fall 2004 Calculus I, sections 4, 5, 6, Courant Institute of Mathematical Sciences, NYU.

# Homework 7, due November 1

**Self check** (not to hand in, answers are in the back of the book):

**Section 5.2**: 1.

**Section 5.3**: 1, 7, 15 (don't try to work the integral), 21, 23.

*In all integrals, check the result by differentiation. The answer is incomplete without this.*

**Section 5.4**: 1, 3, 5, 19, 23, 25, 49, 55

## To hand in:

**Section 5.2**: 2.

**Section 5.3**: 2, 8, 16, 22, 24.

*In all integrals, check the result by differentiation. The answer is incomplete without this.*

**Section 5.4**: 2, 4, 6, 22, 24, 26, 50, 56.

## More problems (to hand in)

Read the word problem below. Then download the sample solution to it from the "assignments" page in the class Blackboard site. This solution contains mathematical mistakes and examples of confusing and logically incorrect writing. Please use a red or green pen to grade this answer out of a possible maximum of ten points. Take off points not only for clear mathematical errors, and also for "cosmetic" things such as incorrect grammar and statements whose intended meaning is easy to guess but which nevertheless is false as written. Also complain about information written in the wrong place, poorly or incorrectly drawn figures, and anything else that makes it hard to understand the thought process that the person used to solve the problem.

After you have done this, on a fresh piece of paper, write out your own solution that has none of these mistakes or problems. Hand in both.

**Problem:** A boat is 100 meters off a long straight beach. The boat has a search light pointed horizontally and turning at a constant speed. When the beam strikes the beach making a $60^o$ angle to the waterline, it is moving along the waterline at 300 meters/sec. How fast is the search light turning, in revolutions per minute?