

Math 132

Worksheet 3 – February 7, 2012

Name \_\_\_\_\_

These problems will give you a little bit extra practice. You might also want to ask about anything you didn't understand: on previous worksheets, on webworks, or in lecture. It might also be helpful to work practice problems from other sources, such as old exam problems, extra problems from the textbook, etc.

1. Show that  $\int \ln x \, dx = x \ln x - x + C$ .

2. Evaluate the following indefinite integrals:

(a)  $\int \theta \sin \theta^2 \cos \theta^2 \, d\theta$

(b)  $\int \cos^5 x \, dx$

(c) If you need more practice then many additional integrals can be found on p347 of your text.

3. Find a volume of rotation problem so that the volume is represented by

$$\int_0^{\ln 2} xe^{x^2} dx.$$

4. Problem 45 of 6.2.

This problem combines many of the ideas of the course up to now.