

MATH 104/184: Week 0 Learning Goals

August 28, 2013

Learning Goals

In this introductory week, we will review some material on exponential functions, logarithms, and inverse functions. This material should be familiar to the students from high school, though my experience is that they typically forget a lot of it. This material is found in Chapter 1.3.

Please emphasize the natural exponential and logarithm functions as these are extremely important in this course. Note that we will revisit these functions in more detail later in the course, but it is good to have early exposure and multiple hits at this material.

The specific learning goals for this week are that by the end of the week and review homework, you should be able to:

1. explain what an exponential function is. You should know the basic properties of exponential functions as presented in section 1.3. You should be able to graph exponential functions. You should be able to solve basic equations, as per the exercises, involving exponential functions.
2. explain what a one-to-one function is and how to test for this property graphically using the Horizontal Line Test.
3. explain what an inverse function is. You should be able to determine the intervals on which a given function has an inverse (if they exist). Given the graph of function, you should be able to graph the inverse function, if it exists.
4. describe the logarithmic functions as inverse functions of the exponential functions. You should know the basic properties of logarithmic functions presented in section 1.3 that parallel those of the exponential functions. You should be able to graph logarithmic functions. You should be able to solve basic equations using logarithmic functions.

Suggested Problems and Assignments

Suggested Problems: This week the suggested problems from the text are:

Chapter 1.3: 3, 5, 11, 23, 33, 34, 35, 36, 41,42,43,44,58, 59,60, 61, 67, 70, 79*.

Webwork Homework: You will be asked to do wwAssignment0 this week to learn how to use the online homework system WebWork. It will be due Wednesday, September 11th at 8 a.m.