Calculus II
Homework Eight
Due March 1, February, 2013

Chapter 8.7:

1. 1–3
2. 11
3. 12
4. 17

Chapter 8.8:

1. 6

Normal Distributions

1. The height of giraffes is distributed according to a normal distribution with a mean of 5.2 and a standard deviation of 0.3.

   (a) What fraction of giraffes are less than 4 meters tall?
   (b) What fraction of giraffes are between 5 and 6 meters tall?
   (c) What fraction of giraffes are more than 5.5 meters tall?

   Answer these questions two ways:

   - Using WolframAlpha
   - Converting to z and using a z-table. See, e.g., `http://en.wikipedia.org/wiki/Standard_normal_table`.

2. Sarah Luke is interested in the heights of COA students compared to Hampshire students. A careful study reveals that COA students have an average height of 63 inches and a standard deviation of 4 inches. Sarah then sends a team of RAs on a trip to Massachusetts to measure the heights of some Hampshire students. The RA team manages to convince 25 Hampshire students to be measured. The mean of these 25 Hampshire students is 67 inches.

   (a) What is the null hypothesis?
   (b) What is the p-value?
   (c) Should you reject the null? Do you think it is likely that the average heights of Hampshire and and COA students are the same?