Unit 5 – The Normal Distribution
Homework #7 (Unit 5 – Normal part 1 of 2)
Due: Monday October 26, 2015
Last submission date for credit: Monday November 2, 2015

1. **This exercise gives you practice in calculating probabilities under the standard normal curve. See lecture notes for unit 5 page 14.** ***A good url to use is***

http://davidmlane.com/hyperstat/z_table.html

Recall the convention of using the letter Z to represent a random variable that is distributed standard normal. Find the proportion of observations from a standard normal distribution that satisfies each of the following statements.

a. $Z < 2.85$

b. $Z > 2.85$

c. $Z > -1.66$

d. $-1.66 < Z < 2.85$

e. $Z < -2.25$

f. $Z > -2.25$

g. $Z > 1.77$

h. $-2.25 < Z < 1.77$

2. **This exercise gives you practice in calculating probabilities under normal curves with non-zero mean and non-unit variance.** ***The same url will work for this exercise too.***

http://davidmlane.com/hyperstat/z_table.html

The height, X, of young American women is distributed normal with mean $\mu=65.5$ and standard deviation $\sigma=2.5$ inches. Find the probability of each of the following events.

a. $X < 67$

b. $64 < X < 67$