Kerry Ojakian's MTH 23.5 Class
Class Assignment #19

Do using the application (and NOT Excel); do TWO things: Give the numeric answer and draw a very rough sketch matching the application (labeling the mean, and indicating the shaded-in region).
http://www.intmath.com/counting-probability/normal-distribution-graph-interactive.php

1. Suppose we have a normal distribution X with mean 3 and standard deviation 1.5. Determine the following:
   (a) $P(1.5 < X < 2.5) =$
   (b) $P(X < 2) =$
   (c) $P(X > 2) =$

2. Suppose the height of women in the USA is normally distributed. The mean is about 5.3 feet (i.e. 5 foot 4 inches) and the standard deviation is about 0.25 feet. Determine the following probabilities:
   (a) What is the probability that a woman's height is between the heights of 5 feet and 5.5 feet?
   (b) What is the probability that a woman's height is less than 5 feet?
   (c) What is the probability that a woman's height is more than 5.5 feet?

Do WITHOUT Excel, and WITHOUT the application. Justify your answer by combination of picture and empircal rule.

3. Suppose Y is normally distributed with mean 9 and standard deviation 2.

   (a) $P(Y < 9) =$

   (b) $P(Y \geq 9) =$

   (c) $P(7 < Y < 11) =$

   (d) $P(3 < Y < 15) =$

   (e) $P(5 < Y < 13) =$

   (f) $P(7 < Y < 9) =$

   (g) $P(9 < Y < 13) =$

Do WITH Excel (for your answers, do TWO things: write down the numeric result from Excel AND write down the Excel expression that gives you this number)

4. Suppose N is normally distributed with mean 5.3 and standard deviation 1.4.

   (a) $P(N < 5) =$

   (b) $P(N \leq 7.2) =$

   (c) $P(N > 7.2) =$

   (d) $P(N \geq 6) =$

   (e) $P(5 < N < 6) =$

   (f) $P(2 < N < 6) =$

Do with a combination of Excel and just paper-pencil (do NOT use the app).

5. From the online Statistics Textbook, chapter 6, do Homework problems: 63 (about NBA), 71 and 72 (parking), 73 - 80.