HW #1

1. Find the average and RMS size of the numbers on the following lists:
   a) 1, -3, 5, -6, 3
   b) -11, 8, -9, -3, 15
   c) 0, 5, -8, 7, -3

2. Find the SD for the following list of numbers:
   1, 2, 3, 4, 5, 6, 7

3. (a) For each list below, work out the average, the deviation from average, and the SD
   (i) 1, 3, 4, 5, 7
   (ii) 6, 8, 9, 10, 12
   (b) How is list (ii) related to list (i)? How does the relationship carry over to the average, the deviations from the average, and the SD?

4. (a) Find the average and SD of the list 41, 48, 50, 50, 54, 57.
    (b) Which number s on the list are within 0.5 SDs of average?
    (c) Which numbers on the list are within 1.5 SDs of average?

5. Which numbers on the following list are within 1 SD of average?
   0.7, 1.6, 9.8, 3.2, 5.4, 0.8, 7.7, 6.3, 2.2, 4.1
   8.1, 6.5, 3.7, 0.6, 6.9, 9.9, 8.8, 3.1, 5.7, 9.1

6. #1-4, 6-8 and 10 from Chapter 5 Exercise, Math 1680 Workbook.

7. The following list of test scores has an average 50 and SD of 10:
   39, 41, 47, 58, 65, 37, 37, 49, 56, 59, 62, 36, 48, 52, 64, 29, 44, 47, 49, 52, 53, 54, 72, 50, 50
   a) Use the normal approximation to estimate the number of scores within 1.25 SDs of average.
   b) How many scores really were within 1.25 SDs of the average?

8. On the Math SAT, men have a distinct edge. In 2005, for instance, the men averaged about 538, and the women averaged about 504.
   a) Estimate the percentage of men getting over 700 on this test in 2005.
b) Estimate the percentage of women getting over 700 on this test in 2005.

You may assume (i) the histograms followed the normal curve, and (ii) both SDs were about 120.

9. Among freshmen at a certain university, scores on the Math SAT followed the normal curve, with an average 550 and SD of 100. Fill in the blanks:

a) A student who scored 400 on the Math SAT was at the ______ th percentile of the score distribution.

b) To be at the 75th percentile of the distribution, a student needed a score of about ______ points on the Math SAT.