(1) For the following questions, consider a data set that exhibits a normal distribution. Report the answers to the nearest 0.01%.

(a) How much of the data lies below the value corresponding to $Z = 1.1$? 
   86.43%

(b) How much of the data lies between the values corresponding 
   to $Z = 1.1$ and $Z = 1.3$? 
   3.89%

(c) How much of the data lies between the values corresponding 
   to $Z = -1.1$ and $Z = 1.3$? 
   76.75%

(2) For the following questions, consider a data set that exhibits a normal distribution. Report the answers to the nearest 0.01.

(a) What is the Z score for the value that is larger than 20.9% of the data? 
   $Z = -0.81$

(b) What is the Z score for the value that is smaller than 11.9% of the data? 
   $Z = 1.18$

(c) Consider a portion of the data bounded above and below by certain Z scores. 
   If we consider a region bounded below by $Z = 0.4$, what is the Z score of 
   the upper bound if the region contains 23.9% of the data? 
   $Z = 1.25$

(3) Consider a set of 900 normally distributed data values with a mean of 24 and a standard deviation of 4.0

(a) How many values are larger than 27.00 
   (report answer to the nearest integer) 
   # = 204

(b) How many values are between 23.00 and 28.00? 
   (report answer to the nearest integer) 
   # = 396

(c) What is your best estimate for the value of Q3? 
   (report answer to the nearest 0.01) 
   Q3 = 26.70

(4) Imagine that we take a sample from a population of interest. 
   Sample data 
   Assume that this sample accurately reflects the mean and standard 
   deviation of the population so you can use the normal distribution and 
   Z scores for the problems below. (If you've read ahead in your book or 
   lab manual you know we should really use t scores, don't worry about this right now, use the Z scores)

(a) Assuming that the population data is normally distributed, what is the value 
   that you expect 67% of the data in the population to be smaller than? 
   (round to nearest 0.01) 
   Val. = 20.21

(b) What is your best estimate for the IQR of the population data? 
   (round to nearest 0.01) 
   IQR = 3.34