All questions are worth 1 point.

(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 \( Z = 1.2? \) 88.49%

(b) How much of the data lies between the values corresponding to \( Z = 1.2 \) and \( Z = 1.4? \) 3.43%

(c) How much of the data lies between the values corresponding to \( Z = -1.2 \) and \( Z = 1.4? \) 80.41%

(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 12.3% of the data? \( Z = -1.16 \)

(b) What is the Z score for the value that is smaller than 1.1% of the data? \( Z = 2.29 \)

(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 6.7% of the data? \( Z = 0.59 \)

(3) Consider a set of 800 of normally distributed data values with a mean of 26 and a standard deviation of 4.0

(a) How many values are larger than 27.00? \( # = 321 \) (report answer to the nearest integer)

(b) How many values are between 23.00 and 28.00? \( # = 372 \) (report answer to the nearest integer)

(c) What is your best estimate for the value of Q3? \( Q3 = 28.70 \) (report answer to the nearest 0.01)

(4) Imagine that we take a sample from a population of interest. For the following questions use the sample values to the right:

Sample data: 21 17
17 21

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? \( \text{Val.} = 19.91 \) (round to nearest 0.01)

(b) What is your best estimate for the IQR of the population data? \( \text{IQR} = 2.79 \) (round to nearest 0.01)