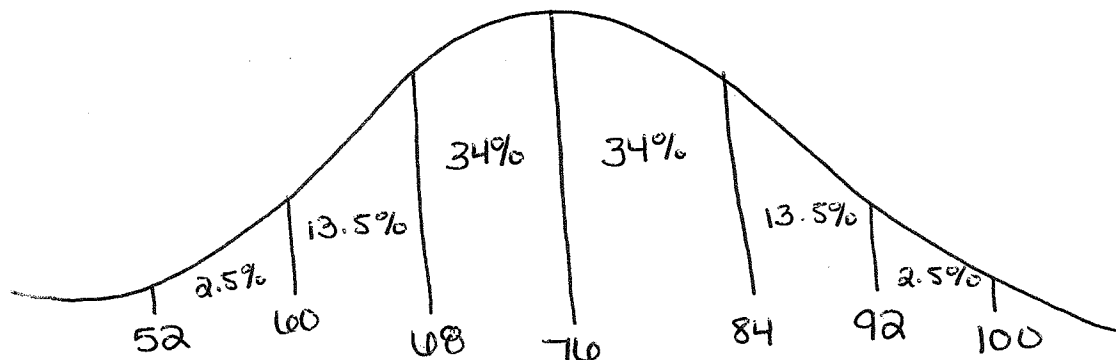


1. On a recent 100 point test, the distribution of scores for a class of students was approximately normal with a mean of 76 points and standard deviation of 8 points.

a. Sketch a graph of this distribution. Include a scale and label the mean, and $\pm 1s$, $\pm 2s$, $\pm 3s$ along with the corresponding percentages under the normal curve.



Use the normal curve you created above to answer the following questions.

a. What is the probability that a randomly selected student had a score of 84 points or less?

84% or .84

b. What is the probability that a randomly selected student scored less than a 60?

2.5% or .025

c. What is the probability that a randomly selected student scored between a 68 and a 92?

81.5% or .815

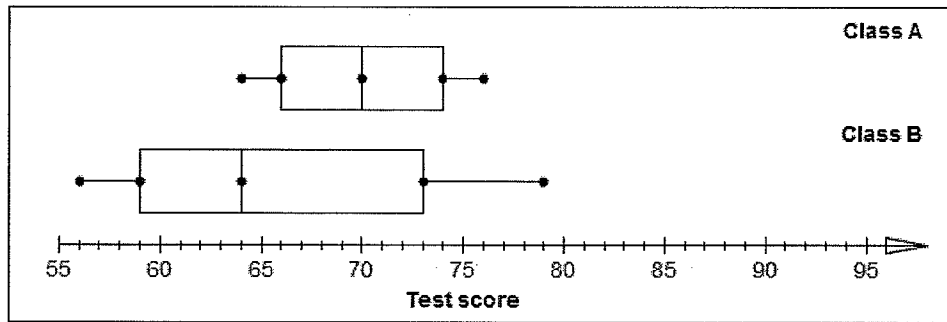
d. If there are 30 students in the class, approximately how many students scored below a 76?

15 students

2. For each of the data sets below, indicate the relationship between the mean and median without actually calculating the mean and median.

	Mean Is Greater	Mean Is Equal To The Median	Median Is Greater
32, 34, 36, 38, 80	X		
10, 20, 30, 40, 50		X	
0, 499, 500, 501, 502			X

3. Given the following box plots that represent the test scores for Class A and Class B on the last Biology test, answer the questions.



- a) What percent of the students from Class A received 70% or better on the test?

50%

- b) What percent of the students from Class B received better than 73% on the test?

25%

- c) What is the range of test scores for Class A?

$$78 - 64 = 14$$

- d) What is the interquartile range for the test scores of Class B?

$$IQR = Q3 - Q1 \rightarrow 73 - 59 = 14$$

- e) Which class has a larger median?

Class A

- f) Which class has a larger range of the test scores?

Class B

- g) Which class has a smaller variability of test scores?

Class A

4. Given the data set: 2, 3, 4, 6, 8, 9, 10,

a. Find the mean, median, range and standard deviation for this data set.

Mean	6
Median	6
Range	8
Standard Deviation	3.11

b. Add 2 to each number in the data set. Find the mean, median, range and standard deviation of this new set and sketch a dot plot.

Mean	8
Median	8
Range	8
Standard Deviation	3.11

c. Describe how adding 2 to each piece of data affected each of these statistics.

• Mean:
increased by 2

• Median:
increased by 2

Range:
no change

Standard Deviation:
no change

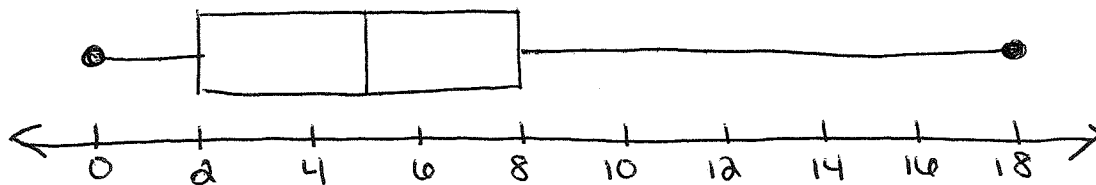
The spread
remains the
same

5. A sample of 20 men was asked to count and report the number of coins they had in their pocket. The number of coins reported was: 6, 0, 3, 8, 12, 18, 2, 4, 9, 7, 5, 15, 6, 0, 8, 2, 0, 4, 2, 5

a. Find the five number summary for this data.

Minimum	0
Q1	2
Median	5
Q3	8
Maximum	18

b. Create a box plot of this data. Be sure to scale and label an axis.



c. Describe the shape, center and spread of this distribution in the context of the problem.

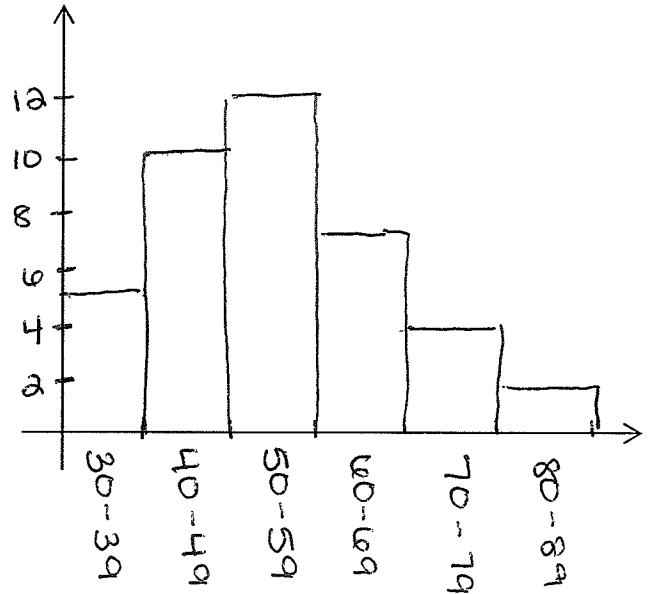
The distribution of number of coins is skewed to the right with only a few men having more than 8 coins in their pockets. The median is 5 coins with an interquartile range of 6 coins.

6. The data below gives the daily high temperature in °F for different cities across the U.S. on one day in April.

48, 53, 55, 48, 50, 46, 64, 70, 61, 74, 36, 69, 51, 45, 31, 48, 45, 41, 38, 63, 50, 52, 51, 54, 70, 54, 39, 84, 57, 66, 56, 63, 72, 45, 48, 56, 47, 38, 80, 61

a. Create a histogram of the distribution of the daily high temperatures. First tally the data in the table below, then, complete a histogram graph on the axes provided below. Be sure to scale and label your axes.

Temperature	Frequency
30-39	5
40-49	10
50-59	12
60-69	7
70-79	4
80-89	2



b. Describe the shape, center, and spread.

The shape of the daily high temperatures is skewed to the right with most of the high temps being between ~~40-59~~ ⁴⁰⁻⁵⁹.
 The center of the distribution is around 55 °F and the range is 53 ~~of~~ ^{of}.