1. Find the mean, median, and mode of the following data. Use the rounding rules for calculating the mean and median.

Lengths of Longest 3-Point Kick for NCAA Division 1-A Football (in Yards)

47	29	45	51	41
43	53	44	52	46
37	59	51	49	37
42	37	39	37	39

Mean = $\sqrt{}$

Median = $\sqrt{}$

Mode = $\sqrt{}$ A) No mode

2. Calculate the GPA of a student with the following grades: A (13 hours), D (9 hours), F (6 hours). Note that an A is equivalent to 4.0, a B is equivalent to a 3.0, a C is equivalent to a 2.0, a D is equivalent to a 1.0, and an F is equivalent to a 0. Round your answer to two decimal places.

Answer : _____

3. A company has given you the task to research the salary of thirty-five-year-olds in New York City. Would you be more interested in looking at the mean, median, or mode?

A) Mean

B) Median

C) Mode

4. For the graph shown, determine which letter represents the mean, the median, and the mode. Letters may be used more than once.

Mean = $\sqrt{}$

Median = $\sqrt{}$

Mode = $\sqrt{}$

5. For the following type of data set, would you be more interested in looking at the mean, median, or mode? State your reasoning.

The price for homes with similar floor plans in a new neighborhood

Answer : _____

6. Lionel has just gone grocery shopping. The mean cost for each item in his bag was $2.91. He bought a total of 7 items, and the prices of 6 of those items are listed below:

$$\$1.81, \$2.88, \$3.03, \$2.80, \$4.09, \$2.19$$

Determine the price of the 7th item in his bag.

Answer : _____

7. Suppose each value in a data set were tripled. How would this affect the mean, median, and mode?

A) The mean would be tripled, but the median and mode would be unaffected.

B) The mean, median, and mode would all be unaffected.

C) The mean, median, and mode would all be tripled.

D) The mean would be unaffected, but the median and mode would be tripled.

E) There is not enough information to determine an answer.

8. Calculate the range, population variance, and population standard deviation for the following data set. Use the rounding rules for calculating the variance and standard deviation.

$$6, 12, 10, 11, 14, 12, 7, 12, 14, 17$$

Range: _____

Population Variance: _____

Population Standard Deviation: _____

9. Calculate the range, population variance, and population standard deviation for the following data set. Use the rounding rules for calculating the variance and standard deviation.

$$13, 13, 13, 13, 13, 13, 13, 13, 13, 13$$

Range: _____

Population Variance: _____

Population Standard Deviation: _____

10. Decide if the following statement is true or false.

It is possible to have a standard deviation of 720,000 for some data set.

A) True

B) False

11. Consider the following data:

$$5, 3, 14, 10, 4, 5, 8$$

Step 1 of 3:
Calculate the value of the sample variance. Round your answer to one decimal place.

Answer : _____

Step 2 of 3:
Calculate the value of the sample standard deviation. Round your answer to one decimal place.

Answer : _____

Step 3 of 3:
Calculate the value of the range.

Answer : _____

12. Decide if the following statement is true or false. Explain why.

It is possible to have a standard deviation of -2 for some data set.

A) False; since the standard deviation is an average distance and is computed from a square root, it cannot be negative.

B) True; the standard deviation is a measure of how far the data are away from the mean. A negative value only means that the data are generally less than the mean.

C) False; the standard deviation is equal to the variance squared and squared values cannot be negative.

D) True; by definition, the only value the standard deviation cannot be is zero.

13. Answer the following question.

How will the standard deviation be affected if a constant, c, is added to each data value?

A) The standard deviation will be unaffected.

B) The standard deviation will be increased by $\sqrt{c}$.

C) The standard deviation will be multiplied by c.

D) The standard deviation will increase by c.

14. Suppose that IQ scores have a bell-shaped distribution with a mean of 95 and a standard deviation of 15. Using the empirical rule, what percentage of IQ scores are no more than 140? Please do not round your answer.

Answer : _____

15. Suppose that grade point averages of undergraduate students at one university have a bell-shaped distribution with a mean of 2.61 and a standard deviation of 0.4. Using the empirical rule, what percentage of the students have grade point averages that are between 2.21 and 3.01?

Answer : _____

16. Suppose that IQ scores have a bell-shaped distribution with a mean of 98 and a standard deviation of 17. Using the empirical rule, what percentage of IQ scores are greater than 64? Please do not round your answer.

Answer : _____

17. Suppose that IQ scores have a bell-shaped distribution with a mean of 101 and a standard deviation of 12. Using the empirical rule, what percentage of IQ scores are at least 125? Please do not round your answer.

Answer : _____

18. The mean salary at a local industrial plant is $\$26{,}500$ with a standard deviation of $\$5000$. The median salary is $\$27{,}200$ and the 57^{th} percentile is $\$30{,}400$.

Step 1 of 5:
Based on the given information, determine if the following statement is true or false.

Approximately 57% of the salaries are less than or equal to $\$30{,}400$.

A) True B) False

Step 2 of 5:
Based on the given information, determine if the following statement is true or false.

Joe's salary of $\$34{,}400$ is 1.50 standard deviations above the mean.

A) True B) False

Step 3 of 5:
Based on the given information, determine if the following statement is true or false.

The percentile rank of $\$27{,}200$ is 50.

A) True B) False

Step 4 of 5:
Based on the given information, determine if the following statement is true or false.

Approximately 7% of the salaries are between $\$26{,}500$ and $\$30{,}400$.

A) True B) False

Step 5 of 5:
If Tom's salary has a z-score of 0.9, how much does he earn (in dollars)?

$\$$ ____

19. A supermarket selected a sample of 200 of its customers and measured how long they took to be served at the checkout counter. If too many customers wait too long, the supermarket intends to hire more checkout personnel. Specifically, the supermarket would like at least 90% of its customers to be checked out in 9 minutes or less. From the data, the 90^{th} and 60^{th} percentiles were computed to be 9.7 minutes and 7.2 minutes, respectively. The range of the data was 13 minutes and the fastest anyone was checked out was 1.1 minutes.

Step 1 of 5:
What was the longest time (in minutes) anyone waited in line?

____ minutes

Step 2 of 5:
Based on the given information, determine if the following statement is true or false.

The median of the data exceeds 7.2 minutes.

A) True B) False

Step 3 of 5:
Approximately how many customers waited 7.2 minutes or less to be checked out?

Step 4 of 5:
Based on the given information, determine if the following statement is true or false.

Ninety percent of the customers will be checked out in 7 minutes or less.

A) True B) False

Step 5 of 5:
What percentage of the customers were checked out between 7.2 and 9.7 minutes?

%

20. Each of a sample of 146 residents selected from a small town is asked how much money he or she spent last week on state lottery tickets. 94 of the residents responded with $0. The mean expenditure for the remaining residents was $18. The largest expenditure was $237.

Step 1 of 5:
What is the range of the data (in dollars)?

$

Step 2 of 5:
What is the median of the data?

Step 3 of 5:
What is the mode of the data?

Step 4 of 5:
What is the mean of the 146 data points? Round your answer to one decimal place.

Step 5 of 5:
What proportion of the sample did not purchase any lottery tickets? Express your answer as a simplified fraction or as a value rounded to one decimal place.

21. Calculate the five-number summary of the given data. Use the approximation method.

18, 9, 16, 5, 10, 15, 8, 9, 24, 1, 16, 14, 19, 15

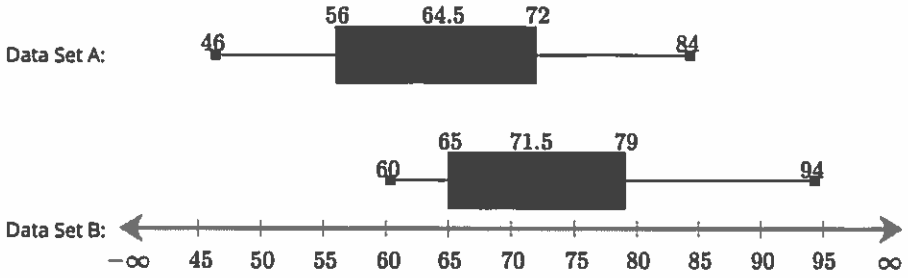
22. Calculate the interquartile range of the given data. Use the approximation method.

52, 10, 36, 37, 26, 48, 53, 46, 2, 21, 5, 38, 51, 36

23. Construct a box plot from the given data. Use the approximation method.
Scores on a Statistics Test: 79, 54, 90, 94, 52, 84, 55, 90, 54, 77

Answer : _____

24. Given the following box plots, which data set has the smallest value?



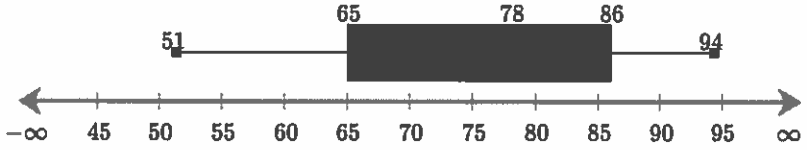
Step 1 of 2:

A) Data Set A B) Data Set B

Step 2 of 2:

A) Data Set A B) Data Set B

25. Given the following box plot, choose the best description of the distribution.



A) The distribution of the data is skewed left.

B) The distribution of the data is skewed right.

C) The distribution of the data is symmetric.

26. Three potential employees took an aptitude test. Each person took a different version of the test. The scores are reported below.

Kerri got a score of 80.8; this version has a mean of 62.1 and a standard deviation of 11.

Cade got a score of 286.4; this version has a mean of 271 and a standard deviation of 22.

Vincent got a score of 7.9; this version has a mean of 7.2 and a standard deviation of 0.7.

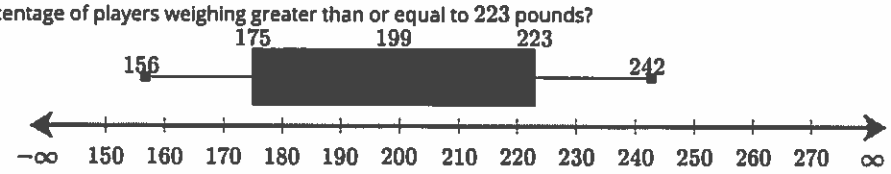
If the company has only one position to fill and prefers to fill it with the applicant who performed best on the aptitude test, which of the applicants should be offered the job?

A) Kerri

B) Cade

C) Vincent

27. A high school has 48 players on the football team. The summary of the players' weights is given in the box plot. Approximately, what is the percentage of players weighing greater than or equal to 223 pounds?



Weight (in pounds)

[ ] %

28. The following stem-and-leaf plot represents the times in minutes required for 20 co-workers to commute to work. Use the data provided to find the quartiles.

Commute Times in Minutes

Stem	Leaves					
2	1	2	4	5	5	
3	1	3	5	8	9	
4	1	3	4	6		
5	0	2	3	4	5	6

Key: $2 \mid 1 = 21$

Step 1 of 3:
Find the ***second*** quartile.

Step 2 of 3:
Find the ***first*** quartile.

Step 3 of 3:
Find the ***third*** quartile.