**1. A teacher gave a quiz. The following stem-and-leaf plot shows the scores of the students in her class. Round your answers to the nearest hundredth.**

**Quiz**

| STEM | LEAF |
|------|------|
| 4 | 0 |
| 5 | 0 0 |
| 6 | 0 0 0 |
| 7 | 0 0 0 0 |
| 8 | 0 0 0 |
| 9 | 0 0 |
| 10 | 0 |

Key:  6|0 equals 60

**Find the mean of the data**
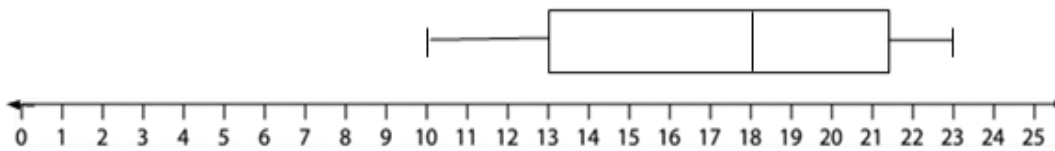
**Find the standard deviation (use the calculator).**

**Calculate the z-score for a student who scored 65.**

**2. A data set has a mean of 16.5 and a standard deviation of 3. The element $x$ has a z-score of 1.5.  In which interval does the element lie?**

**A**   $10.5 \leq x < 13.5$              **B**   $13.5 \leq x < 16.5$              **C**   $16.5 \leq x < 19.5$

                              **D**   $19.5 \leq x < 22.5$              **E**   $22.5 \leq x < 25.5$

**3. This box-and-whisker plot represents nine pieces of data.  No number is repeated.**



**The number 23 is removed from the data set and a new box-and-whisker plot is drawn. Compared to the values in the original box-and-whisker plot, describe the changes to each of these values (increases, decreases or stays the same):**

    a)  the lower extreme      _____

    b)  the lower quartile      _____

    c)  the median                _____

    d)  the upper quartile      _____

    e)  the upper extreme      _____

**4. Each of these box-and-whisker plots represents a data set with 10 distinct elements.**
   **Circle the letter(s) of the statements about these plots that appear to be true.**
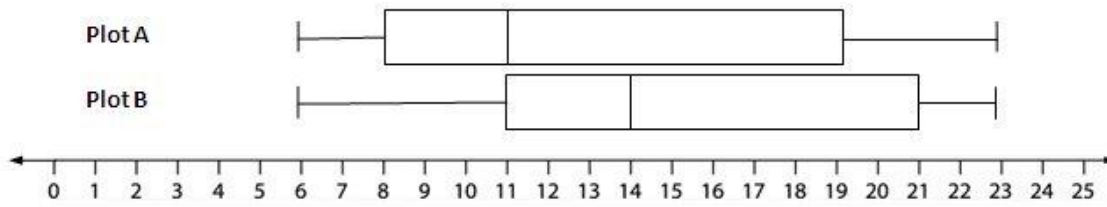


a) There are more elements in the lower quartile of plot B than plot A, because the left whisker of plot B is longer than the left whisker of plot A.

b) Since both data sets have 10 distinct elements, the box of plot A and the box of plot B contain the same number of elements.

c) There are fewer elements in the upper quartile of plot B than plot A, because the right whisker of plot B is shorter than the right whisker of plot A.

d) The interquartile range of plot A is greater than the interquartile range of plot B.

e) The range of both plots are equal.

5.

The data set shown has a mean of 37 and a standard deviation of 6.3, rounded to the nearest tenth.

$$\{ 26,\ 29,\ 32,\ 33,\ 35,\ 36,\ 37,\ 39,\ 40,\ 44,\ 45,\ 48 \}$$

How many of these data points have a z-score greater than $-0.6$?

A 3         B 5         C 8         D 9

6.

This table shows data on the number of dollars raised during a fundraiser for four different classes and for one student in each class.

**Number of Dollars Raised**

| | Mean for Class | Standard Deviation for Class | Student's z-Score |
|---|---|---|---|
| Jill | 60 | 11 | 1.8 |
| Kelli | 58 | 12 | 2.1 |
| Monroe | 55 | 13 | 1.4 |
| Tim | 57 | 10 | 2.5 |

Which of the four students raised the greatest number of dollars?

A Jill         B Kelli         C Monroe         D Tim

**7.**

The mean for a data set is 45. The z-score for data point $a$ is 0. The z-score for data point $b$ is 0.2. Which are the possible values for data points $a$ and $b$ ?

A   $a = 0$ and $b = 44.2$                          B   $a = 0$ and $b = 45.8$

C   $a = 45$ and $b = 45.8$                     D   $a = 45$ and $b = 44.2$

**8.**

A data set has a mean of 68.42 and a standard deviation of 7.91. An element in this set is 57.

What is the z-score for 57? Round the answer to the nearest hundredth.

**9.**

The data on the annual rainfall for 32 cities is summarized in this histogram.

- The mean amount of rainfall for these cities is 32.5 inches.
- The standard deviation of the data is 4 inches.

On the histogram,  circle   each interval that may have data points within 1.5 standard deviations of the mean.



**Annual Rainfall of Cities**
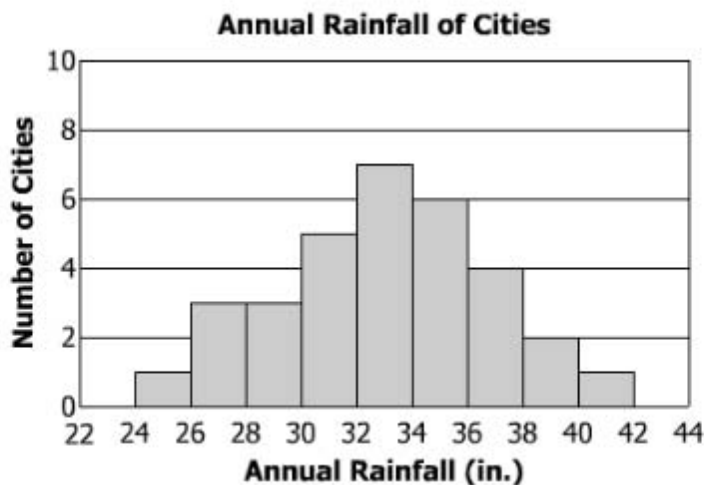
10.

**The number of points two basketball teams scored is summarized in these box-and-whisker plots.**

**Points Scored**

**Team A**



20    30    40    50    60    70    80
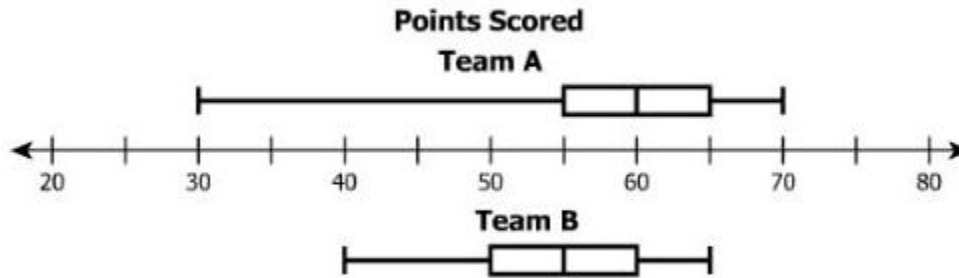
**Team B**

- **Team A scored a different number of points in each of the team's 14 games.**
- **Team B scored a different number of points in each of the team's 13 games.**

**What is the total number of games that Team A and Team B scored 55 or more points?**
A   13          B   14          C   16          D   18

11.

**A set of data for the number of points a basketball team earned for each of 9 games in a tournament is shown. The mean for the data set is approximately 80.1 and the standard deviation is approximately 6.1. Using these approximations, which scores are within one standard deviation of the mean?**

{ 71 , 73 , 75 , 78 , 80 , 82 , 85 , 87 , 90 }

12. Determine the quadratic curve of best fit for the data.(2pts each)

$\{(-3, 2), (0, 5), (1, 7.3), (-1, 3.3), (-6, 5), (-7, 7.3)\}$   $y =$ _____

. Using your equation, estimate the value of $y$ when x = -4.  $y =$ _____