End of Topic Test Form A

Name _____ Date _____

1. Define each measure of center.

a. What is the mode of a data set?

b. What is the median of a data set?

c. What is the mean of a data set?

2. Justin recorded the amount of time he spent exercising each day for 2 weeks.

Week 1

Monday: 30 minutes, Tuesday: 25 minutes, Wednesday: 0 minutes,

Thursday: 20 minutes, Friday: 40 minutes, Saturday: 50 minutes, Sunday: 40 minutes

Week 2

Monday: 0 minutes, Tuesday: 25 minutes, Wednesday: 40 minutes,

Thursday: 25 minutes, Friday: 60 minutes, Saturday: 75 minutes, Sunday: 45 minutes

Consider the data set made up of all his exercising times over the 2-week period.

a. Determine all modes of the data set.

b. What do the modes tell Justin about the number of minutes that he spent exercising each day over the two-week period?

c. Calculate the median number of minutes Justin spent exercising each day.

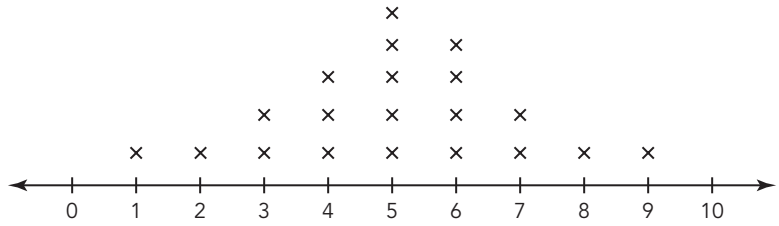
d. What does the median tell Justin about the number of minutes he spent exercising each day?

e. Calculate the mean number of minutes that Justin exercised over the two-week period. If necessary, round the mean to the nearest minute.

f. What does the mean tell Justin about the number of minutes he spent exercising each day?

g. What does the relationship between the median and the mean tell you about the distribution in this data set?

3. The plot shows the number of birds seen by students in Mrs. Jackson's class while on their field trip to the nature center.



a. Describe the distribution of the data.

b. Which measure of center is most appropriate to use? Calculate that value.

c. Which measure of variation is most appropriate to use? Calculate that value.

4. The stem-and-leaf plot shows the grades on the history quiz for students in Mr. Fields' class.

6	2
7	3 7
8	0 1 5 9
9	2 2 6 7 7 8 9
10	0 0 0 0 0 0 0

Key: 6 | 2 = 62

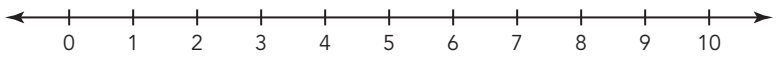
a. Describe the distribution of the data.

b. Mr. Fields decides to use the mean as the best measure of center? Is he correct? What is the value of the most appropriate measure of center?

c. Mr. Fields decides to use the IQR as the best measure of variation. Is he correct? What is the value of the most appropriate measure of variation?

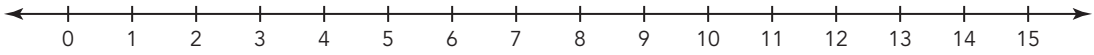
5. Use the given information about a data set to draw a possible box and whisker plot.

- The maximum value is 10.
- The minimum value is 1.
- 50% of the data is between 4 and 7.
- The median is equal to the mean.



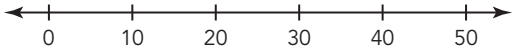
6. Frannie measured the lengths in inches of several pieces of string. Using the information about the measurements, draw a possible box and whisker plot.

- The data distribution is skewed left..
- The IQR = 4 inches.
- The range = 11 inches.
- The shortest string is 3 inches long.



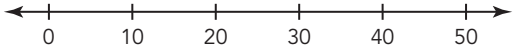
7. Consider the following data set: 20, 25, 25, 40, 40

a. Plot the data set on the dot plot shown.



b. Calculate the median.

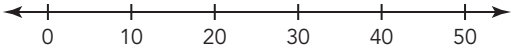
c. Estimate the balance point. Check your answer by calculating the mean.



d. Determine the mode.

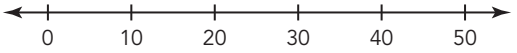
8. Consider the following data set: 15, 20, 25, 30, 50

a. Plot the data set on the dot plot shown.



b. Calculate the median.

c. Estimate the balance point. Check your answer by calculating the mean.



d. Determine the mode.

9. The stem-and-leaf plot shown displays the heights, in inches, of 19 volleyball players.

4	8 9
5	0 1 3 4 5 5 5 6 7 7 8 8 9
6	0 1 1 2

5 | 4 = 54 inches

a. How many players are represented in the stem-and-leaf plot. Explain your reasoning.

b. What is the mode of the heights? Explain how you know.

c. What is the median player height? Explain how you determined this.

d. Describe the distribution as skewed left, symmetric, or skewed right.

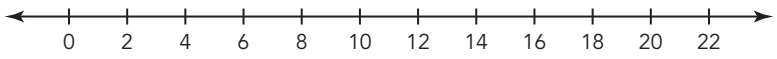
e. Do you think that the mean player height is greater than, less than, or about the same as the median player height?

f. What is the mean player height to the nearest tenth? Explain how you calculated it.

10. Tammie wants to estimate the number of minutes students spend waiting for the bus each morning. She decides to take a random sample of 11 anonymous students. The results are shown.

4 minutes	10 minutes	8 minutes	12 minutes
3 minutes	15 minutes	6 minutes	10 minutes
5 minutes	22 minutes	13 minutes	

a. Display the data from the sample on the dot plot.

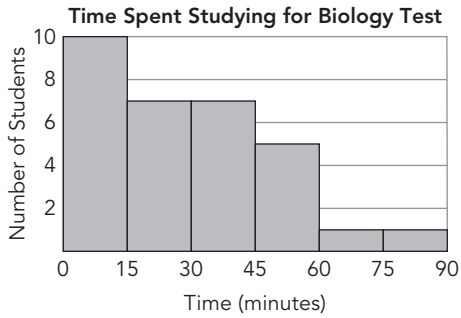


b. Determine the mode, median, and mean of the data set. Round the mean to the nearest tenth.

c. Determine the mean absolute deviation and the IQR for the data set.

d. Which measure of variation would be more appropriate to use?

11. The histogram shows the distribution of the amount of time, in minutes, that the students in Mrs. Dowdell's 7th period biology class spent studying for their last test.



a. How many students are represented in the histogram? Explain how you know.

b. Describe the distribution as skewed left, symmetric, or skewed right.

c. Do you think the mean number of minutes is greater than, less than, or about the same as the median number of minutes? Explain your reasoning.

d. Can you determine the mean, median, and mode of the data set by examining the histogram?

e. Would the mean or median better represent the center of data? Why?

12. The stem-and-leaf plot shown displays the scores of the students in Mr. Rickert's 6th period math class on a 100-point chapter test.

Student Scores, on a 100-Point Test

4	5
5	3 7
6	0 2 4
7	4 5 6 6 8 9
8	1 2 4 5 7 8 8
9	1 3 5 6 9

Key: 8|4 = 84 points

a. How many students are represented in the stem-and-leaf plot? Explain your reasoning.

b. What is the mode of the scores? Explain how you know.

c. What is the median test score? Explain how you determined this.

d. Describe the distribution as skewed left, symmetric, or skewed right.

e. Do you think that the mean test score is greater than, less than, of about the same as the median score?

f. What is the mean test score to the nearest tenth? Explain how you calculated it.

13. The Lopez and Holland families each have 5 children. The names and ages of the children are given.

Lopez family: Rosa, 16; Jose, 8; Lucia, 11; Angel, 5; Carlotta, 5

Holland family: Danielle, 9; Eric, 10; Alexis, 7; Joshua, 10; Cody, 4

a. Determine the mean age for the children in the Lopez family and for the children in the Holland family.

b. Complete the tables for the two families.

Lopez family

Name	Age	Deviation from mean	Absolute Deviation from Mean
Rosa	16		
Jose	8		
Lucia	11		
Anget	5		
Cariotta	5		

Holland family

Name	Age	Deviation from mean	Absolute Deviation from Mean
Danielle	9		
Eric	10		
Alexis	7		
Joshua	10		
Cody	4		

c. Using the data from the tables in part b, determine the mean absolute deviation of the children's ages in each family.

d. Which family's children are closer together in age?

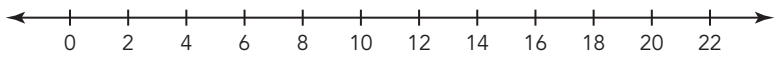
e. Determine the median for each set of ages. Compare the mean and median values for each family.

f. Describe the distribution of the data in this situation.

14. Brad wants to estimate the number of points each player earns while playing a math computer game. He decided to take a random sample of 15 anonymous players. The results are shown.

2 points	7 points	5 points	3 points
6 points	10 points	0 points	21 points
11 points	9 points	4 points	8 points
12 points	6 points	3 points	

a. Display the data from the sample on the dot plot.



b. Determine the five-number summary for the data from the sample.

c. Construct a box-and-whisker plot to represent the data.

d. Describe the difference between the characteristics of the right and left whiskers. What does this difference indicate about the data set?

e. Which measure of center and measure of variation are most appropriate to describe this data set? Explain using the box and whisker plot.

15. Allison recorded the time, in minutes, that she spent talking on the phone each day for two weeks. The results are shown.

Week 1	Week 2
57, 123, 90, 138, 101, 35, 64	160, 45, 98, 115, 124, 25, 63

a. Calculate the mean talk time for each week.

b. Calculate the range of talk times for each week.

c. Determine the median talk time for each week.

d. Calculate and interpret the quartiles for each data set.

e. Calculate and interpret the IQR for the talk times for each week.

f. Construct box-and-whisker plots for the talk times for each week. Use the same number line for each box-and-whisker plot and place one on top of the other.

g. For which week of talk times could you use the mean absolute deviation as the measure of variation? Explain your reasoning.