7th Grade Pre-Algebra **Name:** _____

Date: _____

Study Guide Test 11 Data Analysis

1. Find the mean, median, and mode for the following data set: 22, 34, 36, 18, 36, 40, 25, 23, 32, 43, 43

2. Find the mean, median, and mode of the following data set: 6, 7, 9, 8, 9.

3. Find the mean, median, and mode for the following data set: 5, 2, 12, 7, 13, 9, 8

4. Which of the following surveys would result in a biased sample? Why?
   A television station randomly calls one name from each page of the phone book.
   A teacher asks every 3rd student in the cafeteria about their favorite school subject.
   A store owner calls a randomly generated list of his customers.
   Fans at a country music concert are surveyed about their favorite type of music.

5. A store owner surveys every 10th customer to see how effective his advertising has been. Identify the population of the survey.

6. A television company surveys viewers to find out their favorite programs. Identify the population of the survey.

7. A radio station surveys its listeners to find out their opinions on a new format. Identify the population of the survey.

8. A golf course owner surveys golfers on the weekend to see what improvements are needed to the course. Identify the population of the survey.

9. A golf course owner surveys golfers on the weekend to see what improvements are needed to the course. Identify the sample of the survey.

10. A doctor surveys his patients about how much exercise they get each week. Identify the sample of the survey.

11. A television company surveys viewers to find out their favorite programs. Identify the sample of the survey.

12. A store owner surveys every 10th customer to see how effective his advertising has been. Identify the sample of the survey.

13. Listeners to a radio station call in to voice their opinions on an election. Identify the sampling method of the survey.

14. A teacher survey every 5th student on the playground about their favorite recess activities. Identify the sampling method of the survey.

15. A principal asks the students standing in line at the cafeteria about their favorite school lunches. Identify the sampling method of the survey.

16. An advertising company randomly selects 3 of 10 stores and surveys customers in those stores about their shopping habits. Identify the sampling method of the survey.

17. One name is chosen from each page of the student directory. Identify the sampling method of the survey.

18. Organize the data in a line plot.

Quiz Scores	
Score	**Frequency**
1	2
2	4
3	4
4	5
5	4

19. Organize the data in a line plot.

Quiz Scores	
Score	**Frequency**
1	1
2	4
3	5
4	5
5	6

20. Make a stem-and-leaf plot for the data: 32, 24, 42, 35, 11, 23, 26, 11, 31, 19, 48, 25.

21. Make a stem-and-leaf plot for the data: 15, 48, 27, 39, 27, 48, 39, 15, 29, 28, 16, 31.

22. The table shows the number of canned goods collected during 10 days of a food drive. Make a box-and-whisker plot for the data with and without the outlier. Explain how the outlier affects the graph.

Canned Goods Collected				
5	37	37	32	44
25	38	39	32	25

23. The table shows the number of canned goods collected during 10 days of a food drive. Make a box-and-whisker plot for the data with and without the outlier. Explain how the outlier affects the graph.

Canned Goods Collected				
4	39	29	44	33
33	39	33	25	34

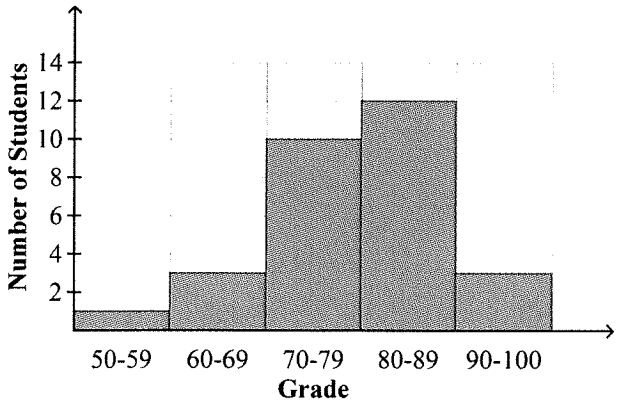
24. The table shows how many points Kyle and Jose have scored in the first 3 games this season. Make a double bar graph of the data.

	Game 1	Game 2	Game 3
Kyle	6	6	5
Jose	5	4	7

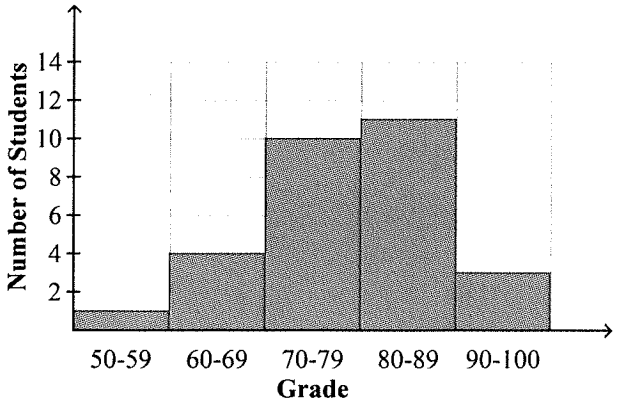
25. The table shows how many points Kyle and Jose have scored in the first 3 games this season. Make a double bar graph of the data.

	Game 1	Game 2	Game 3
Kyle	6	6	6
Jose	4	8	5

26. The histogram shows the grade distribution on a math exam. How many students took the exam? How many of them earned a grade in the 70s?



27. The histogram shows the grade distribution on a math exam. How many students took the exam? How many of them earned a grade in the 80s?



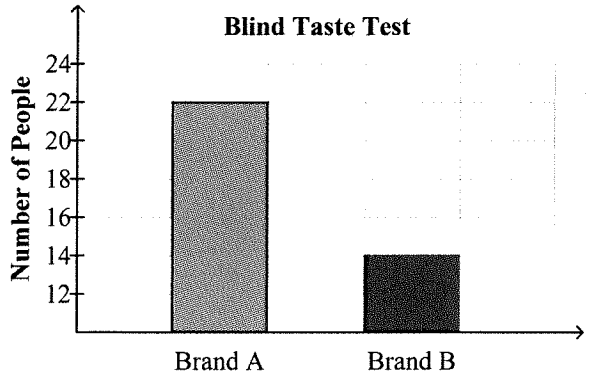
28. Create a double line graph of the data.

Number of Absent Students		
Day	**7th Graders**	**8th Graders**
Monday	2	4
Tuesday	5	5
Wednesday	2	0
Thursday	4	5
Friday	1	0

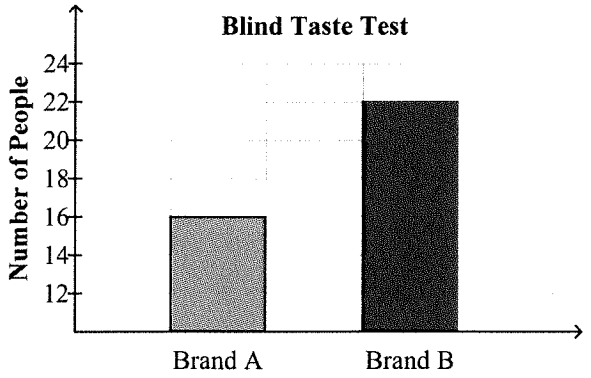
29. Create a double line graph of the data.

Number of Absent Students		
Day	**7th Graders**	**8th Graders**
Monday	4	2
Tuesday	0	3
Wednesday	5	5
Thursday	6	5
Friday	2	4

30. Explain why the graph below is misleading. Create a new graph that more accurately represents the results of the blind taste test.

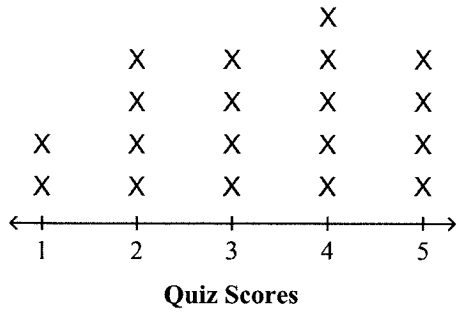


31. Explain why the graph below is misleading. Create a new graph that more accurately represents the results of the blind taste test.



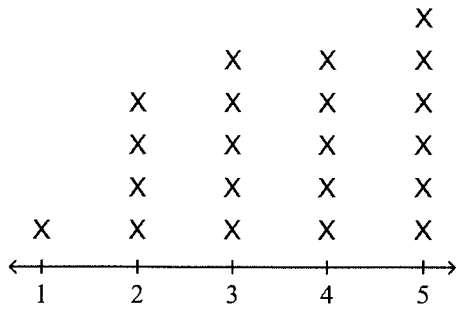
Study Guide Test 11 Data Analysis
Answer Section

1. Mean = 25
   Median = 26
   Mode = no mode
2. Mean = 7.8
   Median = 8
   Mode = 9
3. Mean = 8
   Median = 8
   Mode = No mode
4. Fans at a country music concert because if they are attending that concert they would most likely love country music.
5. the general shopping public
6. television viewers
7. the general listening public
8. the general golfing public
9. the golfers playing the course that weekend
10. the doctor's patients
11. the viewers of the television station
12. every 10th customer in the store
13. voluntary response
14. random sampling
15. convenience sampling
16. stratified sampling
17. random sampling
18.



Quiz Scores

19.



Quiz Scores

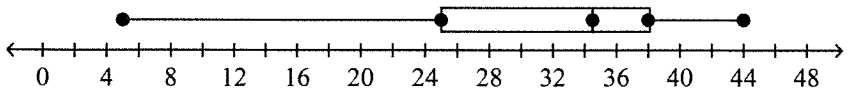
20.

Stem-and-Leaf Plot	
Stem	**Leaf**
1	1 1 9
2	3 4 5 6
3	1 2 5
4	2 8
	Key: 1 | 1 = 11

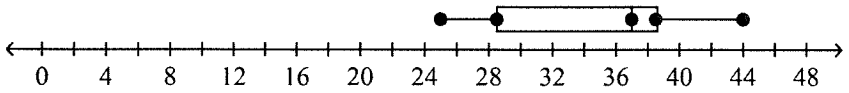
21.

Stem-and-Leaf Plot	
Stem	**Leaf**
1	5 5 6
2	7 7 8 9
3	1 9 9
4	8 8
	Key: 1 | 5 = 15

22. Sample answer:
With the outlier:

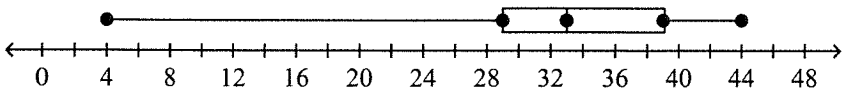


Without the outlier:

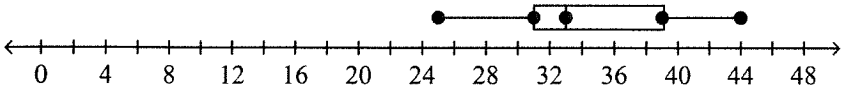


The lowest quartile is much shorter when the outlier is not included. The data are not spread out as much.

23. Sample answer:
With the outlier:

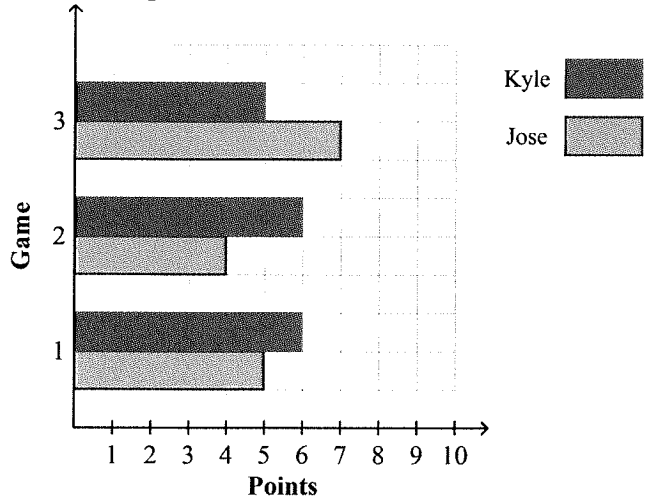


Without the outlier:

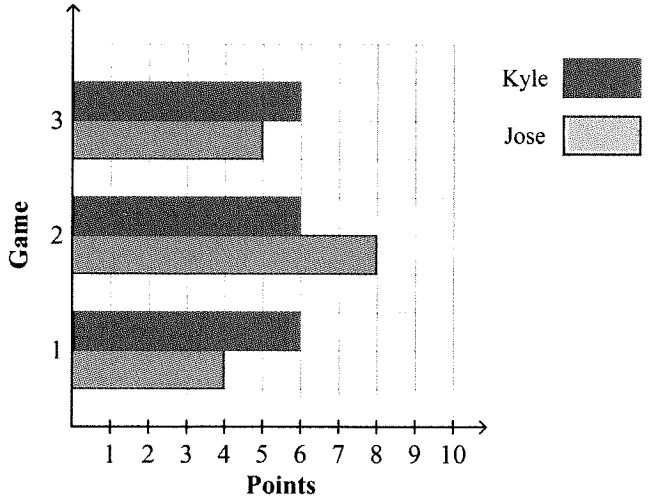


The lowest quartile is much shorter when the outlier is not included. The data are not spread out as much.

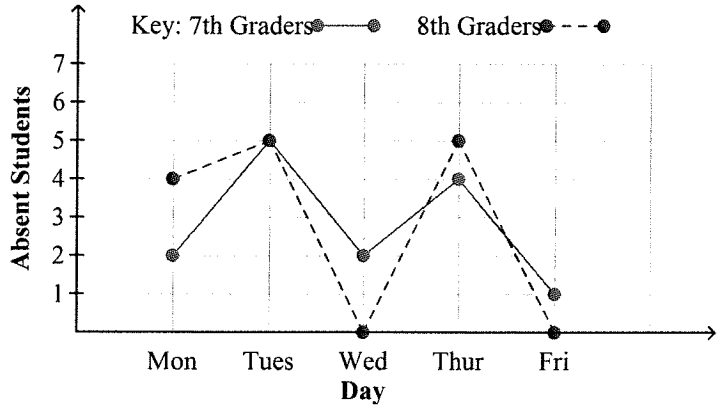
24.

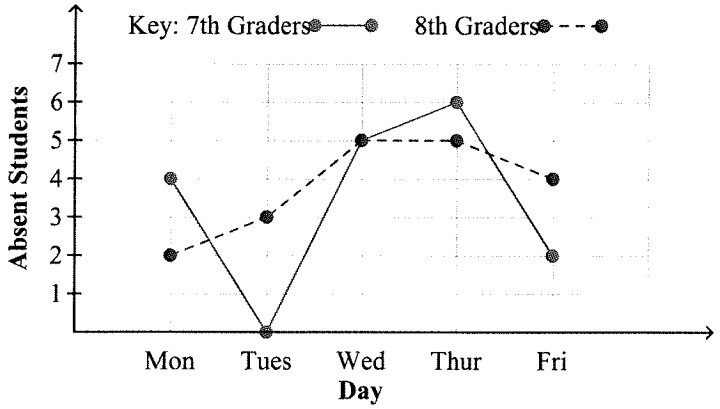


25.

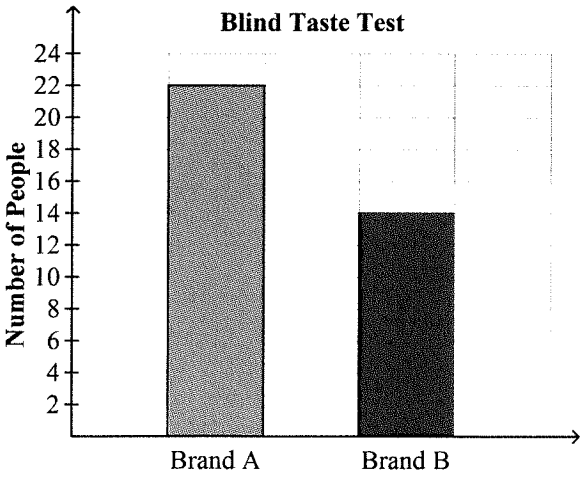


26. 29 students took the exam, and 10 students earned a grade in the 70s.
27. 29 students took the exam, and 11 students earned a grade in the 80s.

28. 

29. 

30. Sample answer:
The vertical scale makes it appear that Brand A is three times as popular as Brand B. A more accurate representation of the results is shown below.



31. Sample answer:
The vertical scale makes it appear that Brand B is twice as popular as Brand A. A more accurate representation of the results is shown below.