Course 1 Unit 6 Practice

LESSON 27-1

1. **Construct viable arguments.** Which of the following is a statistical question? Explain your choice.

   A. What month is it?

   B. On what day of the week does Thanksgiving fall?

   C. On what day of the week is your birthday?

   D. None of the above

2. Which of the following is NOT a statistical question? Explain your choice.

   A. How many rooms are in the homes of the students in your class?

   B. How many minutes did it take the members of your class to get to school today?

   C. How many pets does each of the students in your class own?

   D. How many days are in a week?

Suppose you are watching a parade that includes floats, animals, antique cars, and bands.

3. Write a question about the parade that is NOT a statistical question.

4. Write a question about the parade that is a statistical question.

5. **Make use of structure.** Write a question about the parade that will have a distribution with high variability.

LESSON 27-2

6. There were 25 red markers in the tub, there were 32 blue markers in the tub, and there were 38 green markers in the tub.

   a. Construct a bar graph for this information.

   b. What is the mode of this data? Explain your thinking.

7. **Reason quantitatively.** Construct a relative frequency chart and percent bar graph for this data showing the apps that Nick has on his tablet.

Apps on Tablet		Count	Fraction	Percent
	Educational	12		
	Social	11		
	Movies/TV	5		
	Photos/Pictures	7		

8. Create a dot plot for the following pulse rates, in beats per minute, for a group of 28 students.

68	68	76	68	66	80	72
82	68	66	72	68	66	84
66	68	76	80	68	80	84
80	72	66	68	76	72	68

9. Construct viable arguments. Describe the distribution of the pulse rate data from Item 9 above. What conclusions might you draw from the graph?

10. Below is a table showing the speeds at which some animals move.

Animal	Speed (mph)	Animal	Speed (mph)
Cheetah	70	Kangaroo	30
Pronghorn antelope	61	Grizzly bear	30
Lion	50	Wart hog	30
Elk	45	White-tailed deer	30
Coyote	43	Human	28
Ostrich	40	Elephant	25
Zebra	40	Black mamba snake	20
Mule deer	35	Squirrel	12
Rabbit	35	Pig	11
Giraffe	32	Chicken	9
Reindeer	32	House mouse	8

a. Create a stem plot using the speeds of a number of animals.

b. Make use of structure. What is one advantage of viewing this data in a stem plot instead of in a table?

LESSON 27-3

James Middle School is deciding how many school T-shirts to order. The student council sent out a survey to each homeroom to determine how many students were planning on buying a T-shirt and got the following information.

10	15	11	20	8	11
16	14	10	12	13	10
15	16	15	14	12	16
13	14	13	12	15	14

11. What type of graph can be used to display this data?

12. Model with mathematics. Create a graph for this data.

13. Which choice below best describes the distribution of this data?

   A. symmetrical

   B. skewed left

   C. skewed right

   D. uniform

14. Does the graph help the student council decide how many T-shirts to order?

15. Make sense of problems. Recommend to the student council how many T-shirts to buy. Explain your thinking using the graph.

LESSON 28-1

Sacorra earned the following test scores: 89, 92, 86, 97, 91, 83, and 88.

16. Calculate the mean.

17. Make sense of problems. Sacorra's teacher entered her scores in the computer as 89, 92, 68, 79, 91, 83, and 88. How does her teacher's error affect her grade?

18. Construct a dot plot representing the scores that Sacorra got on her tests.

19. In a few sentences, describe what the dot plot shows.

20. Reason abstractly. Does Sacorra's data contain any outliers? Explain your thinking.

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LESSON 28-2

Dr. Vizcarra weighed all of the dogs that came into his veterinary service on one day. The weights were 28, 8, 36, 45, 32, 38, 45, 29, 31, and 33.

21. Construct a dot plot of this data.

22. What are the outliers in this data set?

23. Find the median of the data with the outliers and without the outliers. Explain how the outlier affects the median.

24. Reason quantitatively. Find the mean of this data with the outliers and without the outliers. Explain how the outlier affects the mean.

25. Reason abstractly. Why is the mean affected more by the outlier than the median is?

LESSON 28-3

The Nielsen Company published information on the television viewing habits of a sample of 20 people in hours per week.

25	21	27	32	33
26	25	31	15	5
34	26	32	28	16
30	28	30	20	21

26. Create a dot plot using the data in the table above.

27. What shape does this distribution have?

28. Determine the mean and the median of the data.

29. Construct viable arguments. Which number is the most accurate reflection of this distribution? Explain your thinking.

30. Make use of structure. Suppose a data set is skewed to the right. How would the mean and the median compare? Explain your thinking.

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LESSON 29-1

31. Find the range for this data set: 89, 92, 86, 97, 91, 83, and 88.

32.

Data 1 Dot Plot

0.5   0.55   0.6   0.65   0.7   0.75   0.8   0.85   0.9
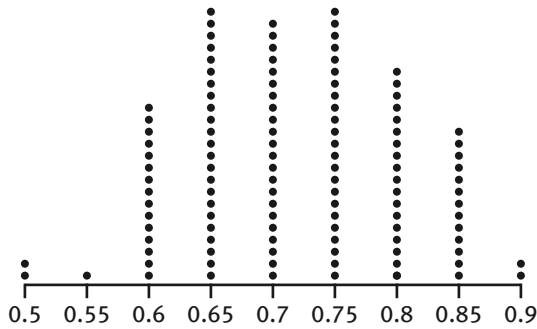
a. Find the range for this data set.

b. What is the shape of this data set?

33.

```
Stem | Leaf
   0 | 1  3  6
   1 | 2  8
   2 | 3  5  6  7
   3 | 0  0  9      Key: 1|2 =12
```

a. What is the range for this data set?

b. Create a dot plot for this data set.

34. The table below shows the weights of cats at a shelter.

8	12	16	9
6	10	9	9
9	8	11	10

a. What is the range of the cats' weights?

b. Create a dot plot of the cats' weights.

**c.** What is the shape of this distribution?

LESSON 29-2

35. A class kept track of the ounces of water that they drank daily. The class mean was 44 ounces. Complete this table to find the distance from the mean for each student's response.

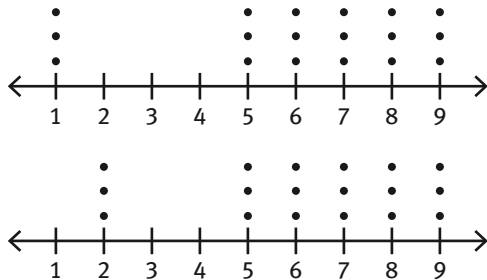| Ounces of Water Drunk Daily	Distance from the Mean
64	
20	
30	
35	
60	
55	
56	
42	
38	

36. Persevere in solving problems. Find the MAD for the data in the table above.

37. What does this MAD tell you about the variability of this data set?

38. Make use of structure. Which of these two dot plots has the greater MAD?
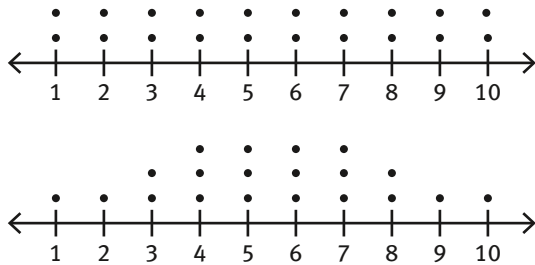
39. Which of these two dot plots has the least MAD?

LESSON 29-3

The number of gold medals won by countries participating in the 2012 Olympics is shown in the table below.

46	4	13	11	8
7	6	5	4	4
24	11	8	7	7
6	5	3	3	3
3	3	29	38	4

40. Create a dot plot for the number of gold medals won by countries participating in the 2012 Olympic Games.
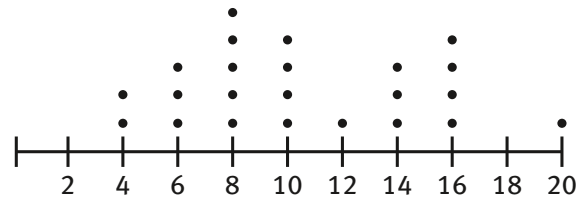
41. Determine the median value.

42. Attend to precision. Determine the lower and upper quartile values.
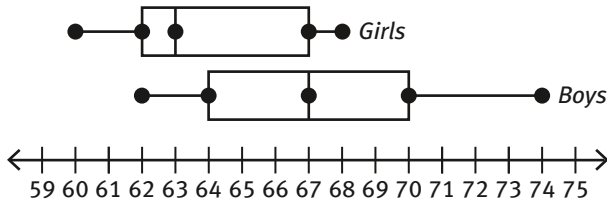
43. Determine the IQR.

44. Make use of structure. How many countries won more than the median value of gold medals?

LESSON 30-1

45. Determine the five-number summary for the data in the dot plot above.

46. Model with mathematics. Create a box plot for the data in Item 45 above.

47. What is the median height for girls shown in the box plot above?

48. What is the least height for boys shown in the box plot above?

49. What is the greatest height for girls shown in the box plot above?

50. Make use of structure. Compare the two box plots above showing the heights of girls and boys in a seventh-grade math class.
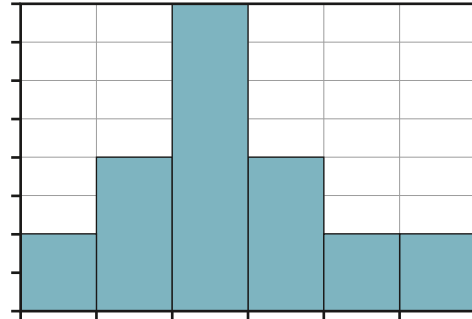
LESSON 30-2

51. Which of the data below can be represented in a histogram?

   A. favorite type of juice

   B. amount of time to get to school daily

   C. color of hat

   D. all of the above

52. Model with mathematics. Students in Ms. Flink's class recorded their shoe sizes. Construct a histogram for the data shown in the table below.

5	8	12	8	5
7	10	11	9	6
4	12	9	10	8

The data below is the number of television sets found in the homes of students in a classroom. The histogram for this distribution is partially completed.

1	1	2	2	2
2	3	3	3	3
3	3	3	3	4
4	4	4	5	5
6	6			

53. Label each axis.

54. Title the histogram.

55. Construct viable arguments. Use several sentences to describe the distribution.

LESSON 30-3

Animal	Speed (mph)	Animal	Speed (mph)
Cheetah	70	Kangaroo	30
Pronghorn antelope	61	Grizzly bear	30
Lion	50	Wart hog	30
Elk	45	White-tailed deer	30
Coyote	43	Human	28
Ostrich	40	Elephant	25
Zebra	40	Black mamba snake	20
Mule deer	35	Squirrel	12
Rabbit	35	Pig	11
Giraffe	32	Chicken	9
Reindeer	32	House mouse	8

56. Attend to precision. Construct a frequency table with an interval of ten for the animal speed data above.

57. Construct a histogram based on the frequency table with an interval of 10.

58. Construct a frequency table with an interval of twenty for the animal speed data above.

59. Construct a histogram based on the frequency table with an interval of 20.

60. Construct viable arguments. Compare the shapes of the histograms you constructed in Items 57 and 59. Which do you think gives a more accurate summary of the speeds of various animals? Explain your thinking.