

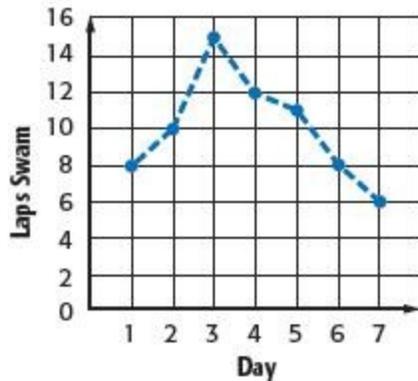
11-2 Median and Mode

Find and compare median and mode for the set of data.

1. math test scores: 97, 85, 92, 86

ANSWER:

89; none; There is no mode to compare.



- 2.

ANSWER:

median: 10; mode: 8; The median is 2 laps more than the mode.

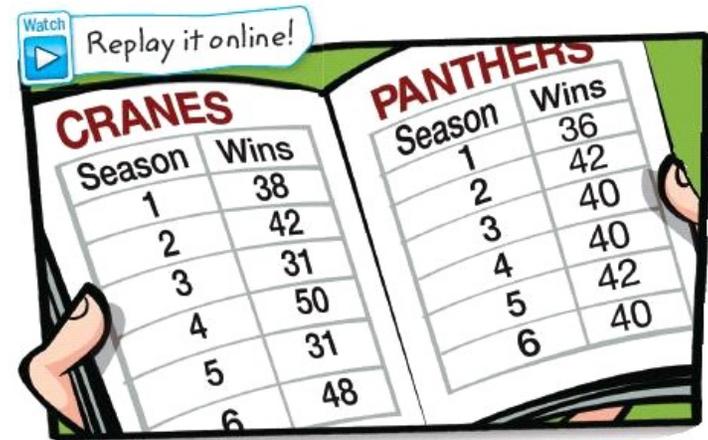
3. Describe the average speeds using the measures of center.

Average Speeds (mph)			
40	52	44	46
52	40	44	50
41	44	44	50

ANSWER:

The values are close. The median and mode are equal, 44 mph, and the mean, 45.58 mph, is slightly more. The data follows the measures of center in that they are close to the measures of center.

4. **Model with Mathematics** Refer to the graphic novel frame for Exercises a–b.



- a. Find the median and mode for each team's wins.
 b. Which team had the better record? Justify your response.

ANSWER:

- a. Cranes: median: 40, mode: 31; Panthers: median: 40, mode: 40
 b. Sample answer: The Panthers had the better record. Even though the mean and median are the same, the Panthers' mode is higher.

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5. A Louisville newspaper claims that during seven days, the high temperature in Lexington was typically 6° warmer than the high temperature in Louisville. What measure was used to make this claim? Justify your answer.

Daily High Temperatures ($^\circ\text{F}$)							
Louisville				Lexington			
75	50	80	72	80	73	75	74
70	84	70		71	76	76	

ANSWER:

Mode; The mode of the temperatures in Louisville is 70° , and the mode for Lexington's temperatures is 76° . Since $76^\circ - 70^\circ = 6^\circ$, the mode was used to make this claim.

6. **Use Math Tools** Use the Internet to find the high temperatures for each of the last seven days in a city near you. Then find the median high temperature.

ANSWER:

See student's work.

7. **Persevere with Problems** The ticket prices for a concert series were \$12, \$37, \$45, \$18, \$8, \$25, and \$18. What was the ticket price of the eighth and final concert in this series if the set of 8 prices had a mean of \$23, a mode of \$18, a median of \$19.50?

ANSWER:

\$21

8. **Construct an Argument** One evening at a local pizzeria, the following number of toppings were ordered on each large pizza.
3, 0, 1, 1, 2, 5, 4, 3, 1, 0, 0, 1, 1, 2, 2, 3, 6, 4, 3, 2, 0, 2, 1, 3
Determine whether each statement is *true* or *false*. Explain your reasoning.

- The greatest number of people ordered a pizza with 1 topping.
- Half the customers ordered pizzas with 3 or more toppings, and half the customers ordered pizzas with less than 3 toppings.

ANSWER:

- True; the mode of the data set is 1.
- False; the median of the data is 2.

9. **Justify Conclusions** In the data set {3, 7, 4, 2, 31, 5, 4}, which measure best describes the set of data: mean, median, or mode? Explain your reasoning.

ANSWER:

Sample answer: The median or mode best represents the data. The mean, 8, is greater than all but one of the data values.

10. The lengths of the 5 long jumps at track practice were 14.5 feet, 13.7 feet, 14.1 feet, 14.9 feet, and 13.8 feet. What would the sixth length have to be to have a mean length of 14.1 feet?
- 14.8 feet
 - 14.1 feet
 - 13.6 feet
 - 12.9 feet

ANSWER:

C

Find and compare median and mode for the set of data.

11. age of employees: 23, 22, 15, 44, 44

ANSWER:

median: 23; mode: 44; The mode is 21 years more than the median.

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12. minutes spent on homework: 18, 20, 22, 11, 19, 18, 18

ANSWER:

18; 18; The median and mode are equal.



13.

ANSWER:

median: 12.5; mode: none; There is no mode to compare.

14. Describe the test grades using the measures of center.

Test Grades			
100	77	80	65
87	85	85	82
100	97	95	75

ANSWER:

The mean, 85.67, and median, 85, are very close. One of the modes, 85, is equal to the median, but the other is the highest score. The data follows the measures of center in that they are close to the measures of center.

15. **Be Precise** Fill in the graphic organizer with the description. The first one is done for you.

measures of center	⇒	numbers used to describe the center of data
mean	⇒	
median	⇒	
mode	⇒	

ANSWER:

measures of center	⇒	numbers used to describe the center of data
mean	⇒	the average of a data set
median	⇒	the value appearing at the center of a sorted version of a list, or the mean of the two central values, if the list contains an even number of values
mode	⇒	the most frequently occurring number or numbers of a data set

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16. The table shows the number of concerts performed by The Quest. What is the difference between the median number of concerts and the mode number of concerts for 2003–2010?

The Quest			
Year	Number of Concerts	Year	Number of Concerts
2003	142	2007	124
2004	142	2008	138
2005	136	2009	136
2006	136	2010	150

- A. 0
B. 1
C. 4
D. 5

ANSWER:

B

17. **Short Response** The prices of some dinners at the Town Diner are shown in the table.

Dinner	Price(\$)
Turkey	9.90
Cheeseburger	6.75
Chicken Salad	5.29
Spaghetti	8.15

What is the median of the prices in dollars for the meals?

ANSWER:

\$7.45

18. The table shows the number of schools in 12 different counties. What is the median of the data?

Number of Schools					
4	3	6	10	3	14
8	5	7	11	7	8

- F. 4 H. 7
G. 6 I. 8

ANSWER:

H

Find the greatest number in the data set.

19. {23, 35, 31, 28, 26, 34}

ANSWER:

35

20. {56, 58, 49, 50, 56, 57}

ANSWER:

58

21. {78, 81, 79, 84, 82, 83}

ANSWER:

84

Find the least number in the data set.

22. {62, 58, 56, 61, 59, 57}

ANSWER:

56

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23. {24, 29, 22, 26, 23, 24}

ANSWER:

22

24. {56, 58, 52, 54, 53, 57}

ANSWER:

52

25. The table shows the distances Mari biked each day. What is the greatest distance she biked during the week?

Day	Distance (miles)
Monday	5.2
Tuesday	3.5
Wednesday	4.9
Thursday	3.8
Friday	3.2

ANSWER:

5.2 miles

26. It is 143 miles from Columbus to Cleveland and 107 miles from Columbus to Cincinnati. How much further is it from Columbus to Cleveland than Columbus to Cincinnati?

ANSWER:

36 miles