



## Mean, Median, Mode, and Range

The **mean** (or average) is found by dividing the sum by the number of data values. When the data is arranged in numerical order, the middle one is the **median**. The value that occurs most frequently is the **mode**. The **range** is the difference between the greatest and the least value.

Mike's test scores in spelling were 94, 88, 72, 90, 70, 89, and 70.

1. What was his mean score? \_\_\_\_\_
2. What was his median score? \_\_\_\_\_
3. What was his mode score? \_\_\_\_\_
4. Which score (mean, median, mode) do you think he would like to see on his report card? Why? \_\_\_\_\_
5. What was the range of Mike's spelling scores? \_\_\_\_\_

The chef at Bistro Café found it challenging to satisfy all his diners. The ages of the diners one evening were as follows: 87, 58, 54, 61, 3, 35, 31, 28, 3, 16, and 68.

6. What is the mean age? \_\_\_\_\_
7. What is the median age? \_\_\_\_\_
8. What is the mode? \_\_\_\_\_
9. Based on the mean age, what should the chef serve, steak and lobster or macaroni and cheese? \_\_\_\_\_
10. Based on the mode age, what should be served? \_\_\_\_\_

## Lesson 6.6 Measures of Central Tendency

When interpreting data, we look at **measures of central tendency**. These measures allow different observations about the numbers in a set of data. Each one is useful for a different reason.

Mr. Park's class received the following scores on the latest math test:

85, 88, 92, 72, 95, 84, 84, 82, 97, 67, 90, 84, 87, 90, 78, 80, 88, 90, 84, 78

What was the **mean**, or **average**, score? Add all of the scores and divide by the total number of scores:  $1695 \div 20 = 84.75$ .

What was the **median** score? The median is the **number in the middle**. Line up the numbers in order:

67, 72, 78, 78, 80, 82, 84, 84, 84, 84, 85, 87, 88, 88, 90, 90, 90, 92, 95, 97

Because there are an even number of scores, the median is the average of the two middle numbers.  $(84 + 85) \div 2 = 84.5$

What is the **mode**, or **most common number**? Look at the numbers in order again.

The numbers 78, 84, 88, and 90 each appear more than once, but 84 appears the most often.

What is the **range**? Subtract the lowest score from the highest:  $97 - 67 = 30$ .

Find the measures of central tendency for each of the following data sets.

- | a   | b   |
|---|---|
| 1. Cesar's Test Scores: 84, 80, 78, 90, 76, 88, 86, 80, 94<br>How many scores are included? _____<br>Rewrite them in order:<br>_____            | mode: _____<br>median: _____<br>range: _____<br>mean: _____ |
| 2. Basketball Team Scores: 78, 77, 81, 84, 67, 78, 75, 82<br>How many scores are included? _____<br>Rewrite them in order:<br>_____             | mode: _____<br>median: _____<br>range: _____<br>mean: _____ |
| 3. Daily Theater Attendance: 124, 127, 111, 119, 107, 99, 115<br>How many days are included? _____<br>Rewrite the numbers in order:<br>_____    | mode: _____<br>median: _____<br>range: _____<br>mean: _____ |
| 4. Marisa's Daily Tips: \$15, \$21, \$18, \$13, \$21, \$22, \$25<br>How many days are included? _____<br>Rewrite the numbers in order:<br>_____ | mode: _____<br>median: _____<br>range: _____<br>mean: _____ |

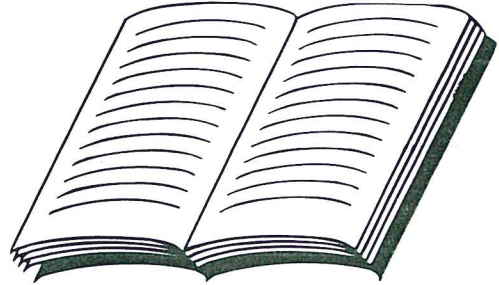


# Mean, Median, Mode, and Range

Twelve students at Park High School were asked how many books they read in the past year. They responded with the following totals:

45, 38, 25, 59, 101, 49, 87, 75, 77, 59, 48, 81

► Use the students' totals to answer the questions.



1. What is the mean of these numbers?

\_\_\_\_\_

2. Write these numbers in order from least to greatest in the chart to the right.

3. What is the mode? \_\_\_\_\_

4. What is the median? \_\_\_\_\_

5. What is the range of these numbers?

\_\_\_\_\_

6. Why do you think the range of these numbers is so great?

\_\_\_\_\_

\_\_\_\_\_

7. How many books do YOU read in a year?

\_\_\_\_\_

Order	Number
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Name \_\_\_\_\_

Date \_\_\_\_\_

**LESSON**  
**13.6**

## Practice B

*For use with pages 875–878*

**Find the mean, median, and mode(s) of the data.**

1. 6, 1, 3, 8, 5, 11, 1, 5

2. 60, 81, 52, 75, 59, 81

3. 15, 27, 10, 25, 9, 22, 25

4. 23, 6, 8, 14, 28, 8, 13, 28

5. 16, 11, 14, 30, 22, 9, 19, 15

6. 4.2, 2.2, 3.7, 2.8, 1.1

**For the set of data, determine which measure of central tendency best represents the data.**

7. 89, 86, 96, 87, 100, 86

8. 38, 35, 40, 36, 36, 33, 42, 37, 39, 34

9. 50, 47, 48, 49, 72, 47, 54, 50

10. 115, 112, 127, 116, 123, 113

11. 87, 77, 151, 105, 65, 141, 104, 166

12. 100, 106, 180, 41, 161, 292, 116, 213

**Find the range and mean ~~absolute deviation~~ of the data. Round to the nearest hundredth, if necessary.**

13. 10, 7, 13, 10, 8

14. 110, 114, 104, 108, 106

15. 87, 75, 85, 77, 74, 82

16. 15, 17, 15, 17, 21, 17, 15, 23

17. 40, 46, 41, 46, 49, 49, 46, 44, 44

18. 50.8, 51.6, 51.9, 52, 52.5, 52.8, 53.1