

Mean, Median, Mode and Range

height in ft.
31 ft.
90 ft.
56 ft.
79 ft.
89 ft.
88 ft.
67 ft.
75 ft.
81 ft.
91 ft.
89 ft.

1) Every year in Mr. Hedley's class, students make rockets out of empty 2-liter bottles. Classrooms had a contest to see which classroom's rockets went higher. In the past, classrooms whose rockets went up at least a median height of 85 ft. usually won the contest. The data in the chart represent Mr. Hedley's first period. Does this class have a good chance to win? Answer your question by finding the median and explain your answer.

Place your data in order from least to greatest.

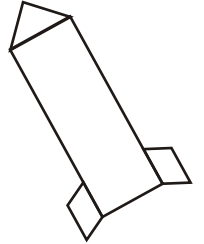
31 ft. 90 ft. 56 ft. 79 ft. 89 ft. 88 ft. 67 ft. 75 ft. 81 ft. 91 ft. 89 ft.

31 , 56 , 67 , 75 , 79 , 81 , 88 , 89 , 89 , 90 , 91

After you place in order you should make sure you have not accidentally forgotten one or more pieces of data!

31 , 56 , 67 , 75 , 79 , 81 , 88 , 89 , 89 , 90 , 91

81 is in the middle so it is the median. Based on past results, Mr. Hedley's first period probably will not win.



2) Using the data in the chart given in number one, what was the mean height of the rocket launches?

The mean is 76 ft.

3) What is the mode of the data in problem #1?

The mode is 89 feet.

Here are the scores that 9 students earned on a math quiz:

15 , 67 , 70 , 70 , 75 , 82 , 85 , 85 and 90.

4) What is the mean of the 9 scores?

The mean score of the nine quizzes is 71.

5) If the extreme outlier was eliminated from the data set, what would the new mean be?

After eliminating the outlier score of 15, the new mean would increase to 78.

6) How did the mean of the original 9 scores compare with the mean of the final 8 scores? Explain your answer.

The final mean is higher than the original mean. When the outlier was included in the data the mean was much lower. When the outlier was not considered in the mean, the mean score increased from 71 to 78.

Day	Temp.
Monday	60° F
Tuesday	60° F
Wednesday	54° F
Thursday	68° F
Friday	58° F
Saturday	65° F
Sunday	62° F

7) The mean, median and mode are all measures of central tendency. Central tendency means what usually happens in the majority of cases. Would the mean, median or mode have the highest measure of central tendency? Show your work for each of the three measures of central tendency.

Mean **Median** **Mode**
61° F **60° F** **60° F**

The mean is higher than the median and mode for this data set.

8) Jake had the following 6 scores on his quizzes this quarter. 75 , 65 , 75 , 0 , 85 , 90
 If the outlier of the data set were omitted(eliminated), which measure(s) of central tendency would change? After choosing your answer below, explain why you chose your answer. Show your work in the space provided below.

a) the median	Mean with the zero	Median with the zero	Mode with the zero
b) the mode	65	0 , 65 , 75 75 , 85 , 90	75
c) the mean		_____ 75	
d) all of them	Mean without the zero	Median without the zero	Mode with the zero
	78	65 , 75 , (75) , 85 , 90	75
		_____ 75	

Here are the 8 scores that Kendra received on her 8 quizzes this quarter.

74, 90, 85, 80, 87, 78, 100 and 90

9) What was Kendra's mean score?

Kendra's mean score is 85.5%

10) What was Kendra's median score? **74 , 78 , 80 , 85 , 87 , 90 , 90 , 100**

Kendra's median score is 86%

Because the data set is even, there are two middle scores. You must find the number which would be in the middle of the two numbers. In this case it is 86.