Mean, Median, Mode, and Range

By Jennifer Del-Castillo
John F. Kennedy Middle School

Mean is the average of a set of data. To calculate the mean, find the sum of the data and then divide by the number of data.

12, 15, 11, 11, 7, 13

First, find the sum of the data.

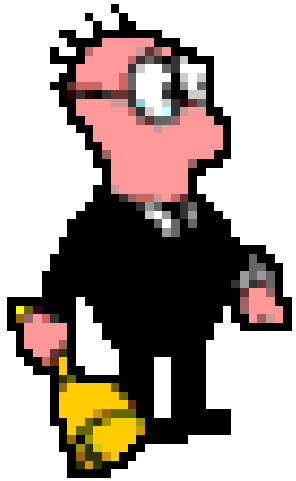
$12 + 15 + 11 + 11 + 7 + 13 = 69$

Then divide by the number of data.

$69 / 6 = 11.5$

The mean is 11.5

You can remember that “mean” means to average because the “mean teacher averages your grade.”



You try the next one!

An electronics store sells CD players at the following prices: $350, $275, $500, $325, $100, $375, and $300. What is the mean price?

Find your answer before clicking!

$350 + $275 + $500 + $325 + $100 +$375 + $300 =

$2225

$2225 / 7 = $317.86

The mean or average price of a CD player is $317.86.

Median is the middle number in a set of data when the data is arranged in numerical order.

12, 15, 11, 11, 7, 13

First, arrange the data in numerical order. 7, 11, 11, 12, 13, 15

Then find the number in the middle or the average of the two numbers in the middle.

$11 + 12 = 23$ $23 / 2 = 11.5$

The median is 11.5

An electronics store sells CD players at the following prices: $350, $275, $500, $325, $100, $375, and $300. What is the median price?

Find your answer before clicking!

First place the prices in numerical order.

$100, $275, $300, $325, $350, $375, $500

The price in the middle is the median price.

The median price is $325.

The mode is the number that occurs the most.

12, 15, 11, 11, 7, 13

The mode is 11.

Sometimes a set of data will have more than one mode.

For example, in the following set the numbers both the numbers 5 and 7 appear twice.

2, 9, 5, 7, 8, 6, 4, 7, 5

5 and 7 are both the mode and this set is said to be bimodal.

Sometimes there is no mode in a set of data.

3, 8, 7, 6, 12, 11, 2, 1

All the numbers in this set occur only once therefore there is no mode in this set.

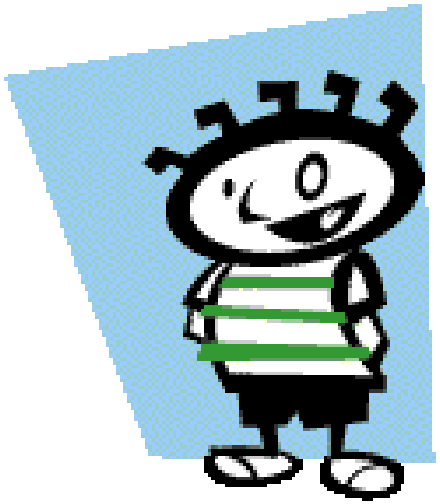
$100, $275, $300, $325, $350, $375, $500

What is the mode ?

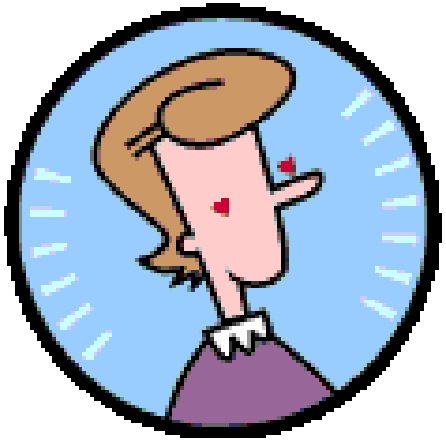
Find your answer before clicking!

$100, $275, $300, $325, $350, $375, $500

There is no mode!



You can remember that mode means the number that occurs the most because “mode” and “most” sound alike!



The range of a set of data is the difference between the largest and the smallest number in the set.

For example, consider the following set:

40, 30, 43, 48, 26, 50, 55, 40, 34, 42, 47, and 50

To find the range you would take the largest number, 55, and subtract the smallest number, 26.

$$55 - 26 = 29$$

The range is 29!

Mean → The average

Median → The number or average of the numbers in the middle

Mode → The number that occurs most

Range → Largest # - Smallest #

Mean Absolute Deviation

1. Find the **mean** of the data.
2. Subtract the mean from each value – the result is called the **deviation from the mean**.
3. Take the absolute value of each deviation from the mean.
4. Find the sum of the absolute values.
5. Divide the total by the number of items.

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 20.

Find the **mean**:

(85+92+88+80+91+20)/6=76

2. Find the **deviation from the mean**:

85-76=9 92-76=16 88-76=12

80-76=4 91-76=15 20-76=-56

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 20.

3. Find the absolute value of each deviation from the mean:

$|85-76|=9$ $|92-76|=16$ $|88-76|=12$

$|80-76|=4$ $|91-76|=15$ $|20-76|=56$

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 20.

4. Find the sum of the absolute values:

$9 + 16 + 12 + 4 + 15 + 56 = 112$

5. Divide the sum by the number of data items:

$112/6 = 18.7$

The **mean absolute deviation** is **18.7**.

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 74.

Find the **mean**:

(85+92+88+80+91+74)/6=85

2. Find the **deviation from the mean**:

85-85=0 92-85=7 88-85=3

80-85=-5 91-85=6 74-85=-11

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 74.

3. Find the absolute value of each deviation from the mean:

$$|0| = 0 \quad |7| = 7 \quad |3| = 3 \quad |-5| = 5 \quad |6| = 6 \quad |-11| = 11$$

Find the mean absolute deviation

Test scores for 6 students were :

85, 92, 88, 80, 91 and 74.

4. Find the sum of the absolute values:

$0 + 7 + 3 + 5 + 6 + 11 = 32$

5. Divide the sum by the number of data items:

$32/6 = 5.3$

The **mean absolute deviation** is **5.3**.