



Quick Review

The mean, median, and mode are all measures of central tendency of a set of data.

However, not all of the measures describe the data in the same way.

- Zoe's hamster has had several litters of babies.

Zoe recorded the number of babies in each litter: 17, 16, 15, 12, 5, 5, 4

There are 7 numbers in the set.

Mean: $\frac{17 + 16 + 15 + 12 + 5 + 5 + 4}{7} = \frac{74}{7}$, which is about 10.6

The mean is 10.6 babies in a litter.

The numbers of babies in order from least to greatest are: 4, 5, 5, 12, 15, 16, 17

The middle number is 12.

So, the median is 12 babies in a litter.

The number 5 occurs most often.

So, the mode is 5 babies in a litter.

Four of the 7 litters have numbers greater than 5.

So, the mode is not representative of the data.

The mean, 10.6, is not one of the data.

The median, 12, is one of the data.

The number of data greater than the median is equal to the number of data less than the median.

So, the median would be the best measure of central tendency used to describe the "average" litter size of the hamster.

- Since the mean, median, and mode are all averages, it is important to know which one best represents the data.
- When the data represent measures such as clothing sizes, the mode best represents the data. A store needs to re-stock the sizes that sell the most.
 - When the numbers in the data set are not very different from each other, the mean is the best average.
 - When the numbers in a data set are very different, the median is the best average.

The numbers in the data set of Zoe's hamster's litter size are very different, so the median is the best average.

Practice

1. The term "average" can refer to the mean, median, or mode.

Which average is likely being referred to in each case?

- a) the average size of running shoes sold in one month _____
- b) the average daily rainfall in Vancouver during October _____
- c) the average amount spent in dollars by customers at a grocery store _____
- d) the average age of people buying skateboards _____

2. There are five numbers in a set of data.

The two modes are 0 and 2.

Both the median and the mean are 2.

Find the 5 numbers.

H I N T

For 5 numbers in a set of data, the median is the middle number.



3. A cereal manufacturer says that each box of cereal contains an average mass of 50 g of raisins. A random check is made on 20 boxes.

The table shows the results.

Raisins per 400 g Box	
Amount (g)	Number of Boxes
48	1
49	4
50	4
51	6
52	5

- a) Calculate the mean, median, and mode of the data.

Mean: _____

Median: _____

Mode: _____

- b) Is the manufacturer's claim acceptable?

Justify your answer.

4. A radio station has a weekly Song War between the top two hit songs. Listeners have all week to call in their votes. Each day, the station rounds the number of calls it receives to the nearest 10 and records the number of calls.

Votes for Song A and Song B		
Day	Song A	Song B
Monday	120	200
Tuesday	100	130
Wednesday	130	90
Thursday	250	80
Friday	100	200

- a) Find the mean, median, and mode votes of Song A.

Mean: _____

Median: _____

Mode: _____

- b) Find the mean, median, and mode votes of Song B.

Mean: _____

Median: _____

Mode: _____

- c) Which song is more popular? Explain your choice.
