

Mode, Median and Mean

There are three useful measures of average:

The Mode is the most common.

The Median is found by writing the list in order. For a list of numbers – which we typically have – we write them in order of size from smallest to largest. If the list has an “odd number of numbers” the median is the middle number. For example:

2, 5, 7, 8, 10

The middle number is 7 so the median is 7.

If the list has an “even number of numbers” the median is the average of the middle two numbers. For example:

1, 2, 4, 6, 8, 9

$$\frac{4+6}{2} = 5$$

The two middle numbers are 5 and 6 so the average is

To find the mean, which is the intuitive average we add all the numbers up and divide by how many numbers there are.

Example: Find the mode, median and mean of 5, 4, 6, 3, 8, 3, 9.

First we sort the list into numerical order

3, 3, 4, 5, 6, 8, 9

The most common number is 3 so the mode is 3

There are 7 numbers in the list and the middle number and median is 5.

$$\frac{3+3+4+5+6+8+9}{7} = \frac{38}{7} = 5.43$$

The mean is to two decimal places.

Example: Find the mode median and mean of 6, 4, 11, 12, 5, 5, 9, 9.

First we sort the list into numerical order

4, 5, 5, 6, 9, 9, 11, 12

5 and 9 both appear twice so there is no mode.

There are 8 numbers in the list and the middle numbers are 6 and 9 so the median is

$$\frac{6+9}{2} = 7.5$$

The mean is $\frac{4+5+5+6+9+9+11+12}{8} = \frac{61}{8} = 7.5625$ exactly.