

## Mean, Mode, Median, Range and Probability.

Mean - This is the type of average that occurs when you add up all the numbers in the data set and divide by the number of numbers that's there.

Example 1: Find the mean of the following numbers.

1, 2, 3, 4, 5, 6, 7, 8, 9

$$\text{Mean} = \frac{1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9}{9}$$

$$\text{Mean} = 5$$

Mode - This is the type of average that occurs when you have a number that occurs most in a list.

Example 2: Find the mode of the following numbers.

1, 2, 3, 4, 5, 6, 7, 7, 8

$$\text{Mode} = 7$$

Median - This is the type of average that occurs when you are looking for the middle number in a list.

Example 3: Find the median of the following numbers.

1, 2, 3, 4, 5, 6, 7, 8, 9

$$\text{Median} = 5$$

For the median to occur the list must be in ascending numerical order so that the middle value can be found.

Example 4: Find the median of the following numbers.

4, 7, 7, 8, 11, 12

$$\text{Median} = \left( \frac{7 + 8}{2} \right)$$

$$\text{Median} = 7.5$$

When you have an even number of numbers, to find the median, you must find the **mean** of the two middle numbers in the list. This is because the median falls between two numbers.

Example 5: Find the range of the following numbers.

5, 6, 1, 7, 9, 1, 2, 3, 56

Range = Highest Value - Lowest Value

Range = 56 - 1

Range = 55

Example 6: What is the probability that when rolling a dice, it lands on a 5

Probability =  $\frac{\text{Number of Favourable Outcomes}}{\text{Number of Total Outcomes}}$

Probability =  $\frac{1}{6}$

Since we only want to roll a 5, and there is only one 5 on a dice the number of favourable outcomes is 1. The number of total outcomes is the number of different ways the dice could roll, which is 6.



