**Mean, Median, and Mode**

The *mean*, *median* and *mode* are types of *average*.  
**Calculating the Mean, Median, and Mode for simple data**

The table below shows how to calculate the mean, median, and mode for two sets of data.  
Set A contains the numbers 2, 2, 3, 5, 5, 7, 8 and Set B contains the numbers 2, 3, 3, 4, 6, 7.

|  |  |  |
| --- | --- | --- |
| **Measure** | Set A **2, 2, 3, 5, 5, 7, 8** | Set B **2, 3, 3, 4, 6, 7** |
| **The Mean** To find the mean, you need to add up all the data, and then divide this total by the number of values in the data. | Adding the numbers up gives: **2 + 2 + 3 + 5 + 5 + 7 + 8 = 32**  There are 7 values, so you divide the total by 7:    **32 ÷ 7 = 4.57...** **So the mean is 4.57** | Adding the numbers up gives: **2 + 3 + 3 + 4 + 6 + 7 = 25**  There are 6 values, so you divide the total by 6:    **25 ÷ 6 = 4.166...**  **So the mean is 4.17** |
| **The Median** To find the median, you need to put the values in order, then find the middle value. If there are two values in the middle then you find the mean of these two values. | The numbers in order: **2 , 2 , 3 , (5) , 5 , 7 , 8**  The middle value is marked in brackets, and it is 5.  **So the median is 5** | The numbers in order: **2 , 3 , (3 , 4) , 6 , 7**  This time there are two values in the middle. They have been put in brackets. The median is found by calculating the mean of these two values:    **(3 + 4) ÷ 2 = 3.5**  **So the median is 3.5** |
| **The Mode** The mode is the value which appears the most often in the data. It is possible to have more than one mode if there is more than one value which appears the most. | The data values: **2 , 2 , 3 , 5 , 5 , 7 , 8**  The values which appear most often are 2 and 5. They both appear more time than any of the other data values.  **So the modes are 2 and 5** | The data values: **2 , 3 , 3 , 4 , 6 , 7**  This time there is only one value which appears most often – the  number 3. It appears more times than any of the other data values.  **So the mode is 3** |

**Practice Question**   
**Work out the mean, median, and mode for the simple data set below.**

A data set contains these 12 values: 3, 5, 9, 4, 5, 11, 10, 5, 7, 7, 8, 10

(a) What is the mean?  
  
(b) What is the median?  
  
(c) What is the mode?  
  
**Mean, Median, and Mode Exercise (12 pts.)**

Calculate the mean, median, mode and range for each set of data below:

|  |  |  |
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| (a) | 3, 6, 3, 7, 4, 3, 9 | Mean = |
|  | Median = |
|  | Mode = |
|  |  |
| (b) | 11, 10, 12, 12, 9, 10, 14, 12, 9 | Mean = |
|  | Median = |
|  | Mode = |
|  |  |
| (c) | 2, 9, 7, 3, 5, 5, 6, 5, 4, 9 | Mean = |
|  | Median = |
|  | Mode = |
|  |  |
| (d) | 6, 13, 7, 3, 5, 8, 6, 5, 1, 8 | Mean = |
|  | Median = |
|  | Mode = |