Statistics lesson 1 - How to find the median.

Magic Monk Tutorials

1 Find the median value from the following: 1, 2, 3, 4, 5, 6, 7, 8, 9

The above values are already ordered. There are 9 values in total. This means the median value will be in the 5th position. The number in the 5th position is 5, and so 5 is the median.

2 Find the median value from the following: 1, 4, 6, 3, 7, 4, 2, 5, 6

The above values are not sorted. When sorted, they are 1, 2, 3, 4, 4, 5, 6, 6, 7.
There are 9 values in total, so the median will be the number at the 5th position, which is 4 in this case. So the median is 4.

3 Find the median value from the following: 948, 187, 332, 320, 634, 908, 610, 965, 849, 653

Firstly, the above values are not ordered. When ordered, they are 187, 320, 332, 610, 634, 653, 849, 908, 948, 965.
Since there are 10 numbers in total, the median will be the midpoint of the middle 2 numbers. Taking the midpoint of the numbers in the 5th and 6th positions, we get $\dfrac{634 + 653}{2} = \dfrac{1287}{2} =$ 643.5.

4 Find the median value from the following: 5, 7, 22, 22, 26, 27, 31, 32, 36, 51, 51, 56, 59, 62, 68, 76, 80, 89, 95, 96, 100

First, we note that the above values are ordered, and there are 21 in total. This means that the median will be the number at the 10th position. This number is 51. Therefore, we have 51 is the median.

5 Out of 10 data points, you know 9 of them, 5, 3, 5, 10, 8, 1, 22, 4, 30. You know the median of the 10 data points is 6. Calculate the value of the missing data point.

First, we will order the above points. We end up with 1, 3, 4, 5, 5, 8, 10, 22, 30. We know that there are 10 data points in total, so the median is the average of the two middle points. We know this median is 6. So we have

$$6 = \frac{\text{point at 5th position} + \text{point at 6th position}}{2}.$$

$12 = $ point at 5th position $+$ point at 6th position

We can conclude that the missing value is the one in the 6th position. This is because if we add in a larger value than 8, we will result in a median of 6.5. If it were less than 5, our median would be 5. So we know that the value at the 5th position must be 5.

$12 = 5 + $ point at 6th position

point at 6th position $= 5$