Cosmo School

CHAPTER-8
INFORMATION AND DATA
CLASS-6
SUB-MATHEMATICS
DATE-13/05/2020
DAY-1

The words **Data** and **Information** may look similar and many people use these words very frequently, But both have lots of differences between

What is Data?

Data is a raw and unorganized fact that required to be processed to make it meaningful. Data can be simple at the same time unorganized unless it is organized. Generally, data comprises facts, observations, perceptions numbers, characters, symbols, image, etc.

What is Information?

Information is a set of data which is processed in a meaningful way according to the given requirement. Information is processed, structured, or presented in a given context to make it meaningful and useful.

Mean:

The **mean/Arithmetic mean or average** of a set of data values is the sum of all of the data values divided by the number of data values.

$$\text{Mean} = \frac{\text{Sum of all data values}}{\text{Number of data values}}$$

Symbolically,

$$\bar{x} = \frac{\sum x}{n}$$

where $\bar{x}$ (read as 'x bar') is the mean of the set of x values,

$\sum x$ is the sum of all the x values, and

n is the number of x values.

Example: 1

The marks of seven students in a mathematics test with a maximum possible mark of 20 are given below:

15 , 13, 18, 16 , 14, 17 , 12

Find the mean of this set of data values.

Solution:

$$\text{Mean} = \frac{\text{Sum of all data values}}{\text{Number of data values}}$$

$$= \frac{15+13+18+16+14+17+12}{7}$$

$$= \frac{105}{7}$$

$$= 15$$

So, the mean mark is 15.

Median:

The **median** of a set of data values is the middle value of the data set when it has been arranged in ascending order. That is, from the smallest value to the highest value.

Example :2

The marks of nine students in a geography test that had a maximum possible mark of 50 are given below:

47, 35, 37 , 32 , 38, 39, 36, 34 , 35

Find the median of this set of data values.

Solution:

Arrange the data values in order from the lowest value to the highest value:

32, 34, 35, 35 , 36, 37, 38, 39, 47

Here, Total number of the data = 9.

If the total number of the data is odd.

Then median $= \frac{\text{number of data} +1}{2}$ term

$$= \frac{9+1}{2} \text{ term}$$

$$= 5 \text{ term}$$

Therefore median = 36 (Ans.)

Note:

If the number of values in the data set is even, then the **median** is the average of the two middle values.

Example :3

Find the median of the following data set:

12   18   16   21   10   13   17   19

Solution:

Arrange the data values in order from the lowest value to the highest value:

10   12   13   16   17   18   19   21

The number of values in the data set is 8, which is even. So, the median is the average of the two middle values.

$$\therefore \text{Median} = \frac{4\text{th data value} + 5\text{th data value}}{2}$$

$$= \frac{16+17}{2}$$

$$= \frac{33}{2}$$

$$= 16.5$$

Mode:

The **mode** of a set of data values is the values that occur most often..

Example: 4

Find the mode of the following data set:

   48, 44, 48 ,45 , 42 , 49 ,48

Solution:

The mode is 48 since it occurs most often.

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