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## B.A Part 03

Paper - 07
Topic - Introduction to Mean and Calculation by Direct Method
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## ARITHMETIC MEAN OR MEAN

The Arithmetic Mean is the most widely used and the most generally understood of all averages.

For this reason when the term "Mean" is used alone,it almost refers to the Arithmetic Mean.

The arithmetic mean in statistics, is nothing but the ratio of all observations to the total number of observations in a data set.

Arithmetic mean is often referred to as the mean or arithmetic average. Arithmetic mean is calculated by adding all the numbers in a given data set and then dividing it by the total number of items within that set.

The Calculation of the mean is a straightforward operation. The individual observations are added up and the total thus obtained is divided by the number of observations.

The arithmetic mean for evenly distributed numbers is equal to the middle most number.

## Methods of Calculating Mean

## Direct Method:

1. In this method we add all the sums (values)of the variables.
2. Divide the sum of the values $(\Sigma \mathrm{X})$ by the number of items $(\mathrm{N})$ symbolically.

## Formula to Find Arithmetic Mean

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$$
\begin{aligned}
& \text { Formula: } \\
& \qquad \begin{array}{l}
\text { Ungrouped Data: } \bar{x}=\frac{x_{1}+x_{2}+\cdots x_{n}}{n} \\
\text { Grouped Data: } \bar{x}=\frac{\Sigma f x}{n} \\
\text { Where: } f=\text { frequency in each class } \\
x=\text { midpoint of each class } \\
n=\text { total number of scores }
\end{array}
\end{aligned}
$$

## Example on Direct method:

Q1.) The Monthly Expenditure (in Rs.) of five Men are given below 132, 144 , 140 , 136 and 148

Find out the simple arithmetic mean.

Solution :- Calculation of Simple Arithmetic Mean:

| Numbers | Monthly Expenditure |
| :--- | :---: |
| 1 | 132 |
| 2 | 144 |
| 3 | 140 |
| 4 | 136 |
| 5 | 148 |
| $n=5$ | $\sum x=700$ |

Here total observations ( $\mathrm{n}=5$ )
$\sum x=700$
Mean $=\sum x / n$
$=700 / 5$
$=140$
Therefore mean here is Rs. 140

