

E - CONTENT

Subject : Economics

Class : B.A Part III (Paper VII)

Topic : Calculation of Mean

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Calculation of Mean

- Calculation of Mean in Individual Series :-

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \dots + x_n}{n}$$
$$= \frac{\text{Sum of Values}}{\text{No of Values}}$$

For Example :-

- Q. Monthly spending of five people (in Rupees) :

132, 140, 144, 136 & 148.

Calculate the mean value?

Soln: Calculation of Mean

Serial No (n)	Monthly Exp (in ₹)
1	132
2	140
3	144
4	136
5	148
$n = 5$	$\Sigma x = 700$

Sol.

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

$$\therefore \bar{x} = \frac{700}{5} = 140 \text{ Rupee.}$$

Short-Cut Method: —

$$\bar{x} = A + \frac{\sum dn}{n}$$

For Example:

Q. Total no of Observations of 10 students in a examination is:

<u>Serial No.</u>	<u>Observations</u>
1	43
2	48
3	65
4	57
5	31
6	60
7	37
8	48
9	78
10	59

Solution:

Direct Method		Short cut Method		
Serial No.	Mark x	Serial No.	Observation x	($n-50$) $d = x - 50$
1	43	1	43	-7
2	48	2	48	-2
3	65	3	65	+15
4	57	4	57	+7
5	31	5	31	-19
6	60	6	60	+10
7	37	7	37	-13
8	48	8	48	-2
9	78	9	78	+28
10	59	10	59	+9
	$\Sigma x = 526$			$\Sigma d = 69 - 43$ $= 26$

$$\bar{x} = \frac{\Sigma x}{n} = \frac{526}{10} = 52.6 \text{ points.}$$

$$\bar{x} = A + \frac{\Sigma dn}{n} = 50 + \frac{26}{10}$$

$$= 50 + 2.6 = 52.6 \text{ points.}$$

• Step deviation Method :-

We use this method when we get common factor in value of x .