

Q. Find out arithmetic mean from the following data.

class/size : 2 3 4 5-7 7-10 10-15 15-20 20-25

frequency : 1 2 2 3 5 10 8 4

Solution -

class/size	f	m.v (x)	fx
2	1	2	2
3	2	3	6
4	2	4	8
5-7	3	6	18
7-10	5	8.5	42.5
10-15	10	12.5	125
15-20	8	17.5	140
20-25	4	22.5	90
	$\Sigma f = 35$		$\Sigma fx = 431.5$

$$\therefore \bar{x} = \frac{\Sigma fx}{\Sigma f}$$

$$= \frac{431.5}{35}$$

$$= 12.33 \quad \downarrow$$

Note - There may be class interval not in proper interval. We always calculate m.v (x)

as  $\frac{l_2 + l_1}{2}$ .

\*\* समावेशी कान्तर (Inclusive Series) - In this series class interval is not in proper continuous series, they may 1 (one) more or less. We can calculate without changing exclusive (अपवासी) series.

Q. Calculate arithmetic mean in inclusive and exclusive class intervals.

CI: 1-6	7-12	13-18	19-24
f = 8	7	5	10

Solution:-

In Inclusive CI.

CI	f	M.V. $\bar{x}$	$f\bar{x}$
1-6	8	3.5	28
7-12	7	9.5	66.5
13-18	5	15.5	77.5
19-24	10	21.5	215

$$\Sigma f = 30$$

$$\Sigma f\bar{x} = 387$$

In exclusive CI.

CI	f	$\bar{x}$	$f\bar{x}$
0.5-6.5	8	3.5	28
6.5-12.5	7	9.5	66.5
12.5-18.5	5	15.5	77.5
18.5-24.5	10	21.5	215

$$\Sigma f = 30$$

$$\Sigma f\bar{x} = 387$$

$$\bar{x} = \frac{\Sigma f\bar{x}}{\Sigma f}$$

$$= \frac{387}{30}$$

$$= 12.9$$

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