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Q/ Find mean

Individual series :- 10 20 10 25 35 46 25
31 21 20

mean = sum of all no.s / total no of observation
= 243 / 10 = 24.3 ans

Discrete series :-

x	f	fx
10	2	20
20	3	60
30	4	120
40	5	200
50	1	50
60	2	120
		490

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

$= \frac{490}{17}$

$\bar{x} = 28.82$

Continuous series :-

x	f	m	fm
0-10	6	5	30
10-20	8	15	120
20-30	10	25	250
30-40	12	35	420
40-50	7	45	315
50-60	4	55	220
60-70	3	65	195
	50		1550

m = middle value $\frac{\text{upper + lower limit}}{2}$

$\bar{x} = \frac{\Sigma fm}{\Sigma f} = \frac{1550}{50} = 31$ ans

Combined Arithematic Mean :-

A $\quad \bar{x}_A \quad N_1$ $\qquad$ B $\quad \bar{x}_B \quad N_2$

$$\bar{x}_{AB} = \frac{N_1 \bar{x}_A + N_2 \bar{x}_B}{N_1 + N_2}$$

$$\bar{x}_{ABC} = \frac{N_1 \bar{x}_A + N_2 \bar{x}_B + N_3 \bar{x}_C}{N_1 + N_2 + N_3}$$

Q] The mean height of 25 male workers in a factory is 61 cms and the mean height of 35 men in another factory is 58 cm. Find combined mean height of 60 workers

ans $\quad \frac{25 \times 61 + 35 \times 58}{60} = 59.25$ ans

Q] The mean of 5 observation is 7. Later it was found that two observations 4 and 8 were wrongly taken instead of 5 and 9. Find correct mean

ans $\quad$ Situation 1 : $\quad \frac{a+b+c+4+8}{5} = 7$

$$a+b+c = 23$$

Situation 2 $\quad \frac{23+5+9}{5} = 7.4$ correct mean