# Combined mean (सामूहिक माध्य)

* If 'k' the total number of Average $N_1, N_2, N_k$ and their mean $\bar{X}_1, \bar{X}_2, \bar{X}_k$. The combination of all above is called combined mean. —

* $$\bar{X} = \frac{N_1\bar{X}_1 + N_2\bar{X}_2 \text{ —}}{N_1 + N_2 + N_3} = \frac{\Sigma N_k \bar{X}_k}{N}$$

Eg. 8. A frequency distribution consists of three components with total frequencies 50, 60 and 90 having means of 12, 15 and 20 respectively. Find the combined mean.

Solution:- We have given

| | | So |
|---|---|---|
| $N_1 = 50$ | $\bar{X}_1 = 12$ | $N_1\bar{X}_1 = 600$ |
| $N_2 = 60$ | $\bar{X}_2 = 15$ | $N_2\bar{X}_2 = 900$ |
| $N_3 = 90$ | $\bar{X}_3 = 20$ | $N_3\bar{X}_3 = 1800$ |
| $\Sigma f = 200$ | | $\Sigma N\bar{X} = 3300$ |

$\therefore$ Combined mean $= \frac{\Sigma N\bar{X}}{\Sigma f}$

$= \frac{3300}{200}$

$= 16.5$ Ans.