

Assignment 3

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1 QUESTION-

Find the mean salary of 60 workers of factory from following table:

Salary (in Rs.)	Number of Workers
3000	16
4000	12
5000	10
6000	8
7000	6
8000	4
9000	3
10000	1
Total	60

2 ANSWER-

Here,

x = salary vector,

f = frequency vector associated with x ,

From given data,

$$\mathbf{x} = (3000 \ 4000 \ 5000 \ 6000 \ 7000 \ 8000 \ 9000 \ 10000)^\top \quad (2.1)$$

$$\mathbf{f}^\top = (16 \ 12 \ 10 \ 8 \ 6 \ 4 \ 3 \ 1) \quad (2.2)$$

So, the mean \bar{x} is

$$\bar{x} = \frac{\mathbf{f}^\top \mathbf{x}}{\mathbf{f}^\top (1 \ 1 \ 1 \ 1 \ 1 \ 1 \ 1 \ 1)} \quad (2.3)$$

$$\Rightarrow \bar{x} = \frac{(48000 + 48000 + 50000 + 48000 + 42000 + 32000 + 27000 + 10000)}{(16 + 12 + 10 + 8 + 6 + 4 + 3 + 1)} \quad (2.4)$$

$$\Rightarrow \bar{x} = \frac{305000}{60} \quad (2.5)$$

$$\Rightarrow \bar{x} = 5083.33 \quad (2.6)$$

Therefore, the mean of salaries is Rs.5083.33/- .