MATHS

BOOKS - PSEB

STATISTICS

Exercise

1. Find the mean deviation about the mean for the data given below:- 4,7,8,9,10,12,13,17

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2. Find the mean deviation about the mean for the data given below:- 38,70,48,40,42,55,63,46,54,44

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3. Find the mean deviation about the median for the data given below:- 13, 17, 16, 14, 11, 13, 10, 16, 11, 18, 12, 17

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4. Find the mean deviation about the median for the data given below:- 36,72,46,42,60,45,53,46,51,49

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5. Find the mean deviation about the mean for the data given below:- . x_i 5 10 15 20 25 f_i 7 4 6 3 5

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6. Find the mean deviation about the mean for the data given below:- x_i 10 30 50 70 90 f_i 4 24 28 16 8

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7. Find the mean deviation about the median for the data given below:- x_i 5 7 9 10 12 15 f_i 8 6 2 2 2 6

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8. Find the mean deviation about the median for the data given below:-x_i 15 21 27 30 35 f_i 3 5 6 7 8

9. Find the mean and variance for the following data:- 6, 7, 10, 12, 13, 4, 8, 12

10. Find the mean and variance for the following data:- First n natural numbers

11. Find the mean and variance for the following data:- First 10 multiples of 3

12. The sum and sum of squares corresponding to length x (in cm) and weight y (in gm) of 50 plant products are given below:

$$\sum_{i=1}^{50} x_i = 212, \sum_{i=1}^{50} x_i^2 = 902.8, \sum_{i=1}^{50} y_i = 261, \sum_{i=1}^{50} y_i^2 = 1457.6$$

Which is more varying, the length or weight?

13. The mean and variance of eight observations are 9 and 9.25, respectively. If six of the observations are 6, 7, 10, 12, 12 and 13, find the remaining two observations.

14. The mean and variance of 7 observations are 8 and 16, respectively. If five of the observations are 2, 4, 10, 12, 14. Find the remaining two observations.

15. The mean and standard deviation of six observations are 8 and 4, respectively. If each observation is multiplied by 3,

find the new mean and new standard deviation of the resulting observations.

16. Given that $\bar{x}$ is the mean and σ^2 is the variance of n observations $x_1, x_2,....x_n$. Prove that the mean and variance of the observations $ax_1, ax_2, ax_3,......,ax_n$ are a $\bar{x}$ and $a^2\sigma^2$, respectively, $(a \neq 0)$.

17. The mean and standard deviation of 20 observations are found to be 10 and 2. respectively. On rechecking, it was found that an observation 8 was incorrect. Calculate the

correct mean and standard deviation in each of the following cases: (i) If wrong item is omitted. (ii) If it is replaced by 12.

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18. The mean and standard deviation of a group of 100 observations were found to be 20 and 3, respectively. Later on it was found that three observations were incorrect, which were recorded as 21, 21 and 18. Find the mean and standard deviation if the incorrect observations are omitted.

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