1   Calculate the mean deviation about median from the following date:
340, 150, 210, 240, 300, 310, 320.

2   Find the mean deviation from the mean for the following data:
6, 7, 10, 12, 13, 4, 8, 20

3   Calculate the mean deviation about the median of the following observations:
(i) 3011, 2780 3020, 2354, 3541, 4150, 5000   (ii) 38, 70, 48, 34, 42, 55, 65, 46, 54, 44

4   Calculate mean deviation about mean from the following data:

x_i:	3	9	17	23	27
f_i:	8	10	12	9	5

5   Calculate the mean deviation from the median for the following distribution:

x_i	10	15	20	25	30	35	40	45
f_i	7	3	8	5	6	8	4	9

6   The number of telephone calls received at an exchange in 245 successive one-minute intervals are shown in the following frequency distribution:

Number of calls	0	1	2	3	4	5	6	7
Frequency	14	21	25	43	51	40	39	12

7   Find the mean deviation from the median for the following data:

x_i	15	21	27	30	35
f_i	3	5	6	7	8

8   Find the mean deviation about the mean for the following data:

Marks obtained:	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Number of students:	2	3	8	14	8	3	2

9   Compute the mean deviation from the median of the following distribution :

Class	0-10	10-20	20-30	30-40	40-50
Frequency	5	10	20	5	10

10   Calculate mean deviation about median age for the age distribution of 100 persons given below:

Age:	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55

Number of persons	5	6	12	14	26	12	16	9

11. Calculate the mean and standard deviation of first n natural numbers.

12. Find the variance and standard deviation for the following data:
    65, 68, 58, 44, 48, 45, 60, 62, 60, 50

13. The mean and variance of 7 observations are 8 and 16 respectively. If 5 of the observations are 2, 4, 10, 12, 14, find the remaining two observations.

14. Let $x_1, x_2, x_3, ... , x_n$ be n values of a variable X. If these values are changed to $x_1 + a$, $x_2 + a$,..., $x_n + a$, where $a \in R$, show that the variance remains unchanged.

15. For a group of 200 candidates the mean and S.D. were found to be 40 and 15 respectively. Later on it was found that the score 43 was misread as 34. Find the correct mean and correct S.D,

16. 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 the wrong item is omitted. (ii) If it is replaced by 12.

17. The variance of 20 observations is 5. If each observation is multiplied by 2, find the variance of the resulting observations.

18. The mean and standard deviation of 6 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.

19. The mean and standard deviation of 100 observations were calculated as 40 and 5.1 respectively by a student who took by mistake 50 instead of 40 for one observation. What are the correct mean and standard deviation?

20. 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 were omitted.

21. Find the standard deviation for the following distribution:

x:	4.5	14.5	24.5	34.5	44.5	54.5	64.5

f:	1	5	12	22	17	9	4

22 Calculate the mean and standard deviation for the following distribution:

Marks:	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of students:	3	6	1.3	15	14	5	4

23 A student obtained the mean and standard deviation of 100 observations as 40 and 5.1 respectively. It was later found that one observation was wrongly copied as 50, the correct figure being 40. Find the correct mean and S.D.

24 An analysis of monthly wages paid to the workers of two firms A and B belonging to the same industry gives the following results:

	Firm A.	Firm B
Number of workers	1000	1200
Average monthly wages	Rs 2800	Rs 2800
Variance of distribution of wages	100	169

In which firm, A or B is there greater variability in individual wages?

25 The following values are calculated in respect of heights and weights of the students of a section of class XI:

	Height	Weight
Mean	162.6 cm	52.36 kg
Variance	127.69 cm^2	23.1361 kg^2

Can we say that the weights show greater variation than the heights?

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

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

Which is more varying, the length or weight?

27 The means and standard deviations of heights ans weights of 50 students of a class are as follows:

	Weights	Heights
Mean	63.2 kg	63.2 inch
Standard deviation	5.6 kg	11.5 inch

Which shows more variability, heights or weights?

28 Coefficient of variation of two distributions are 60% and 70% and their standard deviations

are 21 and 16 respectively. What are their arithmetic means?

29 If $x_1, x_2, .., x_n$ are n values of a variable X and $y_1, y_2, ...y_n$ are n values of variable Y such that $y_i = ax_i + b$; i = 1, 2,...,n, then write Var(Y) in terms of Var(X).

30 In a series of 20 observations, 10 observations are each equal to k and each of the remaining half is equal to - k. If the standard deviation of the observations is 2, then write the value of k.