



MATHS

NCERT - NCERT MATHEMATICS(BENGALI)

STATISTICS

Example

1. Find the mean deviation about the mean for the following data:

6, 7, 10, 12, 13, 4, 8, 12



Watch Video Solution

2. Find the mean deviation about the mean for the following data :

12, 3, 18, 17, 4, 9, 17, 19, 20, 15, 8, 17, 2, 3, 16, 11, 3, 1, 0, 5

 [Watch Video Solution](#)

3. Find the mean deviation about the median for the following data:

3, 9, 5, 3, 12, 10, 18, 4, 7, 19, 21.

 [Watch Video Solution](#)

4. Find mean deviation about the mean for the following data :

x_i 2 5 6 8 10 12

f_i 2 8 10 7 8 5



[Watch Video Solution](#)

5. Find the mean deviation about the median for the following data:

x_i	3	6	9	12	13	15	21	22
f_i	3	4	5	2	4	5	4	3



[Watch Video Solution](#)

6. 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



[Watch Video Solution](#)

7. Calculate the mean deviation about median for the following data :

Class	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	6	7	15	16	4	2

 [Watch Video Solution](#)

8. Find the variance of the following data:

6, 8, 10, 12, 14, 16, 18, 20, 22, 24

 [Watch Video Solution](#)

9. Find the variance and standard deviation for the following data:

x_i	4	8	11	17	20	24	32
f_i	3	5	9	5	4	3	1

 [Watch Video Solution](#)

10. Calculate the mean, variance and standard deviation for the following distribution :

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2

 [Watch Video Solution](#)

11. Find the standard deviation for the following data :

x_i	3	8	13	18	23
f_i	7	10	15	10	6

 [Watch Video Solution](#)

12. Calculate the mean, variance and standard deviation for the following distribution :

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2

 [Watch Video Solution](#)

13. Two plants A and B of a factory show following results about the number of workers and the wages paid to them.

	<i>A</i>	<i>B</i>
No. of workers	5000	6000
Average monthly wages	Rs 2500	Rs 2500
Variance of distribution of wages	81	100

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



[Watch Video Solution](#)

14. Coefficient of variation of two distributions are 60 and 70, and their standard deviations are 21 and 16, respectively. What are their arithmetic means.



[Watch Video Solution](#)

15. 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	$127.69cm^2$	$23.1361kg^2$

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



[Watch Video Solution](#)

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



Watch Video Solution

17. The mean of 5 observations is 4.4 and their variance is 8.24. If three of the observations are 1, 2 and 6, find the other two observations.



Watch Video Solution

18. If each of the observation x_1, x_2, \dots, x_n is increased by 'a', where a is a negative or positive number, show that the variance remains unchanged.

 [Watch Video Solution](#)

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?

 [Watch Video Solution](#)

1. Find the mean deviation about the mean for the data in

4, 7, 8, 9, 10, 12, 13, 17



[Watch Video Solution](#)

2. Find the mean deviation about the mean for the data in

38, 70, 48, 40, 42, 55, 63, 46, 54, 44



[Watch Video Solution](#)

3. Find the mean deviation about the median for the data

in

13, 17, 16, 14, 11, 13, 10, 16, 11, 18, 12, 17



[Watch Video Solution](#)

4. Find the mean deviation about the median for the data in

36, 72, 46, 42, 60, 45, 53, 46, 51, 49

 [Watch Video Solution](#)

5. Find the mean deviation about the mean for the data in

x_i 5 10 15 20 25

f_i 7 4 6 3 5

 [Watch Video Solution](#)

6. Find the mean deviation about the mean for the data in

x_i 10 30 50 70 90

f_i 4 24 28 16 8

 [Watch Video Solution](#)

7. Find the mean deviation about the median for the data in

x_i 5 7 9 10 12 15

f_i 8 6 2 2 2 6



[Watch Video Solution](#)

8. Find the mean deviation about the median for the data

in

x_i 15 21 27 30 35

f_i 3 5 6 7 8



[Watch Video Solution](#)

9. Find the mean deviation about the mean for the data in

Income per day in ₹	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800
Number of persons	4	8	9	10	7	5	4	3

 [Watch Video Solution](#)

10. Find the mean deviation about the mean for the data in

Height in cms	95-105	105-115	115-125	125-135	135-145	145-155
Number of boys	9	13	26	30	12	10

 [Watch Video Solution](#)

11. The variance of the given data 2, 4, 5, 6, 8, 17 is 23.33 .

Then find the variance of the data 4, 8, 10, 12, 16, 34.

 [Watch Video Solution](#)

12. Find the mean deviation about median for the following data :

Age (in years)	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55
Number	5	6	12	14	26	12	16	9

[Watch Video Solution](#)

Exercise 15 2

1. Find the mean and variance for each of the data in

6, 7, 10, 12, 13, 4, 8, 12

[Watch Video Solution](#)

2. Find the mean and variance for each of the data in

First n natural numbers

 [Watch Video Solution](#)

3. Find the mean and variance for each of the data in

First 10 multiples of 3

 [Watch Video Solution](#)

4. Find the mean and variance for each of the data in

x_i	6	10	14	18	24	28	30
f_i	2	4	7	12	8	4	3

 [Watch Video Solution](#)

5. Find the mean and variance for each of the data in

x_i	92	93	97	98	102	104	109
f_i	3	2	3	2	6	3	3

 [Watch Video Solution](#)

6. Find the mean and standard deviation using short-cut method.

x_i	60	61	62	63	64	65	66	67	68
f_i	2	1	12	29	25	12	10	4	5

 [Watch Video Solution](#)

7. Find the mean and variance for the following frequency distributions in

Classes	0-30	30-60	60-90	90-120	120-150	150-180	180-210
Frequencies	2	3	5	10	3	5	2



[Watch Video Solution](#)

8. Find the mean and variance for the following frequency distributions in

Classes	0-10	10-20	20-30	30-40	40-50
Frequencies	5	8	15	16	6



[Watch Video Solution](#)

9. Find the mean, variance and standard deviation using short-cut method

Height in cms	70-75	75-80	80-85	85-90	90-95	95-100	100-105	105-110	110-115
No. of children	3	4	7	7	15	9	6	6	3



[Watch Video Solution](#)

10. The variance of the given data 2, 5, 7, 9 is 25.1 . Then find the variance of the data 4, 10, 14, 18.



[Watch Video Solution](#)

Exercise 15 3

1. Find the mean of the given data 57, 64, 43, 67, 49, 59, 44, 47, 61, 59.



[Watch Video Solution](#)

2. From the prices of shares X and Y below, find out which is more stable in value:

X	35	54	52	53	56	58	52	50	51	49
Y	108	107	105	105	106	107	104	103	104	101

 [View Text Solution](#)

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

	Firm A	Firm B
No. of wage earners	586	648
Mean of monthly wages	Rs 5253	Rs 5253
Variance of the distribution	100	121

(i) Which firm A or B pays larger amount as monthly wages?

(ii) Which firm, A or B, shows greater variability in individual wages?



[Watch Video Solution](#)

4. The following is the record of goals scored by team A in a football session:

No. of goals scored	0	1	2	3	4
No. of matches	1	9	7	5	3

For the team B, mean number of goals scored per match was 2 with a standard deviation 1.25 goals. Find which team may be considered more consistent?



[Watch Video Solution](#)

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

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

Which is more varying, the length or weight?



[Watch Video Solution](#)

Miscellaneous Exercise On Chapter 15

1. 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.



[Watch Video Solution](#)

2. 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.

 [Watch Video Solution](#)

3. 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

 [Watch Video Solution](#)

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

 [Watch Video Solution](#)

5. Find the mean of the given data 5, 4, 11, 15, 5, 13, 17, 10.

 [Watch Video Solution](#)

6. The mean and standard deviation of marks obtained by 50 students of a class in three subjects, Mathematics, Physics and Chemistry are given below:

Subject	Mathematics	Physics	Chemistry
Mean	42	32	40.9
Standard deviation	12	15	20

Which of the three subjects shows the highest variability in marks and which shows the lowest?

 [Watch Video Solution](#)

7. 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.

 [Watch Video Solution](#)