ECONOMICS

BOOKS - VK GLOBAL PUBLICATION ECONOMICS (HINGLISH)

MEASURES OF DISPERSION

Illustration

1. Monthly wages of workers of a factory are stated below. Find out the range and the

coefficient of range.

Wages (₹)	50	60	80	90	200	225	250	300	340	360	400	415	425	450	500

Watch Video Solution

2. Calculate range and coefficient of range of the following series.

Size	10	11	12	13	14	15	16	18
Frequency	1	13	24	11	15	13	16	20

Watch Video Solution

3. Find out the range and the coefficient of range of the following series:

Marks	Number of Students
20–29	8
30–39	12
40–49	20
50–59	7
60–69	3

Watch Video Solution

4. Find out the quartile deviation and coefficient of quartile deviation of the following series:

S. No.	1	2	3	4	5	6	7	8	9	10	11
Marks	10	15	20	25	30	35	40	45	50	55	60

Watch Video Solution

5. The following table shows monthly wages of 10 workers:

Monthly Wages (₹)	120	150	170	180	181	187	190	192	200	210

Calculate first third quartiles and quartile deviation.

Watch Video Solution

6. The following data shows daily wages of 199 workers of a factory. Find out quartile

deviation and the coefficient of quartile deviation.

Wages (₹)	10	20	30	40	50	60	70	80	90	100
Number of Workers	2	8	20	35	42	20	28	26	16	2

Watch Video Solution

7. Find out quartile deviation of the following series:

Age (Years)	0–20	20–40	40–60	60–80	80–100
Number of Persons	4	10	15	20	11

Watch Video Solution

8. The data below gives wages of workers in a factory. Find out mean deviation and its coefficient.

S. No.	1	2	3	4	5	6	7	8	9
Wages (₹)	40	42	45	47	50	51	54	55	57

Watch Video Solution

9. Using medium and arithmetic mean respectively, calculate mean deviation and its coefficient from the following data:

Size of Items	5	6	7	8	9	10	11	12	13
Frequency	4	5	6	7	8	9	10	11	12

Watch Video Solution

10. Find out mean deviation and coefficient of mean deviation, using arithmetic mean from the following data:

Profit (₹)	0–10	10–20	20–30	30–40	40–50
Shops (Number)	5	10	15	20	25

Watch Video Solution

11. Calculate mean deviation and its coefficient from the median of the following data:

Size	100–120	120–140	140–160	160–180	180–200
Frequency	4	6	10	8	5

Watch Video Solution

12. Following are the marks obtained by 10 students of a class. Calculate standard deviation and coefficient of standard deviation.

Marks	12	8	17	13	15	9	18	11	6	1

Watch Video Solution

13. Find out standard deviation, given the following data:

8,10,12,14,16,18,20,22,24,26

Watch Video Solution

14. Find out standard deviation of the monthly income of 5 person, as stated below:

S. No. of Persons	Monthly Income (in ₹)
1	500
2	700
3	1,000
4	1,500
5	1,300

Watch Video Solution

15. Using electronic calculator, find out standard deviation of the following data:

Marks	10	20	30	40	50

Watch Video Solution

16. Find out standard deviation of the following data, using direct method:

Size	4	6	8	10	12	14	16
Frequency	1	2	3	5	3	2	1

Watch Video Solution

17. Find out standard deviation of the following data:

Size	1	2	3	4	5	6	7	8
Frequency	5	10	15	20	15	10	10	15

Watch Video Solution

18. Given the following series, calculate standard deviation by direct method:

Size	0–2	2–4	4–6	6–8	8–10	10–12
Frequency	2	4	6	4	2	6

Watch Video Solution

19. Using short-cut method, calculate standard deviation of the following series:

Size	0–2	2–4	4–6	6–8	8–10	10–12
Frequency	2	4	6	4	2	6

Watch Video Solution

20. Using step-deviation method, calculate standard deviation of the following series:

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Number of Students	5	10	20	40	30	20	10	4

Watch Video Solution

21. Find out standard deviation of the following data-set, using step-deviation method:

Marks	20–40	40–60	60–80	80–100	100–120	120–140
Number of Students	6	9	8	10	11	6

Watch Video Solution

22. Two sample of size 100 and 150 respectively have means 50 and 60 deviation of the combined sample of size 250.

Watch Video Solution

23. Calculate the mean and variance from the data given below:

Daily Wages	0–10	10–20	20–30	30–40	40–50
Number of Workers	2	7	10	5	3

Watch Video Solution

24. Calculate coefficient of variation of the following series:

S. No.	1	2	3	4	5	6	7	8	9	10
Marks	53	58	25	30	54	42	32	48	46	52

Watch Video Solution

25. Calculate coefficient of variation of the following data :

Items	10	12	14	16	18	20	22
Frequency	4	6	10	15	9	4	2

Watch Video Solution

26. Calculate coefficient of variation, given the following data-set:

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70
Number of Students	2	4	5	9	10	5	15

Watch Video Solution

27. Batsmen X and Y score following runs in different innings they played in a test series. Which of the two is a better scorer? Who is more consistent?

X	12	115	6	73	7	19	119	36	84	29
Y	47	12	76	42	4	51	37	48	13	0

Watch Video Solution

28. Two factories A and B are located in some Industrial estate. Average wage and its standard deviation are given below separately

for A and B. Find out coefficient of variation.

Factory	Average Weekly Wage	S.D.	Number of Workers
A	35	5	476
B	30	10	524

Watch Video Solution

29. Draw a Lorenz curve of the data given below:

Income (₹)	100	200	400	500	800
Number of Persons	80	70	50	30	20

View Text Solution

30. Show inequality in wages in two different firms using Lorenz Curve approach, given the following data:

Wages (₹)	50–70	70–90	90–110	110–130	130–150
Number of Workers A	20	15	20	25	20
Number of Workers B	150	100	90	110	50

View Text Solution

Miscellaneous Illustrations

1. Find inter quartile range, quartile deviation and coefficient of quartile deviation from the following data:

Marks	28	18	20	24	27	30	15

Watch Video Solution

2. Calculate inter quartile range, quartile deviation and the coefficient of quartile deviation from the following data:

Wages (₹)	31	33	35	37	39	41	43
Number of Workers	12	18	16	14	12	8	7

Watch Video Solution

3. Find the range which contains the middle 50% of the items and coefficient of quartile deviation from the following data:

Class Interval	11–20	21–30	31–40	41–50	51–60
Frequency	4	8	20	12	6

Watch Video Solution

4. Calculate the mean deviation from mean as well as from median and coefficient of mean

deviation from the following data:

Marks	20	22	25	38	40	50	65	70	75

Watch Video Solution

5. Calculate mean deviation and its coefficient from mean from the following data:

Marks	0–10	10–20	20–30	30–40	40–50
Number of Students	6	28	51	11	4

Watch Video Solution

6. Calculate mean deviation and its coefficient from median from the following data:

Marks	0–10	10–20	20–30	30–40	40–50
Number of Students	5	8	15	16	6

Watch Video Solution

7. Calculate the standard deviation from the following data:

Size	16	20	18	19	20	20	28	17	22	20

Watch Video Solution

8. Using Short-cut Method,calculate the standard deviation from the data given below:

Size	3	4	5	6	7	8	9
Frequency	7	8	10	12	4	3	2

Watch Video Solution

9. Using Step-deviation method, find out standard deviation from the following data-set:

Age (under)	10	20	30	40	50	60
Number of Persons	15	32	51	78	97	109

Watch Video Solution

10. If sum of aquares of items =2,430, arithmctic mean =7, and number of items=12, find the coefficient of variation.

Watch Video Solution

11. The coefficient of variation of a series is 58. The standard deviation is 21.2. What is the arithmetic mean?

Watch Video Solution

12. If the mean and standard deviation of 75 observations is 40 and 8 respectively, find the new mean and standard deviation if

(i) each observation is multiplied by 5.

(ii) 7 is added to each observation.

Watch Video Solution

13. Find out the range and coefficient of range from the following data:

6,12,30,24,45,52,40

Watch Video Solution

14. Calculate the range and its coefficient from the following data:

Marks	10–20	20–30	30–40	40–50	50–60
Number of Students	8	10	12	8	4

Watch Video Solution

15. Calculate interquartile range, quartile deviation and the coefficient of quartile deviation from the following data:

Wages (₹)	10	20	30	40	50	60
Number of Workers	2	8	20	35	42	20

Watch Video Solution

16. Calculate quartile deviation and its coefficient from the following data:

Class Interval	30–32	32–34	34–36	36–38	38–40	40–42	42–44
Frequency	12	18	16	14	12	8	6

Watch Video Solution

17. Estimate mean deviation and its coefficient from the following data:

7,9,13,13,15,17,19,21,23

Watch Video Solution

18. Find out the mean deviation from the median and its coefficient from the following data:

Class	0–3	3–6	6–9	9–12	12–15	15–18	18–21
Frequency	2	7	10	12	9	6	4

Watch Video Solution

19. Calculate the standard deviation and coefficient of standard deviation of the

following series:

Size	7	10	12	13	15	20	21	28	29	35

Watch Video Solution

20. Calculate standard deviation from the following data:

Size	10	20	30	40	50	60	70
Frequency	3	5	7	9	8	5	3

Watch Video Solution

21. Calculate mean and standard deviation from the following data:

Daily Wages	0–10	10–20	20–30	30–40	40–50
Number of Workers	2	7	10	5	3

Watch Video Solution

22. Two sample of size 100 and 150 respectively have means 15 and 16 and standard deviations 3 and 4 respectively. Find the combined mean and standard deviation of Size 250.

Watch Video Solution

23. For a group containing 100 observations, the arithmetic mean and standard deviation are 8 and $\sqrt{10.5}$. For 50 observations selected from the 100 observations, the arithmetic mean and standard deviations are 10 and 2 respectively. Find the arithmetic mean and the standard deviation of the other half.

Watch Video Solution

24. Calculate coefficient of variation from the following data-set:

Class Interval	0–10	10–20	20–30	30–40	40–50	50–60	60–70
Frequency	10	15	25	25	10	10	5

Watch Video Solution

Exercise

1. Which is the relative measure of dispersion?

A. Range

B. Mean deviation

C. Coefficient of standard deviation

D. None of these

Answer: C

View Text Solution

2. Coefficient of range is:

A. $\left(\frac{H+L}{H-L}\right) \times 2$

B. $\frac{H+L}{2}$

C. $\frac{H+L}{H-L}$

D. $\frac{H-L}{H+L}$

Answer: D

View Text Solution

3. Which is the following formulae is used to find out inter quartile range?

A. $\frac{Q_1-Q_3}{2}$

B. $\frac{Q_1+Q_3}{2}$

C. $Q_1 - Q_3$

D. $Q_1 + Q_3$

Answer: C

View Text Solution

4. Quartile deviation is equal to:

A. $\frac{Q_1 - Q_3}{2}$

B. $\frac{Q_1 + Q_3}{2}$

C. $\frac{Q_3 - Q_1}{2}$

D. $\frac{Q_3 + Q_1}{2}$

Answer: C

View Text Solution

5. Mean deviation can be calculation by using:

A. mean

B. mode

C. median

D. all of these

Answer: D

View Text Solution

6. Coefficient of standard deviation is:

A. $\frac{MD_{\bar{x}}}{\overline{X}}$

B. $\frac{MD_m}{M}$

C. $\frac{MD_Z}{Z}$

D. all of these

Answer: A

View Text Solution

7. Formula of standard deviation is:

A. $\sigma = \frac{\sum (X - X)}{N}$

B. $\sigma = \sqrt{\frac{\sum (X - X)^2}{N}}$

C. $\sigma = \sqrt{\frac{\sum (X - X)}{N}}$

D. $\sigma = \sqrt{\frac{\sum X}{N}}$

Answer: B

View Text Solution

8. Coefficient of variation is a percentage expression of:

A. Mean deviation

B. quartile deviation

C. standard deviation

D. None of these

Answer: C

View Text Solution

9. Which of these is the merit of standard deviation?

A. Standard deviation is based on all values of the series

B. Standard deviation shows little effect of changes in the sample

C. In the estimation of standard deviation, more importance is given to difficult and extreme value

D. Both (a) and (b)

Answer: D

View Text Solution

10. $\sigma = \sqrt{\frac{N_1\sigma_1^2 + N_2\sigma_2^2 + N_1d_1^2 + N_2d_2^2}{N_1 + N_2}}$ is the formula of:

A. combined mean deviation

B. combined quartile deviation

C. combined standard deviation

D. coefficient of variation

Answer: C

View Text Solution

11. In the calculation of standard deviation, deviations are taken only from the ..... value of the series.

A. mean

B. mode

C. median

D. quartile

Answer: A

View Text Solution

12. Which of the following equations is correct?

A. Variance=σ

B. Variance=σ^2

C. Variance=σ^4

D. Variance=$\sqrt{\sigma} \times 2$

Answer: B

View Text Solution

Fill In Blank

1. ..... Is the measure of the variation of the items. (Dispersion/Range)

View Text Solution

2. ..... measure of dispersion is known as coefficient of dispersion.

(Absolute/Relative)

View Text Solution

3. Range is estimated as the ..... Of highest and lowest values of the series.

(difference/multiplicatin)

View Text Solution

4. Difference between third quartile and first quartile of a series, is called .....

(Quartile Deviation/Inter Quartile Range)

View Text Solution

5. ..... Is the arithmetic average of the deviations of all the values taken from some average value of the series, ignoring signs of the deviations.

(Mean Deviation/Standard Deviation)

View Text Solution

6. Coefficient of standard deviation is a ..... Measure of the dispersion of series. (absolute/relative)

View Text Solution

7. Variance is simply the square of ..... (Mean deviation/standard deviation)

View Text Solution

True Or False

1. In mean deviation,negative deviations are also treated as positive deviations.

(true/False)

View Text Solution

2. Coefficient of Standard Deviation is : $\frac{\sigma}{\overline{X}}$.

(true/False)

View Text Solution

3. Stand deviation is a better measure of dispersion compared to mean deviation as it is based on the squares of deviations from the mean.

(true/False)

View Text Solution

Concept Based Objective Questions

1. Define dispersion.

View Text Solution

2. What do you mean coefficient of dispersion?

View Text Solution

3. Define range.

View Text Solution

4. Define quartile range.

View Text Solution

5. Define quartile deviation.

View Text Solution

6. Give the formula for coeficient of quartile deviation?

View Text Solution

7. Define mean deviation.

View Text Solution

8. How is coefficient of mean deviation calculated?

View Text Solution

9. Define standard deviation.

View Text Solution

10. Define coefficient of variation.

View Text Solution

11. What is a lorenz curve?

View Text Solution

12. Define variance.

View Text Solution

Short Answer Type Questions

1. Illustrate the meaning of the term dispersion with examples.

View Text Solution

2. Discuss the main measures of dispersion.

View Text Solution

3. How many are the absolute measures of dispersion?

View Text Solution

4. How many are the relative measures of dispersion?

View Text Solution

5. State the main merits and demerits of range.

View Text Solution

6. Explain coefficient of range with the help of a formula.

View Text Solution

7. Explain quartile deviation with the of a formula.

View Text Solution

8. What is meant by mean deviation? What are its main characteristics?

View Text Solution

9. What is meant by standard deviation? What are its main merits or characteristics?

View Text Solution

10. What are the main demerits of standard deviation?

View Text Solution

11. What are the differences between standard deviation and mean deviation?

View Text Solution

12. Why should we measure dispersion about some particular value? Do the range and quartile deviation measure dispersion about some values?

View Text Solution

13. What are the properties of a good measure of dispersion?

View Text Solution

Long Answer Type Questions

1. What is meant by mean deviation? What are the methods to calculate it? Give its merits and demerits.

View Text Solution

2. What is standard deviation? How does it differ from mean deviation? What are its advantages and disadvantages?

View Text Solution

3. What is meant by coefficient of variation? How will you calculate it in case of a discreate series?

View Text Solution

4. What are the four alternative measures of absolute dispersion? Discuss their properties.

View Text Solution

Essential Practicals

1. Calculate range and coefficient of range from the following data:

4,7,8,46,53,77,8,1,5,13

Watch Video Solution

2. Given the following data-set, calculate range and the coefficient of range:

Size	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5
Frequency	4	5	6	3	2	1	3	5

Watch Video Solution

3. Find out the range and the coefficient of range ,given the following data-set:

Class Interval	1–5	6–10	11–15	16–20	21–25	26–30	31–35
Frequency	2	8	15	35	20	10	14

Watch Video Solution

4. Find out quartile deviation and the coefficient of quartile deviation of the following series. Wages of 9 Workers in Rupees:

170,82,110,100,150,200,116,250,

Watch Video Solution

5. Given the following data, estimate the coefficient of QD:

15,20,23,23,25,25,27,40

Watch Video Solution

6. Find out mean deviation of the following series from mean and median:

Size	4	6	8	10	12	14	16
Frequency	2	4	5	31	2	1	4

Watch Video Solution

7. Calculate mean deviation and coefficient of mean deviation with the help of median:

Class Interval	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	15	19	14	20	18	14

Watch Video Solution

8. Calculate mean deviation from mean of the following series:

Size of Items	3–4	4–5	5–6	6–7	7–8	8–9	9–10
Frequency	3	7	22	60	85	32	9

Watch Video Solution

9. Given below are the marks obtained by the students of a class. Calculate mean deviation, and its coefficient, median of data:

Marks	17	35	38	16	42	27	19	11	40	25

Watch Video Solution

10. Nine students of a class obtained following marks. Calculate mean deviation from median.

S. No.	1	2	3	4	5	6	7	8	9
Marks	68	49	32	21	54	38	59	66	41

Watch Video Solution

11. Following data relate to the age-difference of husbands and wifes of a particular community. Find out mean deviation from

mean.

Age-difference	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Frequency	449	705	507	281	109	52	16	4

Watch Video Solution

12. Find out the mean deviation and its coefficient using median of the following data:

S. No.	1	2	3	4	5	6	7	8	9	10	11	12
Number of Victims of Accidents	16	21	10	17	8	4	2	1	2	2	2	2

Watch Video Solution

13. Calculate standard deviation, given the following data:

10,12,14,16,18,22,24,26,28

Watch Video Solution

14. Calculate standard deviation and the coefficient of standard deviation, given the following data:

Income (₹)	5	10	15	20	25	30	35	40
Number of Workers	26	29	40	35	26	18	14	12

Watch Video Solution

15. Of the two sets of income distribution of five and seven persons respectively, as given below calculate standard deviation:

(i) Income (₹)	4,000	4,200	4,400	4,600	4,800		
(ii) Income (₹)	3,000	4,000	4,200	4,400	4,600	4,800	5,800

Watch Video Solution

16. Find out the standard deviation of the marks secured by 10 students:

S. No.	1	2	3	4	5	6	7	8	9	10
Marks	43	48	65	57	31	60	37	48	78	59

Watch Video Solution

17. Data of daily sale proceeds of a shop are below . Calculate mean deviation and standard deviation.

Daily Sales	102	100	110	114	118	122	126
Days	3	9	25	35	17	10	1

Watch Video Solution

18. Calculate range, standard deviation and coefficient of variation of marks secured by

students.

50	55	57	49	54	61	64	59	58	56

Watch Video Solution

19. Following data show the number of runs made by Sachin and Sourabh in different Innings. Find out who is a good scorer and who is a consister player?

Sachin	92	17	83	56	72	76	64	45	40	32
Sourabh	28	70	31	00	59	108	82	14	3	95

Watch Video Solution

20. Calculate standard deviation of marks secured by 100 examinees in the examination:

Marks	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90
Number of Examinees	19	3	2	49	24	2	0	1

Watch Video Solution

21. Calculate coefficient of variation from the following data:

Variables	10	20	30	40	50	60	70
Frequencies	6	8	16	15	32	11	12

Watch Video Solution

22. Estimate coefficient of variation of the following data:

Weight (kg)	0–20	20–40	40–60	60–80	80–100
Number of Persons	81	40	66	49	14

Watch Video Solution

Ncert Questions With Hints To Answers

1. A measure of dispersion is a good supplement to the central value in understanding a frequency distribution. Comment.

View Text Solution

2. Which measures of dispersion is the best and how?

View Text Solution

3. Some measures of dispersion depend upon the spread of values whereas some calculate the variaton of values from a central value. Do you agree?

View Text Solution

4. In a town ,25% of the persons earned more than ₹ 45,000 whereas 75% earned more than 18,000. Calculate the absolute and relative values of dispersion.

Watch Video Solution

5. The yield of wheat and rice per acre for 10 districts of a state is as under:

District	1	2	3	4	5	6	7	8	9	10
Wheat	12	10	15	19	21	16	18	9	25	10
Rice	22	29	12	23	18	15	12	34	18	12

Calculate for each crop,

(i) Range

(ii) Q.D.

(iii) Mean Deviation about Mean

(iv) Mean deviation about Median

(v) Standard Deviation

(vi) Which crop has greater variations?

(vii) Compare the values of different measures for each crop.

View Text Solution

6. A batsman is to be selected for a cricket team. The choice is between X and Y on the basis of their five previous scores which are:

X	25	85	40	80	120
Y	50	70	65	45	80

Which batsman should be selected if we want,

(i) a higher run getter, or

(ii) a more reliable batsman in the team?

Watch Video Solution

7. To check the quality of two brands of lightbulbs, their life in burning hours was

estimated as under for 100 bulbs of each brand.

Life (in hours)	Number of bulbs	
	Brand A	Brand B
0–50	15	2
50–100	20	8
100–150	18	60
150–200	25	25
200–250	22	5
	100	100

(i) Which brand gives higher life?

(ii) Which brand is more dependable?

Watch Video Solution

8. Average daily wage of 50 workers of a factory was ₹ 200 with a standard deviation of ₹ 40. Each worker is given a raise of ₹ 20. What

is the new average daily wage and standard deviation ? Have the wages become more or less uniform?

Watch Video Solution

9. If in the previous question, each worker is given a hike of 10% in wages, how are the mean and standard deviation values affected?

View Text Solution

10. Calculate the Mean Deviation about Mean and Standard Deviation for the following distribution:

Classes	Frequencies
20–40	3
40–80	6
80–100	20
100–120	12
120–140	9
	50

Watch Video Solution

11. The sum of 10 values is 100 and the sum of their squares is 1,090. Find the Coefficient of Variation.

Watch Video Solution

Learning By Doing

1. 5 students obtained following marks in Statistics:

20,35,25,30,15

Find out range and coefficient of range.

Watch Video Solution

2. Prices of shares of a company were noted as under from Monday through Saturday.Find out range and the coefficient of range.

Day	Mon.	Tues.	Wed.	Thu.	Fri.	Sat.
Price (₹)	200	210	208	160	220	250

Watch Video Solution

3. Calculate range and coefficient of range of the following series:

Marks	10	20	30	40	50	60	70
Number of Students	15	18	25	30	16	10	9

Watch Video Solution

4. Find out the range the coefficient of range from the following data:

Daily Wage (₹)	6	7	8	9	10	11	12	15
Number of Workers	10	15	12	18	25	20	10	4

Watch Video Solution

5. Marks obtained by 100 students of a class are given below. Find out range and coefficient of range of the marks.

Marks	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Number of Students	1	10	16	22	20	18	8	2	3

Watch Video Solution

6. In an examination, 25 students obtained the following marks. Find out coefficient of range of the marks.

Marks	5–9	10–14	15–19	20–24	25–29	30–34	35–39
Number of Students	1	3	8	5	4	2	2

Watch Video Solution

7. Estimate quartile deviation and the coefficient of quartile deviation of the following data:

8,9,11,12,13,17,20,21,23,25,27

Show that QD is the average of the difference between two quartiles.

View Text Solution

8. Find out quartile deviation and coefficient of quartile deviation of the following series:

28,18,20,24,30,15,47,27

View Text Solution

9. Find out quartile deviation and the coefficient of quartile deviation of the following data:

Age	20	30	40	50	60	70	80
Members	3	61	132	153	140	51	3

Watch Video Solution

10. Estimate quartile deviation and the coefficient of quartile deviation of the following series:

Height (inches)	58	59	60	61	62	63	64	65	66
Number of Students	15	20	32	35	33	22	20	10	8

Watch Video Solution

11. Given the following data, find out quartile deviation and the coefficient of quartile deviation:

Wages (₹)	–5	5–10	10–15	15–20	20–25	25–30
Number of Workers	4	6	3	8	12	7

Watch Video Solution

12. Find out quartile deviation and coefficient of quartile deviation from the following data:

Class Interval	0–10	10–20	20–30	30–40	40–50	50–60
Frequency	4	8	5	4	9	10

Watch Video Solution

13. Find out mean deviation of the monthly income of the five families given below, using arithmetic mean of the data:

852,635,792,836,750

Watch Video Solution

14. Weight of nine students of a class is given below. Calculate mean deviation, using median

and arithmetic mean of the series. Also calculate coefficient of mean deviation:

Weight(kg): 47,50,58,45,53,59,47,60,49

Watch Video Solution

15. Find out mean deviation and its coefficient of the following data:

Items	5	10	15	20	25	30	35	40
Frequency	8	16	18	22	14	9	6	7

Watch Video Solution

16. Calculate mean deviation from the following data, using mean and median, respectively.

Size	4	6	8	10	12	14	16
Frequency	2	4	5	3	2	1	4

Watch Video Solution

17. The following table gives distribution of marks for 50 students of a clas. Calculate mean deviation from the mean and median

respectively from the data:

Marks Obtained	140–150	150–160	160–170	170–180	180–190	190–200
Frequency	4	6	10	18	9	3

Watch Video Solution

18. Estimate the coefficient of mean deviation from the median from the following data:

Age Group	20–30	30–40	40–50	50–60	60–70
Number of Workers	8	12	20	16	4

Watch Video Solution

19. The following data gives marks obtained by 7 students of a class. Find out standard deviation of the marks.

40,42,38,44,46,48,50

 Watch Video Solution

20. Weight of some students is given below in hilograms. Find out standard deviation.

41,44,45,49,50,53,55,55,58,60

 Watch Video Solution

21. Using step-deviation method, calculate standard deviation of the following series:

Marks	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Number of Students	5	10	20	40	30	20	10	4

Watch Video Solution

22. Find out standard deviation of the savings of the following 10 persons:

Persons	1	2	3	4	5	6	7	8	9	10
Savings (₹)	114	108	100	98	101	109	117	119	121	126

Watch Video Solution

23. Find out standard deviation and its coefficient of the following series:

Size	10	20	30	40	50	60	70
Frequency	6	8	16	15	33	11	12

Watch Video Solution

24. Calculate standard deviation of the following series:

Size	0–5	5–10	10–15	15–20	20–25	25–30	30–35	35–40
Frequency	2	5	7	13	21	16	8	3

Watch Video Solution

25. Calculate standard deviation of the following data,using step-deviation method.

Age	20–30	30–40	40–50	50–60	60–70	70–80	80–90
Frequency	3	61	132	153	140	51	2

Watch Video Solution

26. Find out standard deviation of the distribution of population in 104 villages of a Tehsil, as given below by step-deviation method.

Distribution of Population

Population	No. of Villages
0–200	10
200–400	28
400–1,000	42
1,000–2,000	18
2,000–5,000	6

View Text Solution

27. Calculate mean and standard deviation of the following data by short-cut method:

Class Interval	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Frequency	5	10	15	20	25	18	7

Watch Video Solution

28. Following are the marks obtained by 20 students in statistics. Find out coefficient of variation of the marks.

62	85	73	81	74	58	66	72	54	84
65	50	83	62	85	52	80	86	71	75

Watch Video Solution

29. Calculate coefficient of variation of the following data:

S. No.	1	2	3	4	5	6	7	8
Value	25	42	33	48	45	29	43	39

Watch Video Solution

30. Given the following data, calculate coefficient of variation:

Age	20–30	30–40	40–50	50–60	60–70	70–80	80–90
Number of Students	3	61	132	153	140	51	2

Watch Video Solution