

ECONOMICS

BOOKS - VK GLOBAL PUBLICATION ECONOMICS (HINGLISH)

MEASURES OF CENTRAL TENDENCY - ARITHMETIC MEAN



1. Pocket allowance of 10 students is Rs. 15,20,30,22,25,18,40,50,55 and 65. Find out the average pocket allowance.



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2. Following is the pocket allowance of 10 students. Find out arithmetic mean using Short-cut Method.

Pocket Allowance(Rs.) 15 20 30 22 25 18 40 50 55 65



3. Following is the weekly wage earnings of 19 workers:

Wages(Rs.) 10 20 30 40 50 Number of Workers 4 5 3 2 5

Calculate arithmetic mean using Direst Method,



4. Following are the wages of 19 workers: Wages(Rs.) $10 \ 20 \ 30 \ 40 \ 50$

Number of Workers 4 5 3 2 5

Calculate arithmetic mean, using Short-cut Method.



5. Wage rate of 19 workers is given below:

Wages(Rs.) 10 20 30 40 50

Number of Workers 4 5 3 2 5

Calculate arithmetic mean, using 'Step-deviation Method.



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6. The following table shows marks in English secured by students of Class X in your school in their examination. Calculate mean marks using Direct Method.



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7. The following table shows marks secured by the students of a class in an examination in English:

Marks $0 - 10 \quad 10 - 20 \quad 20 - 30 \quad 30 - 40 \quad 40 - 50$

24

40

36

20

Calculte mean marks using Short-cut Method.

20



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Number of Students

8. The following table shows marks obtained by the students of a class in

their test in English:

 $Marks \qquad \qquad 0-10 \quad 10-20 \quad 20-30 \quad 30-40 \quad 40-50$

Number of Students 20 24 40 36 20

Calculate arithmetic mean using Step-deviation method.



9. Marks in Statistics of the students of Class XI are given below.

Find out arithmetic mean.

Marks Number of Students

Less than 10 5

Less than 20 17

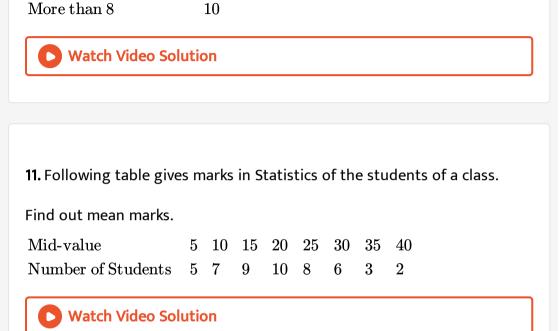
Less than 30 31

Less than 40 41

Less than 50 49



10. The following table shows marks in economics of the students of a class. Calculate arithmetic mean.



Number of Students

30

28

24

18

a class. Find out average pocket expenses. $Pocket\ Expenses(Rs.)\quad 20-29\quad 30-39\quad 40-49\quad 50-59\quad 60-69$

12. The following table shows monthly pocket expenses of the students of

Number of Students 10 8 6 4 2



Marks

More than 0

More than 2

More than 4

More than 6

13. Mean marks obtained by 100 students are estimated to be 40. Later on

its is found that one value was read as 83 instead of 53.

Find out the "corrected" mean.



14. Suppose mean of a series of 5 items is 30. Four values are, 10,15,30 and

35 respectively. Find the missing (5th) value of the series.



15. Calculate weighted mean of the following data:

Marks(X)81 76 74 58 70 73

Weight(W) 2 6 3 3



16. 60 students of Section A of Class XI, obtained 40 mean marks in Statistics, 40 students of Section B obtained 35 mean marks in Statistics. Find out mean marks in Statistics for Class XI as a whole.



17. In the following frequency distribution, the frequency of the class interval (40-50) is not known. Find it, if the arithmetic mean of the distribution is 52.

6

Wages(Rs.) $10-20 \ 20-30 \ 30-40 \ 40-50 \ 50-60 \ 6$ Number of Workes 5 3 4



missing value.

18. If the arithmetic mean of the following series is 115.86, find the

Wages(Rs.) 110 125 128112113 117130 Number of Workers 25 13 171514 8 6 2



19. Follwing are the marks obtained by 8 students in Statistics.

Calculate the arithmetic mean.

 $Marks \ 15 \ 18 \ 16 \ 45 \ 32 \ 40 \ 30 \ 28$



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20. Following are the marks obtained by 25 students in economics.

Find out the mean marks by using Direct and Short-cut Method.

Marks 10 20 30 40 50 60

 $Number of Students \quad 5 \quad 2 \quad 3 \quad 8 \quad 4 \quad 3$



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21. Calculate mean salary by Step-deviation Method of the following data:

Salary Group	Number of Employees
60–75	3
75–90	4
90–105	5
105–120	5
120–135	7
135–150	6



22. Calculate mean from the following data:

Marks $10 - 20 \quad 10 - 30 \quad 10 - 40 \quad 10 - 50 \quad 10 - 60$ Number of Students 16 97

4



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23. A train runs 25 miles at a speed of 30 mph, another 50 miles at a speed of 40 mph, then due to repairs of the track travels for 6 minutes at

56

10 -

13

124

a speed of 10 mph and finally covers the remaining distance of 24 miles at a speed of 24 mph. What is the average speed in miles per hour?



24. If the average salary of a firm is Rs. 400 and the number of workers is 60, find the total salary bill of the firm.



25. The mean of 5 observations is 7. Later on, it was found that two observations 4 and 8 were wrongly taken instead of 5 and 9. Find the corrected mean.



26. The mean monthly salary paid to all employees in a certain company was Rs. 600. The mean monthly salaries paid to male and female

employees were Rs. 620 and Rs. 520 respectively. Find the percentage of male to female employees in the company.



27. Find the missing information in the following table:

	\boldsymbol{A}	B	C	Combined
Number(N)	10	8	_	24

 $\operatorname{Mean}(\overline{X})$ 20 – 6 15



28. In a class of 50 students 10 have failed and their average of marks is 2.5 . The total marks secured by the entire class were 281. Find the average marks those who have passed.



29. Following are the marks of 37 students:

Marks 4 6 8 10 12 14 No. of Students 5 7 6 8 6 5

Calculate mean marks, using Short-cut Method.



30. Find out the arithmetic mean by the Step-deviation Method of the following:

Class Interval 0-10 10-20 20-30 30-40 40-50 50-60 60

32

52

42

32

Frequency 12 16



31. Calculate the mean marks from the following data:

Marks 20-25 25-30 30-35 35-40 40-45 45-50 No. of Students 10 12 8 20 11 4



32. Find out the arithmetic mean from the following data:

Marks (less than) 5 10 15 20 25 30 Number of Students 22310 23 30 54 69 80



33. Calculate the weighted mean from the following data:

Marks 60 75 63 59 55 Weight 2 1 5 5 3



34. Mean of 100 observations is found to be 40. If at the time of computation two items are wrongly taken as 30 and 27 instead of 3 and 72, find the correct mean.



35. The mean monthly salary paid to 77 employees in a company was Rs.

78. The mean salary of 32 of then was Rs. 45 and of the other 25 was Rs.

82. What was the mean salary of the remaining?



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36. The average marks of 39 students of a class is 50. The marks obtained by 40th student are 39 more than the average marks of all the 40 student are 39 more than the average marks of all the 40 students. Find the mean marks of all the 40 students.



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37. Pocket allowance of 10 students is Rs. 15,20,30,22,25,18,40,50,55 and 65. Find out the average pocket allowance.



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38. Following is the pocket allowance of 10 students. Find out arithmetic mean using Short-cut Method.

Pocket Allowance(Rs.) 15 20 30 22 25 18 40 50 55 65



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39. Following is the weekly wage earnings of 19 workers:

Wages(Rs.) 10 20 30 40 50

 $Number of Workers \quad 4 \quad \quad 5 \quad \quad 3 \quad \quad 2 \quad \quad 5$

Calculate arithmetic mean using Direst Method,



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40. Following are the wages of 19 workers:

Wages(Rs.) 10 20 30 40 50

Number of Workers 4 5 3 2 5

Calculate arithmetic mean, using Short-cut Method.



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41. Wage rate of 19 workers is given below:

Wages(Rs.) 10 20 30 40 50

Number of Workers 4 5 3 2

Calculate arithmetic mean, using 'Step-deviation Method.



42. The following table shows marks in English secured by students of Class X in your school in their examination. Calculate mean marks using

5

Direct Method.

Number of Students 20 24 40 36 20



43. The following table shows marks secured by the students of a class in an examination in English:

Marks $0 - 10 \quad 10 - 20 \quad 20 - 30 \quad 30 - 40 \quad 40 - 50$

Number of Students 20 24 40 36 20

Calculte mean marks using Short-cut Method.

44. The following table shows marks obtained by the students of a class

in their test in English:

Marks
$$0 - 10 \quad 10 - 20 \quad 20 - 30 \quad 30 - 40 \quad 40 - 50$$

Number of Students 20 24 40 36 20

Calculate arithmetic mean using Step-deviation method.



45. Marks in Statistics of the students of Class XI are given below.

Find out arithmetic mean.

Less than 10 5

Less than 20 17

Less than 30 31

Less than 40 41

Less than 50 49



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46. The following table shows marks in economics of the students of a

class. Calculate arithmetic mean.

Marks Number of Students
More than 0 30

More than 2 28

More than 4 24

More than 6 18
More than 8 10



47. Following table gives marks in Statistics of the students of a class.

Find out mean marks.

Mid-value 5 10 15 20 25 30 35 40 Number of Students 5 7 9 10 8 6 3 2



48. The following table shows monthly pocket expenses of the students

60 - 69

of a class. Find out average pocket expenses. Pocket Expenses(Rs.) 20-29 30-39 40-49 50-59

Number of Students 10 8 6 4 2

49. Mean marks obtained by 100 students are estimated to be 40. Later on its is found that one value was read as 83 instead of 53.

Find out the "corrected" mean.



50. Suppose mean of a series of 5 items is 30. Four values are, 10,15,30 and

35 respectively. Find the missing (5th) value of the series.

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51. Calculate weighted mean of the following data:

Marks(X) 81 76 74 58 70 73

 $Weight(W) \quad 2 \quad 3 \quad 6 \quad 7 \quad 3 \quad 7$



52. 60 students of Section A of Class XI, obtained 40 mean marks in Statistics, 40 students of Section B obtained 35 mean marks in Statistics.

Find out mean marks in Statistics for Class XI as a whole.



53. In the following frequency distribution, the frequency of the class interval (40-50) is not known. Find it, if the arithmetic mean of the distribution is 52.

Wages(Rs.) $10-20 \ 20-30 \ 30-40 \ 40-50 \ 50-60 \ 60-7$ Number of Workes $5 \ 3 \ 4 \ ? \ 2 \ 6$



54. If the arithmetic mean of the following series is 115.86, find the missing value.

Wages(Rs.) 112 113 125 128130 110 117? Number of Workers 25 17 13 15 14 8 6 2



55. Follwing are the marks obtained by 8 students in Statistics.

Calculate the arithmetic mean.

Marks 15 18 16 45 32 40 30 28



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56. Following are the marks obtained by 25 students in economics.

Find out the mean marks by using Direct and Short-cut Method.

Marks 10 20 30 40 50 60

 $Number of Students \quad 5 \quad 2 \quad 3 \quad 8 \quad 4 \quad 3$



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57. Calculate mean salary by Step-deviation Method of the following data:

Salary Group	Number of Employees
60–75	3
75–90	4
90–105	5
105–120	5
120–135	7
135-150	6



58. Calculate mean from the following data:

N 1 10 00 10 00 1

4

Marks $10 - 20 \quad 10 - 30 \quad 10 - 40 \quad 10 - 50 \quad 10 - 60$



Number of Students

59. A train runs 25 miles at a speed of 30 mph, another 50 miles at a speed of 40 mph, then due to repairs of the track travels for 6 minutes at

16

56

10 -

13

124

97

a speed of 10 mph and finally covers the remaining distance of 24 miles at a speed of 24 mph. What is the average speed in miles per hour?



60. If the average salary of a firm is Rs. 400 and the number of workers is 60, find the total salary bill of the firm.



61. The mean of 5 observations is 7. Later on, it was found that two observations 4 and 8 were wrongly taken instead of 5 and 9. Find the corrected mean.



62. The mean monthly salary paid to all employees in a certain company was Rs. 600. The mean monthly salaries paid to male and female

employees were Rs. 620 and Rs. 520 respectively. Find the percentage of male to female employees in the company.



63. Find the missing information in the following table:

	A	B	C	Combined
Number(N)	10	8	_	24

 $\operatorname{Mean}(\overline{X})$ 20 – 6 15



64. In a class of 50 students 10 have failed and their average of marks is 2.5 . The total marks secured by the entire class were 281. Find the average marks those who have passed.



65. Following are the marks of 37 students:

Marks

Calculate mean marks, using Short-cut Method.

No. of Students 5 7 6

66. Find out the arithmetic mean by the Step-deviation Method of the following:

Class Interval 0-10 10-20 20-30 30-40 40-50 50-60 60Frequency



67. Calculate the mean marks from the following data:

Marks $20 - 25 \quad 25 - 30 \quad 30 - 35 \quad 35 - 40 \quad 40 - 45 \quad 45 - 50$ No. of Students



68. Find out the arithmetic mean from the following data:

Marks (less than) 5 10 15 20 25 30

 $Number of Students \quad 22310 \quad 23 \quad 30 \quad 54 \quad 69 \quad 80$



69. Calculate the weighted mean from the following data:

Marks 60 75 63 59 55 Weight 2 1 5 5 3



70. Mean of 100 observations is found to be 40. If at the time of computation two items are wrongly taken as 30 and 27 instead of 3 and 72, find the correct mean.



- 71. The mean monthly salary paid to 77 employees in a company was Rs.
- 78. The mean salary of 32 of then was Rs. 45 and of the other 25 was Rs.
- 82. What was the mean salary of the remaining?



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72. The average marks of 39 students of a class is 50. The marks obtained by 40th student are 39 more than the average marks of all the 40 student are 39 more than the average marks of all the 40 students. Find the mean marks of all the 40 students.



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Exercise A Mcqs

- 1. Which of the following is a type of mathematical average?
 - A. Median

B. Partition value

C. Mode

D. None of these

Answer: D



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2. Formula for finding arithmetic mean is:

$$\operatorname{A.} \overline{X} = \sum X$$

$$\operatorname{B.} \overline{X} = \frac{\sum X}{N}$$

$$\mathsf{C.}\,\overline{X}=\,\sum X-N$$

D.
$$\overline{X} = rac{N}{\sum X}$$

Answer: B



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3. Arithmetic mean of these items 5,7,9,15,20 is:
A. 10
B. 10.2
C. 11.2
D. 12
Answer: C
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4. Arithmetic mean of these items: 10, 15, X, 20, 30, is 20. Find out the
missing item.
A. 10
B. 15
C. 5
D. 12

Answer: D



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5. By which formula is combined arithmetic mean estimated?

A.
$$\overline{X}_{12} rac{X_1 + X_2 + ... + X_n}{N_1 + N_2}$$

B.
$$\overline{X}_{12}=rac{\overline{X}_1N_1+\overline{X}_2N_2}{N_1+N_2}$$

C.
$$\overline{X}_{12}=rac{\overline{X}_1+\overline{X}_2}{N_1+N_2}$$

D. None of these

Answer: B



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6. Arithmetic mean of a series is 15 and if 5 is added in all the items of this series, the new arithmetic mean will be:

B. 20

C. 18

D. 10

Answer: B



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7. What is the formula to find out arithmetic mean through Short-cut

A.
$$\overline{X} = rac{\sum X}{N}$$

$$\operatorname{B.} \overline{X} = A + \frac{\sum d}{N}$$

$$\mathsf{C.}\,\overline{X} = \frac{\sum X}{N} + A$$

$$\mathrm{D.}\, \overline{X} = \frac{\sum fX}{\sum f}$$

Answer: B



8. Which of the following	is not a measure	of central	tendency?
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- A. Mean
- B. Mode
- C. Standard deviation
- D. Median

Answer: C



9. Which is not a method to find arithmetic mean?

- A. Direct method
- B. Short-cut method
- C. Step-deviation method

D. Karl Pearson's method	
Answer: D	
View Text Solution	
10. Assumed mean is taken in which method?	
A. Direct method	

B. Step-deviation method

C. Karl Pearson's method

D. Spearman's method

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Answer: B

11. Sum of deviations of different values from arithmetic mean is always equal to: A. zero B. one C. less than one D. more then one Answer: A **View Text Solution** 12. Which of the following is a type of mathematical average? A. Median B. Partition value C. Mode D. None of these

Answer: D



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13. Formula for finding arithmetic mean is:

A.
$$\overline{X} = \sum X$$

$$\operatorname{B.} \overline{X} = \frac{\sum X}{N}$$

$$\mathsf{C.}\,\overline{X}=\,\sum X-N$$

$$\mathrm{D.}\, \overline{X} = \frac{N}{\sum X}$$

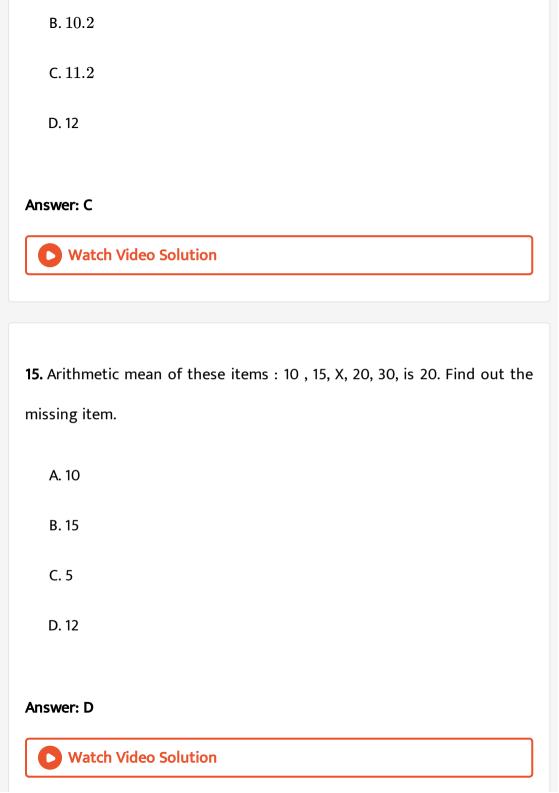
Answer: B



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14. Arithmetic mean of these items 5,7,9,15,20 is:

A. 10



16. By which formula is combined arithmetic mean estimated?

A.
$$\overline{X}_{12} rac{X_1 + X_2 + ... + X_n}{N_1 + N_2}$$

B.
$$\overline{X}_{12}=rac{\overline{X}_1N_1+\overline{X}_2N_2}{N_1+N_2}$$

C.
$$\overline{X}_{12}=rac{\overline{X}_1+\overline{X}_2}{N_1+N_2}$$

D. None of these

Answer: B



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17. Arithmetic mean of a series is 15 and if 5 is added in all the items of this series, the new arithmetic mean will be:

A. 5

B. 20

C. 18

Answer: B



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18. What is the formula to find out arithmetic mean through Short-cut Method in individual series?

A.
$$\overline{X} = rac{\sum X}{N}$$

$$\operatorname{B.} \overline{X} = A + \frac{\sum d}{N}$$

$$\mathsf{C.}\,\overline{X} = \frac{\sum X}{N} + A$$

$$\operatorname{D.} \overline{X} = \frac{\sum fX}{\sum f}$$

Answer: B



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19. Which of the following is not a measure of central tendency?
A. Mean
B. Mode
C. Standard deviation
D. Median
Answer: C
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20. Which is not a method to find arithmetic mean?
A. Direct method
B. Short-cut method
C. Step-deviation method
D. Karl Pearson's method

Answer: D Watch Video Solution

- 21. Assumed mean is taken in which method?
 - A. Direct method
 - B. Step-deviation method
 - C. Karl Pearson's method
 - D. Spearman's method

Answer: B



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22. Sum of deviations of different values from arithmetic mean is always equal to:

A. zero
B. one
C. less than one
D. more then one
Answer: A
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Exercise B Choose Appropriate Word And Fill In The Blank
1. In arithmetic mean, all items of a series are given equal
importance. (Simple/Weighted)
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View rexe solution
2 mean is the simplest measure of central tendencies.
(Arithmetic/Geometric)

View Text Solution
3 method is adopted when deviations from the assumed mean
have some common factor. (Short-cut/Step-deviation)
View Text Solution
4. If each item of a series is increased by some constant, then the mean
also by same constant. (increases/decreases)
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5. The sum of squared deviations of the items from arithmetic mean is
(minimum/maximum)
View Text Solution

6. Arithmetic mean makes comparison (easy/difficult)
View Text Solution
7. Arithmetic mean is not a suitable measure in case of values. (absolute/percentage)
View Text Solution
8. In arithmetic mean, all items of a series are given equal importance. (Simple/Weighted)
Watch Video Solution
9 mean is the simplest measure of central tendencies. (Arithmetic/Geometric)
Watch Video Solution

10 method is adopted when deviations from the assumed mean
have some common factor. (Short-cut/Step-deviation)
Watch Video Solution
11. If each item of a series is increased by some constant, then the mean
also by same constant. (increases/decreases)
Watch Video Solution
12. The sum of squared deviations of the items from arithmetic mean is (minimum/maximum)
Watch Video Solution
13. Arithmetic mean makes comparison (easy/difficult)

. .

Watch Video Solution
14. Arithmetic mean is not a suitable measure in case of values.
(absolute/percentage)
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Exercise C State Whether The Following Statements Are True Or False
1. Central tendency refers to a central value of a statistical series.
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View Text Solution
2. Averages help in the formulation of economic policies.
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3. The mean of weighted items is called weighted average.



4. If a given number is subtracted from all the items in a series, then the arithmetic mean of that series will increase by the same specific value.



5. Arithmetic mean is shown by the following formula:

$$\overline{X} = X_1 + X_2 + {\hat{\mathfrak{a}}} {f \in} \cline{0.05cm} + X_n - N = \sum X - N$$



6. Central tendency refers to a central value of a statistical series.



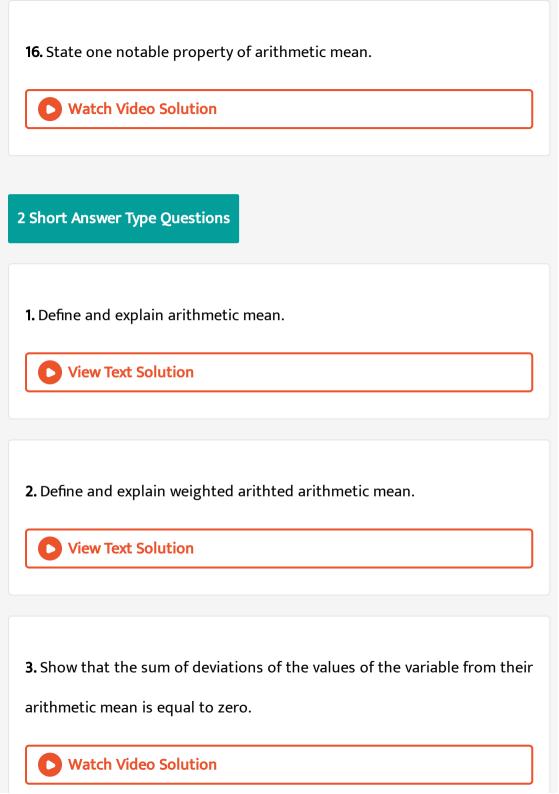
7. Averages help in the formulation of economic policies.

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8. The mean of weighted items is called weighted average.
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Exercise D Concept Based Objective Questions
1. What do you mean by average value?
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2. Define arithmetic mean.
View Text Solution
3. Define weighted arithmetic mean.

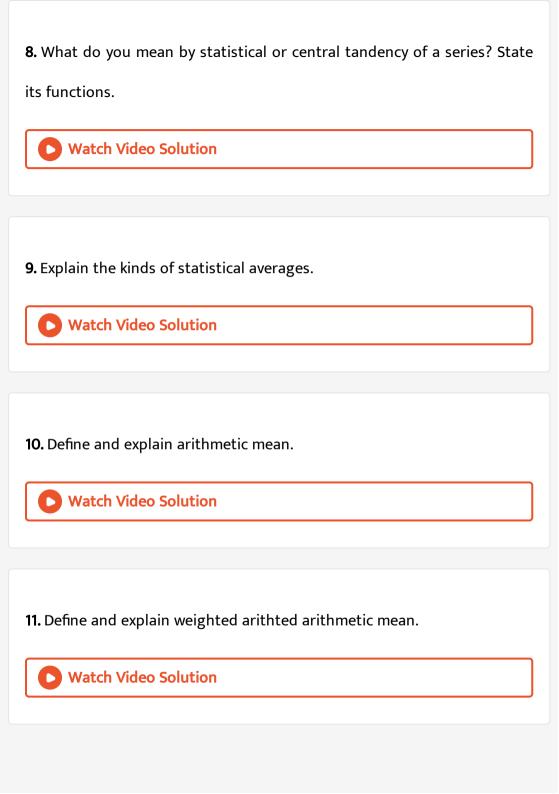
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4. What are the types of arithmetic mean?
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5. Name any two mathematical averages.
View Text Solution
6. Give formula of calculating arithmetic mean of a continuous series using direct method.
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7. Give formula of weighted average.
View Text Solution

8. State one notable property of arithmetic mean. View Text Solution
9. What do you mean by average value?
Watch Video Solution
10. Define Arithmetic mean.
Watch Video Solution
11. Define weighted arithmetic mean.
Watch Video Solution

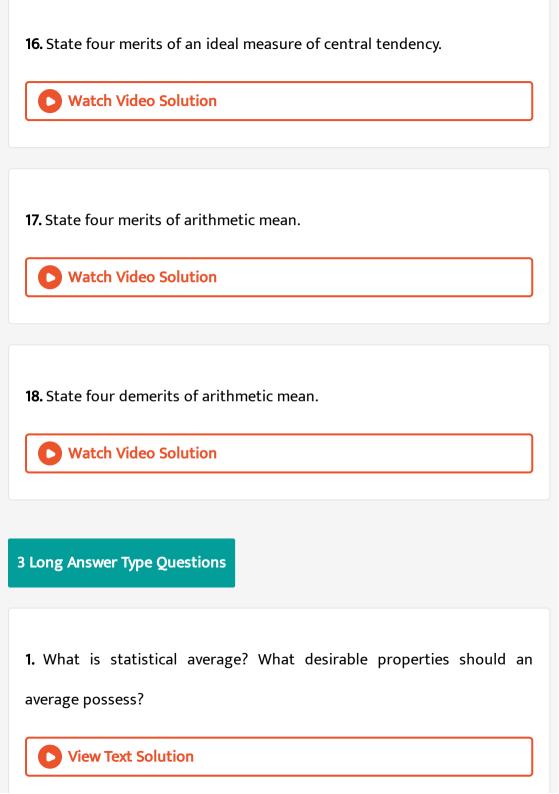
12. What are the types of arithmetic mean?
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13. Name any two mathematical averages.
Watch Video Solution
14. Give formula of calculating arithmetic mean of a continuous series
using direct method.
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15. Give formula of weighted average.
Watch Video Solution



4. Give the four objective of statistical average. View Text Solution
5. State four merits of an ideal measure of central tendency.
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6. State four merits of arithmetic mean.
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7. State four demerits of arithmetic mean.
View Text Solution



12. Discuss the various properties of arithmetic mean.
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13. The arithmetic mean is described as the central of gravity of the distribution of values of the variable . Explain.
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14. Show that the sum of deviations of the values of the variable from
their arithmetic mean is equal to zero.
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15. Give the four objective of statistical average.
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2. Discuss the various methods of measuring arithmetic mean and point out its merits and demerits.



3. Why is the arithmetic mean the most commonly used measure of central tendency?



4. Explain the step-deviation method of calculating arithmetic mean, taking an imaginary set of data.



5. Discuss the various methods of measuring arithmetic mean and point out its merits and demerits.

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6. Why is the arithmetic mean the most commonly used mea
central tendency?
Watch Video Solution

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4 Essential Practicals

- 1. Eight workers earn the following income:
- 30, 36, 34, 40, 42, 46, 54, 62

Find out arithmetic mean.



2. Pocket allowance of 5 students respectively are:

125, 75, 150, 175, 200

Find out arithmetic mean.



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3. Following is the height of 10 students:

Students \boldsymbol{A} $E \quad F \quad G \quad H \quad I$ BC DHeight(cm) 155 153 168160162166 164180 157 165 Calculate arithmetic mean using Direct and Short-cut Methods.



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4. Weight of 15 persons is as follows:

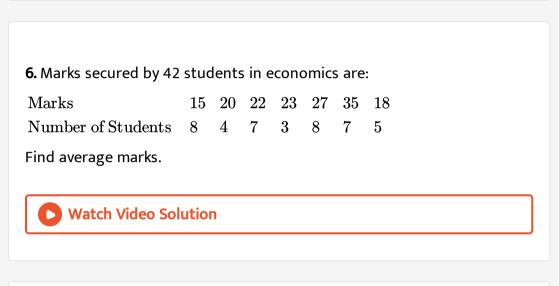
Weight(kg) 20 28 34 39 42 50 53 54 59 64 72 74 74 78

Find out mean weight, using Direct Method as well as Short-cut Method.



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5. Calculate average of the following discrete series. Use Short-cut Method by taking 25 as assmed average.



7. Average age of the people of a country is shown in the following table:

 $10 - 20 \quad 20 - 30 \quad 30 - 40 \quad 40 - 50$



Find out mean age by Direct Method.

Age (Years)

People ('000)

Size

Frequency (f) 2

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50 - 60



8. Calculate the arithmetic mean of the following frequency distribution by Direct Method:

9. Calculate arithmetic mean from the following data by Short-cut Method:

Class Interval
$$20-25$$
 $25-30$ $30-35$ $35-40$ $40-45$ $45-50$ Frequency 10 12 8 20 11 4

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10. Find out arithmetic mean from the following distribution by Short-cut

10-8 8-6 6-4 4-2 2-0

4

2

Class Interval $10 - 20 \quad 20 - 40 \quad 40 - 70 \quad 70 - 120 \quad 120 - 200$

26

8

10

4

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Frequency

Frequency 10 8 6 Watch Video Solution

Items

Method:

11. Sachin made the following runs in different matches:

5-15 15-25 25-35 35-45 45-5510 12 17 19 22 Frequency

Calculate the average mean of the runs by Step-deviation Method.



12. Calculate arithmetic mean of the following frequency distribution:

Class less than $10 \ 10 - 20 \ 20 - 30 \ 30 - 40 \ 40 - 50 \ 50 - 60$



- 13. Mean marks obtained by a student in his five subjects are 15. In English he secures 8 marks, in Economics 12, in Mathematics 18, and in Commerce 9. Find out the marks he secured in Statistics.
 - Watch Video Solution

- **14.** Mean value of the weekly income of 40 families is 265. But in the calculation, income of one family was read as 150 instead of 115. Find the
 - Watch Video Solution

"Corrected" mean.

15. Average pocket allowance of 6 students is Rs. 45. Of these, pocket allowance of 5 students is 20, 30, 22, 24 and 32 respectively. What is the pocket allowance of the sixth student?



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16. The following table shows wages of the workers. Calculate the average wage of the workers.

Wages(Rs.) 10-19 20-29 30-39 40-49 50-59

Number of Workers 8 9 12 11 6



17. Ten players of the Australian team made an average an average of 63 runs and ten players of the Indian team made an average of 77 runs. Calculate the average run made by both the teams.



18. Average income of 50 families is Rs. 3,000. Of these average income of 12 families is Rs. 1,800. Find out the average income of the remaining families.



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19. In the following frequency distribution, if the arithmetic mean is 45.6,

6

X

4

3

find out missing frequency.

Wages(Rs.)

$$10 - 20 \quad 20 - 30 \quad 30 - 40 \quad 40 - 50 \quad 50 - 60 \quad 60 -$$





20. Calculate the weighted mean of the following data:

Items 96 102 124 164 104 148 12 Weight5 6 3 7 9



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21. A student obtained 60 marks in English, 75 in Hindi, 63 in Mathematics, 59 in Economics and 55 in Statistics. Calculate weighted mean of the marks if weights are respectively 2, 1, 5, 5 and 3.



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22. A housewife uses 10 kg of Wheat, 20 kg of Fuel, 5 kg of Sugar, and 2 kg of oil. Prices (per kg) of these items are Rs. 1.50, 50 paise, Rs. 2.80 and Rs. 10 respectively. Taking quantities used as weights find out the weighted arithmetic average of the prices.



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23. Calculate weighted mean of the following data by using Direct and

Short-cut Methods:

Items 81 76 74 58 70 73 Weight23 6 7 3 7



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24. Eight workers earn the following income:

30, 36, 34, 40, 42, 46, 54, 62

Find out arithmetic mean.



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25. Pocket allowance of 5 students respectively are:

125, 75, 150, 175, 200

Find out arithmetic mean.



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26. Following is the height of 10 students:

Students R \boldsymbol{E} FGH168 160 162 166 164 180 157

165

Calculate arithmetic mean using Direct and Short-cut Methods.



Height(cm) 155 153

27. Weight of 15 persons is as follows:

Weight(kg) 20 28 34 39 42 50 53 54 59 64 72 74 74 78 79 Find out mean weight, using Direct Method as well as Short-cut Method.



28. Calculate average of the following discrete series. Use Short-cut

26

25

24

23

21

Method by taking 25 as assmed average.

30

29

Frequency (f) 2 4 5 3 2 7 1 4 5 7

28 - 27



Size

29. Marks secured by 42 students in economics are:

Marks 15 20 22 23 27 35 18

 $Number of Students \quad 8 \quad 4 \quad 7 \quad 3 \quad 8 \quad 7 \quad 5$

Find average marks.



30. Average age of the people of a counry is shown in the following table:

Age (Years) 10-20 20-30 30-40 40-50 50-60

People ('000) 30 32 15 12 9



Find out mean age by Direct Method.

31. Calculate the arithmetic mean of the following frequency distribution

by Direct Method:

Class Interval 10 - 20 20 - 40 40 - 70 70 - 120 120 - 200 Frequency 4 10 26 8 2



32. Calculate arithmetic mean from the following data by Short-cut

Method:

Class Interval 20-25 25-30 30-35 35-40 40-45 45-50 5 Frequency 10 12 8 20 11 4



33. Find out arithmetic mean from the following distribution by Short-cut

Method: $\frac{\text{Items}}{\text{Frequency}} = \frac{10-8}{8} \cdot \frac{8-6}{6} \cdot \frac{6-4}{4} \cdot \frac{4-2}{2} \cdot \frac{2-0}{2}$



34. Sachin made the following runs in different matches:

Runs 5-15 15-25 25-35 35-45 45-55 Frequency 10 12 17 19 22

Calculate the average mean of the runs by Step-deviation Method.



35. Calculate arithmetic mean of the following frequency distribution:

Class less than $10 \ 10 - 20 \ 20 - 30 \ 30 - 40 \ 40 - 50 \ 50 - 60$

18

22

6

4

12

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5

Frequency

36. Mean marks obtained by a student in his five subjects are 15. In English he secures 8 marks, in Economics 12, in Mathematics 18, and in Commerce 9. Find out the marks he secured in Statistics.



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37. Mean value of the weekly income of 40 families is 265. But in the calculation, income of one family was read as 150 instead of 115. Find the "Corrected" mean.



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38. Average pocket allowance of 6 students is Rs. 45. Of these, pocket allowance of 5 students is 20, 30, 22, 24 and 32 respectively. What is the pocket allowance of the sixth student?



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39. The following table shows wages of the workers. Calculate the average wage of the workers.

Wages(Rs.) 10 - 19 20 - 29 30 - 39 40 - 49 50 - 59Number of Workers 8 9 12 11 6



40. Ten players of the Australian team made an average an average of 60 runs and ten players of the Indian team made an average of 70 runs. Calculate the average run made by both the teams.



41. Average income of 50 families is Rs. 3,000. Of these average income of 12 families is Rs. 1,800. Find out the average income of the remaining families.



find out missing frequency.

Wages(Rs.) 10-20 20-30 30-40 40-50 50-60 60-Number of Workers 5 6 7 X 4 3

42. In the following frequency distribution, if the arithmetic mean is 45.6,



43. Calculate the weighted mean of the following data:



44. A student obtained 60 marks in English, 75 in Hindi, 63 in Mathematics, 59 in Economics and 55 in Statistics. Calculate weighted mean of the marks if weights are respectively 2, 1, 5, 5 and 3.



45. A housewife uses 10 kg of Wheat, 20 kg of Fuel, 5 kg of Sugar, and 2 kg of oil. Prices (per kg) of these items are Rs. 1.50, 50 paise, Rs. 2.80 and Rs. 10 respectively. Taking quantities used as weights find out the weighted arithmetic average of the prices.



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46. Calculate weighted mean of the following data by using Direct and

Short-cut Methods:

Items 81 76 74 58 70 73 Weight 2 3 6 7 3 7



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5 Ncert Questions With Hints To Answers

- 1. Which average would be suitable in the following cases?
- (i) Average size of readymede garments.

- (ii) Average intelligence of students in a class.
- (iii) Average wages in an industrial concern.
- (iv) Average wages in an industrial concern.
- (v) When quantities of the variable are in ratios.
- (vi) When quantities of the variable are in ratios.
- (vii) In case of open-ended frequency distribution.



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2. Indicate the most appropriate alternative from the multiple choices provided against each question.

The most suitable average for qualitative measurement is:

- A. arithmetic mean
 - B. median
 - C. mode
 - D. N/A

3. Indicate the most appropriate alternative from the multiple choices provided against each question.

Which average is affected most by the presence of extreme items?

A. median

B. Mode

C. arithmetic mean

D. geometric mean

Answer: c



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4. Indicate the most appropriate alternative from the multiple choices provided against each question.

The algebraic sum of deviation of a set of n values from A.M. is



B. O

C. 1

D. None of these

Answer: b



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5. The following table gives the daily income of ten workers in a factory.

B - C

Find the arithmetic mean. Workers \boldsymbol{A}

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Daily Income(in Rs.) 120 150 180 200 250 300 220 350 370 260

D

E

F

G

H

.J

6. Following information pertains to the daily income of 150 families.

Calculate the arithmetic mean.

(i) Average size of readymede garments.
(ii) Average intelligence of students in a class.
(iii) Average wages in an industrial concern.
(iv) Average wages in an industrial concern.
(v) When quantities of the variable are in ratios.
(vi) When quantities of the variable are in ratios.

Number of Families

150

140

115

95

70

60

40

25

7. Which average would be suitable in the following cases?

(vii) In case of open-ended frequency distribution.

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Income (in Rs.)

More than 75

More than 85

More than 95

More than 105

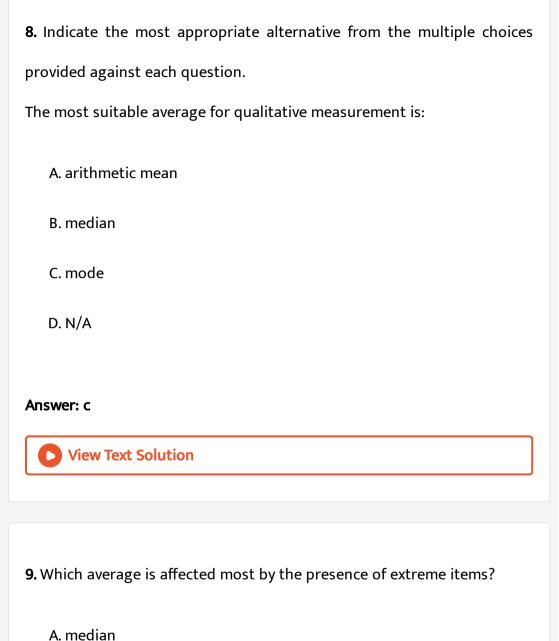
More than 115

More than 125

More than 135

More than 145

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B. Mode

C. arithmetic mean

D. geometric mean
Answer: c
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10. The algebraic sum of deviation of a set of n values from A.M. is
A. n
B. O
C. 1
D. None of these
Answer: b
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11. The following table gives the daily income of ten workers in a factory.

Find the arithmetic mean.

Workers A B C D E F G H I J Daily Income(in Rs.) 120 150 180 200 250 300 220 350 370 260



12. Following information pertains to the daily income of 150 families.

Calculate the arithmetic mean.

Income (in Rs.) Number of Families

More than 75 150

More than 85 140

More than 95 115 More than 105 95

More than 115 70

More than 125 60
More than 135 40
More than 145 25

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