



MATHS

BOOKS - OBJECTIVE RD SHARMA ENGLISH

MEASURES OF CENTRAL TENDENCY

Illustration

1. The arithmetic mean of first n natural numbers, is

A. $\frac{\pi}{2}$

B. $\frac{n+1}{2}$

C. $\frac{n(n+1)}{2}$

D. $\frac{n-1}{2}$

Answer: B



Watch Video Solution

2. The arithmetic mean of first n odd natural numbers, is

A. n

B. $\frac{n}{2}$

C. $\frac{n-1}{2}$

D. $\frac{n+2}{2}$

Answer: A



Watch Video Solution

3. The arithmetic mean of the numbers

$1, 3, 3^2, \dots, 3^{n-1}$, is

A. $\frac{3^n - 1}{2}$

B. $\frac{3^n - 1}{2n}$

C. $\frac{3^n + 1}{2}$

D. $\frac{3^n + 1}{2n}$

Answer: B



Watch Video Solution

4. The arithmetic mean of ${}^nC_0, {}^nC_1, {}^nC_2, \dots, {}^nC_n$, is

A. $\frac{1}{n}$

B. $\frac{2^n}{n}$

C. $\frac{2^{n-1}}{n}$

D. $\frac{2^{n+1}}{n}$

Answer: B



Watch Video Solution

5. If the mean of numbers 27, 31, 89, 107, 156, is 82, then the mean of 130, 126, 68, 50, 1 is

A. 80

B. 82

C. 157

D. 75

Answer: D



[Watch Video Solution](#)

6. If the mean of first n natural numbers is $\frac{5n}{9}$, then $n =$ (a) 5 (b) 4 (c) 9

(d) 10

A. 5

B. 4

C. 9

D. none of these

Answer: C



Watch Video Solution

7. If the arithmetic mean of the observations $x_1, x_2, x_3, \dots, x_n$ is 1, then the arithmetic mean of $\frac{x_1}{k}, \frac{x_2}{k}, \frac{x_3}{k}, \dots, \frac{x_n}{k}, (k > 0)$ is

- A. greater than 1
- B. Less than 1
- C. equal to 1
- D. none of these

Answer: D



Watch Video Solution

8. The mean of first n odd natural numbers is $\frac{n^2}{81}$, then $n =$ (a) 9 (b) 81
(c) 27 (d) 18

A. 9

B. 81

C. 27

D. none of these

Answer: B



Watch Video Solution

9. If the mean of $x + 2$, $2x + 3$, $3x + 4$, $4x + 5$ is $x + 2$, find x

A. 0

B. 1

C. -1

D. 2

Answer: C



[Watch Video Solution](#)

10. If the mean of the following distribution is 2.6, then the value of y is

Variable (x) : 1 2 3 4 5 Frequency (y) : 4 5 y 1 2 (a) 3 (b) 8 (c) 13 (d) 24

A. 3

B. 8

C. 13

D. 24

Answer: B



[Watch Video Solution](#)

11. The arithmetic mean of the following frequency distribution:

Variate(X)	:	0	1	2	3	...	n	
Frequency(f)	:	nC_0	nC_1	nC_2	nC_3	...	nC_n	is

A. $\frac{2^n}{n}$

B. $\frac{2^n}{n+1}$

C. $\frac{n}{2}$

D. $\frac{2}{n}$

Answer: C



Watch Video Solution

12. If the mean of the following frequency distribution is 5, then $b =$

$$x_i : 3 \quad 5 \quad 7 \quad 4$$

$$f_i : 2 \quad a \quad 5 \quad b$$

A. 10

B. 6

C. 8

D. none of these

Answer: B



[Watch Video Solution](#)

13. If the arithmetic mean of the following distribution is 8.2, then $a =$

$$x_i : 1 \quad 3 \quad 5 \quad 9 \quad 11 \quad 13$$

$$f_i : 3 \quad 2 \quad 7 \quad a \quad 4 \quad 8$$

A. 5

B. 6

C. 9

D. none of these

Answer: B



[Watch Video Solution](#)

14. The mean of a set of observations is a . If each observation is multiplied by b and each product is decreased by c , then the mean of new set of observations is

A. $\frac{a}{b} + c$

B. $ab - c$

C. $\frac{a}{b} - c$

D. $ab + c$

Answer: B



Watch Video Solution

15. The average score of boys in an examination of a school is 71 and that of girls is 73. The average score of school in that examinations is 71.8. The ratio of the number of boys to the number of girls appeared in the examination, is

A. 3:2

B. 3:4

C. 1:2

D. 2:1

Answer: A



[Watch Video Solution](#)

16. The mean weight of 150 students in a certain class is 60 kg. The mean weight of boys is 70 kg and that of girls in the class is 55 kg. Find the number of boys and girls in the class.

A. 100 and 50

B. 50 and 100

C. 150 and 100

D. 100 and 150

Answer: A



[Watch Video Solution](#)

17. The average marks of boys in a class is 52 and that of girls is 42. The average marks of boys and girls combined is 50. The percentage of boys in the class is

A. 80

B. 60

C. 40

D. 20

Answer: A



[Watch Video Solution](#)

18. 10 is the mean of a set of 7 observations and 5 is the mean of a set of 3 observations, the mean of the combined set is

- A. 15
- B. 10
- C. 8.5
- D. none of these

Answer: C



[Watch Video Solution](#)

19. A student obtained 60, 75 and 85 marks respectively in three monthly examinations in Physics and 95 marks in the final examination. The three monthly examinations are of equal weightage whereas the final examination is weighted twice as much as a monthly examination. His average marks in Physics are (a) 78.75 (b) 79 (c) 82 (d) 85

A. 80

B. 81

C. 82

D. 85

Answer: C



[Watch Video Solution](#)

20. Compute the geometric mean of 2, 4, 8.



[Watch Video Solution](#)

21. The following are the marks of 9 students in a class. Find the median:

34, 32, 48, 38, 24, 30, 27, 21, 35

A. 32

B. 34

C. 38

D. 30

Answer: A



[Watch Video Solution](#)

22. Find the median of the daily wages of ten workers from the following data: Rs 20, 25, 17, 18, 8, 15, 22, 11, 9, 14.

A. 15

B. 16

C. 17

D. 14

Answer: B



[Watch Video Solution](#)

23. The median of 21 observations is 18. If two observations 15 and 24 are included to the observations, then the median of new series is

- A. 15
- B. 18
- C. 24
- D. 16

Answer: B



[Watch Video Solution](#)

24. The median of the series 8, 12, 15, 7, x , 19, 22 lies in the interval

- A. [12, 15]
- B. [7, 15]
- C. [15, 17]
- D. [9, 12]

Answer: A



Watch Video Solution

25. If the median of the data $x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8$ is α and $x_1 < x_2 < x_3 < x_4 < x_5 < x_6 < x_7 < x_8$, then the median of x_3, x_4, x_5, x_6 is

A. α

B. $\frac{\alpha}{2}$

C. $\frac{\alpha}{3}$

D. $\frac{\alpha}{4}$

Answer: A



Watch Video Solution

26. If the mean of 26 , 19 , 15 , 24 , and x is x , then find the median of the data .

A. 23

B. 22

C. 20

D. 21

Answer: D



[Watch Video Solution](#)

27. If a , b , c , d are non-zero integers such that $a < b < c < d$ and mean and median of a , b , c and d are both equal to zero, then which one of the following is correct?

A. $b = -c$

B. $a = -d$

C. both (a) and (b)

D. none of these

Answer: C



[Watch Video Solution](#)

28. The mean and median of the data a , b and c are 50 and 35 , where $a < b < c$. If $c - a = 55$, then find $(b - a)$.

A. 8

B. 7

C. 3

D. 5

Answer: D



[Watch Video Solution](#)

29. if $x < y < 2x$ and the mean and median of $x, y, 2x$ are 15, 12 respectively then x

A. 7

B. 11

C. 10

D. 8

Answer: B



[Watch Video Solution](#)

30. If the mean of the squares of first n natural numbers is 105, then find the median of the first n natural numbers.

A. 8

B. 9

C. 10

D. 11

Answer: B



[Watch Video Solution](#)

31. The median for the following frequency distribution is :

x_i	:	1	2	3	4	5	6	7	8	9
f_i	:	8	10	11	16	20	25	15	9	6

A. 6

B. 5

C. 7

D. 4

Answer: B



[Watch Video Solution](#)

32. The median from the following distribution is

Class:	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	35 –
Frequency:	5	6	15	10	5	4	2

A. 19

B. 19.5

C. 20

D. 18

Answer: B



[Watch Video Solution](#)

33. For the following information of wages of 30 workers in a factory, the value of $Q_1 + Q_2 + Q_3$ is



A. 1187.5

B. 789.5

C. 705

D. 872.5

Answer: A



[View Text Solution](#)

34. For the following data the value of $Q_1 + Q_3 - Q_2$, is

Age in years	:	20	30	40	50	60	70	80
No. of members	:	3	61	132	153	140	51	3

A. Q_1

B. Q_2

C. Q_3

D. $2Q_2$

Answer: B



[Watch Video Solution](#)

35. Compute the first quartile and third deciles from the following data :

Weekly Income (in Rs.)	58	59	60	61	62	63	64	65	66
No. of workers	2	3	6	15	10	5	4	3	1

A. Q_1

B. Q_2

C. Q_3

D. none of these

Answer: D



[Watch Video Solution](#)

36. The value of Q_3 for the following distribution is

Marks group:	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30	30 – 35	35 – 40
No of Student:	5	6	15	10	5	4	2

A. 15

B. 21.5

C. 25

D. 25.5

Answer: C



Watch Video Solution

37. Find the mode of the following data: 120, 110, 130, 110, 120, 140, 130, 120, 140, 120

A. 110

B. 120

C. 130

D. 115

Answer: B



Watch Video Solution

38. The mode of the following discrete series is:

x_i	1	3	5	6	12	15
f_i	5	7	3	8	6	5

A. 3

B. 12

C. 8

D. 6

Answer: D



[Watch Video Solution](#)

39. If the mode of observations 5, 4, 4, 3, 5, x , 3, 4, 3, 5, 4, 3, 5 is 3, then median of the observation is

A. 3

B. 4

C. 5

D. 3.5

Answer: B



[Watch Video Solution](#)

40. The mode for the following frequency distribution :



[Watch Video Solution](#)

41. The modal class for the following frequency distribution, is

Marks:	0 – 10	10 – 20	20 – 40	40 – 50	50 – 60	60 – 70
No. of students:	4	6	14	16	14	8

A. 20-40

B. 40-50

C. 50-60

D. 70-90

Answer: B



[Watch Video Solution](#)

42. If $x < 6$ and 17.5 is the mode of the following frequency distribution.

Class-interval: 0 – 5 5 – 10 10 – 15 15 – 20 20 – 25

Frequency: 5 2 3 6 x

Then, $x =$

A. 3

B. 2

C. 4

D. 5

Answer: A



[Watch Video Solution](#)

43. If the mode for the following frequency distribution is 22 and $10 > y > x$, then $y =$

Class-interval:	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	Total
Frequency:	5	8	10	x	y	30

A. 2

B. 5

C. 3

D. 4

Answer: B



[Watch Video Solution](#)

44. If the ratio of mean and median of a certain data is 2:3, then find the ratio of its mode and mean.

A. 4:3

B. 7:6

C. 7:8

D. 5:2

Answer: D



[Watch Video Solution](#)

45. If the ratio of mode and median of a certain data is 6:5, then find the ratio of its mean and median.

A. 8:9

B. 9:10

C. 9:7

D. 8:11

Answer: B



[Watch Video Solution](#)

46. If the difference of mode and median of a data is 24, then the difference of median and mean is (a) 12 (b) 24 (c) 8 (d) 36

A. 12

B. 24

C. 8

D. 36

Answer: A



[Watch Video Solution](#)

47. The arithmetic mean and mode of a data are 24 and 12 respectively, then find the median of the data.

A. 20

B. 18

C. 21

D. 22

Answer: A



[Watch Video Solution](#)

48. If mode of a series exceeds its mean by 12, then mode exceeds the median by (a) 4 (b) 8 (c) 6 (d) 10

A. 4

B. 8

C. 6

D. 10

Answer: B



[Watch Video Solution](#)

1. If the arithmetic mean of the first n natural numbers is 15 , then n is _____ .

A. 15

B. 20

C. 14

D. 29

Answer: D



[Watch Video Solution](#)

2. If the arithmetic mean of 7, 8, x , 11, 14 is x , then $x =$ (a) 9 (b) 9.5
(c) 10 (d) 10.5

A. 9

B. 9.5

C. 10

D. 10.5

Answer: C



[Watch Video Solution](#)

3. The mean of 16 observations is 16 . If one observation 16 is deleted and three observations 5 , 5 and 6 are included , then find the mean of the final observations .

A. 16

B. 15.5

C. 13.5

D. none of these

Answer: D



[Watch Video Solution](#)

4. The arithmetic mean of 12 observations is 15. If two observations 20 and 25 are removed then the arithmetic mean of remaining observations is

A. 14.5

B. 13.5

C. 12.5

D. 13

Answer: B



[Watch Video Solution](#)

5. If the average of a , b , c and d is the average of b and c , then which one of the following is necessarily true?

A. $a + d = b + c$

B. $a + b = c + d$

$$C. a - d = b - c$$

$$D. \frac{a + d}{4} = \frac{b + c}{2}$$

Answer: A



Watch Video Solution

6. If the arithmetic mean of the following data is 7, then $a + b =$

$$x_i \quad 4 \quad 6 \quad 7 \quad 9$$

$$f_i \quad a \quad 4 \quad b \quad 5$$

A. 4

B. 2

C. 3

D. cannot be determined

Answer: D



Watch Video Solution

7. The average of n numbers $x_1, x_2, x_3, \dots, x_n$ is M . If x_n is replaced by x' , then new average is

A. $\frac{M - x_n + x'}{n}$

B. $\frac{(n - 1)M + x'}{n}$

C. $\frac{nM - x_n + x'}{n}$

D. $M - x_n + x'$

Answer: C



Watch Video Solution

8. For a symmetrical distribution $Q_1 = 20$ and $Q_3 = 40$. The value of 50^{th} percentile, is

A. 20

B. 30

C. 40

D. none of these

Answer: B



[Watch Video Solution](#)

9. The variance of the series $a, a+d, a+2d, \dots, a+2nd$ is :

A. $a + (n - 1) d$

B. $a + nd$

C. $a + (n + 1) d$

D. none of these

Answer: B



[Watch Video Solution](#)

10. If the mean of the following data is 5.5, then $x =$

x_i 2 4 6 8

f_i 3 5 6 x

A. 6

B. 8

C. 15

D. 11

Answer: A



[Watch Video Solution](#)

11. The median of the data 5, 6, 7, 8, 9, 10 is _____.

A. 7

B. 8

C. 7.5

D. 8.5

Answer: C



[Watch Video Solution](#)

12. The Median of the following discrete series is

x_i 3 6 5 8 12 7

f_i 5 2 4 6 7 6

A. 7

B. 8

C. 9

D. 6

Answer: A



[Watch Video Solution](#)

13. The median class in the following frequency distribution is

Class interval :	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency :	12	13	25	20	10

A. 10 – 20

B. 20 – 30

C. 30 – 40

D. none of these

Answer: B



[Watch Video Solution](#)

14. The number of observations in a group is 40. If the average of first 10 is 4.5 and that of the remaining 30 is 3.5 then the average of the whole group is

A. $\frac{15}{4}$

B. $\frac{1}{5}$

C. 8

D. 4

Answer: A



[Watch Video Solution](#)

15. GM of the numbers $3, 3^2, 3^3, \dots, 3^n$ is

A. $3^{2/n}$

B. $3^{\frac{n-1}{2}}$

C. $3^{n/2}$

D. $3^{\frac{n+1}{2}}$

Answer: D



[Watch Video Solution](#)

16. If the median of 25 observations is 45 and if the observations greater than the median are increased by 4, then the median of the new data is

A. 49

B. 41

C. 45

D. none of these

Answer: C



[Watch Video Solution](#)

17. The median of a set of nine distinct observations is 20.5. If each of the largest four observations of the set is increased by 2, then the median of the new set

A. remains the same as that of original set

B. is increased by 2

C. is decreased by 2

D. is two times the original median

Answer: A



[Watch Video Solution](#)

18. A boy goes to a school from his home at a speed of x km/hr and comes back at a speed of y km/hr, then the average speed is given by

A. AM

B. GM

C. HM

D. none of these

Answer: C



[Watch Video Solution](#)

19. A particle covers half of its total distance with speed v_1 and the rest half distance with speed v_2 . Its average speed during the complete journey is :

A. $\frac{2v_1v_2}{v_1 + v_2}$

B. $\frac{v_1 + v_2}{2}$

C. $\sqrt{v_1v_2}$

D. none of these

Answer: A



[Watch Video Solution](#)

20. A person purchases 1 kg of tomatoes from each of the 4 places at the rate of 1 kg, 2 kg, 3 kg, 4 kg per rupee respectively. On an average, he has purchased x kg of tomatoes per rupee. Then the value of x is (a) 1.92 (b) 2 (c) 2.5 (d) None of these

A. 2

B. 25

C. 1.92

D. none of these

Answer: C



Watch Video Solution

21. The mode of the following distribution is

Class interval :	1 – 5	6 – 10	11 – 15	16 – 20	21 – 25
Frequency :	4	7	10	8	6

A. 14.5

B. 16.5

C. 10.5

D. 13.5

Answer: D



Watch Video Solution

22. The median of 100 observations grouped in classes of equal width is 25. If the median class interval is 20-30 and the number of observations less than 20 is 45, then the frequency of median class is

- A. 20
- B. 12
- C. 10
- D. 15

Answer: C



[Watch Video Solution](#)

23. The age distribution of 400 persons in a colony having median age 32 is given below:

Age (in years) :	20 – 25	25 – 30	30 – 35	35 – 40	40 – 45	45 – 50
Frequency :	110	x	75	55	y	30

Then, $x - y$ is

A. 10

B. 20

C. -10

D. -20

Answer: C



Watch Video Solution

24. The mean of the data set comprising of 16 observations is 16. If one of the observation valued 16 is deleted and three new observations valued 3, 4 and 5 are added to the data, then the mean of the resultant data, is :

(1) 16.8

(2) 16.0

(3) 15.8

(4) 14.0

A. 15.8

B. 14

C. 16.8

D. 16.0

Answer: B



Watch Video Solution

Exercise

1. If the mean of a set of observations x_1, x_2, \dots, x_n is \bar{X} , then the mean of the observations $x_i + 2i, i = 1, 2, \dots, n$ is

A. $\bar{X} + 2$

B. $\bar{X} + 2n$

C. $\bar{X} + (n + 1)$

D. $\bar{X} + n$

Answer: C



Watch Video Solution

2. If a variate X is expressed as a linear function of two variates U and V in the form $X=aU+bV$, then the mean \bar{X} of X is

A. $a\bar{U} + b\bar{V}$

B. $\bar{U} + \bar{V}$

C. $b\bar{U} + a\bar{V}$

D. none of these

Answer: A



Watch Video Solution

3. The AM of n numbers of a series is \bar{X} . If the sum of first $(n-1)$ terms is k , then the n^{th} number is

A. $\bar{X} - k$

B. $n\bar{X} - k$

C. $\bar{X} - nk$

D. $n\bar{X} - nk$

Answer: B



Watch Video Solution

4. The mean of a set of numbers is \bar{X} . If each number is divided by 3, then the new mean is

A. \bar{X}

B. $\bar{X} + 3$

C. $3\bar{X}$

D. $\frac{X}{3}$

Answer: D

 [Watch Video Solution](#)

5. The weighted mean of the first n natural numbers whose weights are equal to the squares of the corresponding numbers is

A. $2n + 1$

B. $\frac{1}{2}(2n + 1)$

C. $\frac{1}{3}(2n + 1)$

D. $\frac{2n + 1}{6}$

Answer: C

 [Watch Video Solution](#)

6. The AM of the series $1, 2, 4, 8, 16, \dots, 2^n$ is

A. $\frac{2^n - 1}{n}$

B. $\frac{2^{n+1} - 1}{n + 1}$

C. $\frac{2^n + 1}{n}$

D. $\frac{2^n - 1}{n + 1}$

Answer: B



Watch Video Solution

7. If the mean of n observations $x_1, x_2, x_3 \dots x_n$ is \bar{x} then the sum of deviations of observations from mean is

A. 0

B. $\frac{\bar{X}}{n}$

C. $n\bar{X}$

D. none of these

Answer: A



Watch Video Solution

8. The one which is the measure of the central tendency is

- A. mode
- B. mean deviation
- C. standard deviation
- D. coefficient of correlation

Answer: A



[Watch Video Solution](#)

9. The most stable measure of central tendency is

- A. the mean
- B. the median
- C. the mode
- D. none of these

Answer: A



Watch Video Solution

10. The mean of the distribution, in which the values of X are 1, 2, ..,n the frequency of each being unity is :

A. $\frac{n(n + 1)}{2}$

B. $\frac{n}{2}$

C. $\frac{n + 1}{2}$

D. none of these

Answer: C



Watch Video Solution

11. 10 is the mean of a set of 7 observations and 5 is the mean of a set of 3 observations, the mean of the combined set is

A. 15

B. 10

C. 8.5

D. 7.5

Answer: C



[Watch Video Solution](#)

12. A statistical measure which cannot be determined graphically is

A. median

B. mode

C. harmonic mean

D. mean

Answer: C,D



[Watch Video Solution](#)

13. The measure of central tendency of a statistical data which takes into account all the data is

(i) mean

(ii) median

(iii) mode

(iv) range

A. mean

B. median

C. mode

D. none of these

Answer: A



[Watch Video Solution](#)

14. An ogive is used to determine

A. mean

B. median

C. mode

D. HM

Answer: B



[Watch Video Solution](#)

15. The geometric mean of the series 1, 2, 4, 8, 16, ..., 2^n is

A. $2^{n+1}/2$

B. 2^{n+1}

C. $2^{n/2}$

D. 2^n

Answer: A



[Watch Video Solution](#)

16. If G_1, G_2 are the geometric means for two series of observations and G is the GM of the ratios of the corresponding observations then G is equal to

A. $\frac{G_1}{G_2}$

B. $\log G_1 - \log G_2$

C. $\frac{\log G_1}{\log G_2}$

D. $\log(G_1 \cdot G_2)$

Answer: A



Watch Video Solution

17. If G is the GM of the product of r sets of observations with geometric means G_1, G_2, \dots, G_r respectively, then G is equal to

A. $\log G_1 + \log G_2 + \dots + \log G_r$

B. $G_1 \cdot G_2 \cdot \dots \cdot G_r$

C. $\log G_1 \cdot \log G_2 \dots \log G_r$

D. none of these

Answer: B



[Watch Video Solution](#)

18. A group of 10 items has arithmetic mean 6. If the arithmetic mean of 4 of these items is 7.5, then the mean of the remaining items is

A. 6.5

B. 5.5

C. 4.5

D. 5.0

Answer: D



[Watch Video Solution](#)

19. The arithmetic mean of a set of observations is \bar{X} . If each observation is divided by α and then is increased by 10, then the mean of the new series is

A. $\frac{\bar{X}}{\alpha}$

B. $\frac{\bar{X} + 10}{\alpha}$

C. $\frac{\bar{X} + 10\alpha}{\alpha}$

D. $\alpha\bar{X} + 10$

Answer: C



Watch Video Solution

20. The weighted mean of the first n natural numbers whose weights are equal to the squares of the corresponding numbers is

A. $\frac{n + 1}{2}$

B. $\frac{3n(n+1)}{2(2n+1)}$

C. $\frac{(n+1)(2n+1)}{6}$

D. $\frac{n(n+1)}{2}$

Answer: B



Watch Video Solution

21. If a variable takes value $0,1,2,3,\dots,n$ with frequencies $1,C(n,1),C(n,2),C(n,3),\dots,C(n,n)$ respectively, then the arithmetic mean is

A. n

B. $\frac{2^n}{n}$

C. $n + 1$

D. $\frac{n}{2}$

Answer: D



Watch Video Solution

22. The weighted mean of the first n natural numbers whose weights are equal to the squares of the corresponding numbers is

A. $(n + 1)(2)$

B. $\frac{2n + 1}{2}$

C. $\frac{2n + 1}{3}$

D. $\frac{(2n + 1)(n + 1)}{6}$

Answer: A



Watch Video Solution

23. The mean of n observations is \bar{X} . If the first item is increased by 1, second by 2 and so on, then the new mean is $\bar{X} + n$ (b) $\bar{X} + \frac{n}{2}$ (c) $\bar{X} + \frac{n + 2}{2}$ (d) None of these

A. $\bar{X} + n$

B. $\bar{X} + \frac{n}{2}$

C. $\bar{X} + \frac{n+1}{2}$

D. none of these

Answer: C



Watch Video Solution

24. If \bar{X}_1 and \bar{X}_2 are the means of two series such that $\bar{X}_1 < \bar{X}_2$ and \bar{X} is the mean of the combined series, then

A. $\bar{X} < \bar{X}_1$

B. $\bar{X} > \bar{X}_2$

C. $\bar{X} = \frac{\bar{X}_1 + \bar{X}_2}{2}$

D. $\bar{X}_1 < \bar{X} < \bar{X}_2$

Answer: D



Watch Video Solution

25. The mean of the series x_1, x_2, \dots, x_n is \bar{X} . If x_2 is replaced by λ then the new mean is

A. $\bar{X} + x_2 + \lambda$

B. $\frac{\bar{X} - x_2 - \lambda}{n}$

C. $\frac{(n-1)\bar{X} + \lambda}{n}$

D. $\frac{n\bar{X} - x_2 + \lambda}{n}$

Answer: D



Watch Video Solution

26. The mean income of a group of workers is \bar{X} and that of another group is \bar{Y} . If the number of workers in the second group is 10 times the number of workers in the first group, then the mean income of the combined group is

A. $\frac{\bar{X} + 10\bar{Y}}{3}$

B. $\frac{\bar{X} + 10\bar{Y}}{11}$

C. $\frac{10\bar{X} + \bar{Y}}{Y}$

D. $\frac{\bar{X} + 10\bar{Y}}{9}$

Answer: B



Watch Video Solution

27. If the variable takes values $0, 1, 2, \dots, n$ with frequencies $q^n, {}^n C_1 q^{n-1} p, {}^n C_2 q^{n-2} p^2, \dots, {}^n C_n p^n$, where $p + q = 1$, then the mean is

A. A. np

B. B. nq

C. c. $n(p + q)$

D. d. none of these

Answer: A



Watch Video Solution

28. The AM of n observations is M . If the sum of $n - 4$ observations is a , then the mean of remaining 4 observations is

A. $\frac{nM - a}{4}$

B. $\frac{nM + a}{2}$

C. $\frac{nM - a}{2}$

D. $nM + a$

Answer: A



Watch Video Solution

29. The sum of squares of the deviation of the values of the variable is _____ when taken about their arithmetic mean

A. AM

B. GM

C. HM

D. median

Answer: A



Watch Video Solution

30. If each of n numbers $x_i = i$, is replaced by $(i + 1)x_i$, then the new mean is

A. $\frac{(n + 1)(n + 2)}{n}$

B. $n + 1$

C. $\frac{(n + 1)(n + 2)}{3}$

D. none of these

Answer: D

 [Watch Video Solution](#)

31. The mean age of a combined group of men and women is 25 years. If the mean age of the group of men is 26 years and that of group that of women is 21 years, then find the percentage of men and women in the group.

A. 60, 40

B. 80, 20

C. 20, 80

D. 40, 60

Answer: B

 [Watch Video Solution](#)

32. In a moderately skewed distribution the values of mean and median are 5 and 6 respectively. The value of mode in such a situation is

approximately equal to

A. 8

B. 11

C. 16

D. none of these

Answer: A



[Watch Video Solution](#)

33. One of the methods of determining mode is (a) $\text{Mode} = 2 \text{ Median} - 3 \text{ Mean}$ (b) $\text{Mode} = 2 \text{ Median} + 3 \text{ Mean}$ (c) $\text{Mode} = 3 \text{ Median} - 2 \text{ Mean}$ (d) $\text{Mode} = 3 \text{ Median} + 2 \text{ Mean}$

A. $\text{mode} = 2 \text{ median} - 3 \text{ mean}$

B. $\text{mode} = 2 \text{ median} + 3 \text{ mean}$

C. $\text{mode} = 3 \text{ median} - 2 \text{ mean}$

D. mode = 3 median + 2 mean

Answer: C



Watch Video Solution

34. The positional average of central tendency is

A. GM

B. HM

C. AM

D. Median

Answer: D



Watch Video Solution

35. For dealing with qualitative data the best average is:- a) AM b) GM c) Mode d) Median

A. AM

B. GM

C. Mode

D. Median

Answer: D



[Watch Video Solution](#)

36. If a variable takes discrete values

$$x + 4, x - \frac{7}{2}, x - \frac{5}{2}, x - 3, x - 2, x + \frac{1}{2}, x - \frac{1}{2}, x + 5, (x > 0)$$

then the median is

A. $x - \frac{5}{4}$

B. $x - \frac{1}{2}$

C. $x - 2$

D. $x + \frac{5}{4}$

Answer: A



[Watch Video Solution](#)

37. Which one of the following is not a measure of central value: (a)

Mean (b) Range (c) Median (d) Mode

A. mean

B. median

C. mode

D. range

Answer: D



[Watch Video Solution](#)

38. If $y = f(x)$ be a monotonically increasing or decreasing function of x and M is the median of variable x , then the median of y is

- A. $f(M)$
- B. $M/2$
- C. $f^{-1}(M)$
- D. none of these

Answer: A



[Watch Video Solution](#)

39. The median can graphically be found from

- A. ogive
- B. histogram
- C. frequency curve
- D. none of these

Answer: A



Watch Video Solution

40. If in a moderately asymmetrical distribution the mode and the mean of the data are 6λ and 9λ , respectively, then the median is

A. 8λ

B. 7λ

C. 6λ

D. 5λ

Answer: A



Watch Video Solution

1. The arithmetic mean of first n odd natural numbers, is

A. n

B. $\frac{n + 1}{2}$

C. $n - 1$

D. none of these

Answer: A



[Watch Video Solution](#)

2. The arithmetic mean of ${}^nC_0, {}^nC_1, \dots, {}^nC_n$, is

A. $\frac{2^n}{n}$

B. $\frac{2^n - 1}{n}$

C. $\frac{2^n}{n + 1}$

D. $\frac{2^{n-1}}{n + 1}$

Answer: C



Watch Video Solution

3. The arithmetic mean of the squares of first n natural numbers is

A. $\frac{n + 1}{6}$

B. $\frac{(n + 1)(2n + 1)}{6}$

C. $\frac{n^2 - 1}{6}$

D. none of these

Answer: B



Watch Video Solution

4. Geometric mean of 3, 9 and 27, is

A. 18

B. 6

C. 9

D. none of these

Answer: C



[Watch Video Solution](#)

5. If for a moderately skewed distribution, mode = 60 and mean = 66, then median =

A. 60

B. 64

C. 68

D. none of these

Answer: B



[Watch Video Solution](#)

6. the median of 10, 14, 11, 9, 8, 12, 6 is

A. 14

B. 11

C. 10

D. 12

Answer: C



[Watch Video Solution](#)

7. The mean of discrete observations y_1, y_2, \dots, y_n is given by

A.
$$\frac{\sum_{i=1}^n y_i f_i}{\sum_{i=1}^n f_i}$$

B.
$$\frac{\sum_{i=1}^n y_i f_i}{n}$$

C.
$$\frac{\sum_{i=1}^n y_i}{n}$$

D.
$$\frac{\sum_{i=1}^n y_i}{\sum_{i=1}^n i}$$

Answer: C



[Watch Video Solution](#)

8. The average of 50 numbers is 38. If the numbers 45 and 55 are discarded, then the average of the remaining numbers is (a) 36.5 (b) 37 (c) 37.5 (d) 37.52

A. 36

B. 36.5

C. 37.5

D. 38.5

Answer: C



[Watch Video Solution](#)

9. The geometric mean of numbers $7, 7^2, 7^3, \dots, 7^n$, is

A. $7^{7/4}$

B. $7^{4/7}$

C. $7^{\frac{n-1}{2}}$

D. $7^{\frac{n+1}{2}}$

Answer: D



Watch Video Solution

10. The sum of deviations of n observations about 25 is 25 and sum of deviations of the same n observations about 35 is -25 . The mean of observations is

A. 25

B. 30

C. 35

D. 40

Answer: B



[Watch Video Solution](#)

11. If the sum of the mode and mean of a certain frequency distribution is 129 and the median of the observations is 63, mode and mean are respectively

- A. 69 and 60
- B. 65 and 64
- C. 68 and 61
- D. none of these

Answer: A



[Watch Video Solution](#)

12. The mean weight of 9 items is 15. If one more item is added to the series the mean becomes 16. The value of 10th item is (a) 35 (b) 30 (c) 25 (d) 20

A. 35

B. 30

C. 25

D. 20

Answer: C



[Watch Video Solution](#)

13. The mode of the data 6, 4, 3, 6, 4, 3, 4, 6, 3, x can be

A. only 5

B. both 4 and 6

C. both 3 and 6

D. 3, 4 or 6

Answer: D



[Watch Video Solution](#)

14. If the difference between the mode and median is 2, then the difference between the median and mean is (in the given order)

A. 2

B. 4

C. 1

D. 0

Answer: C



[Watch Video Solution](#)

15. If the mean of the following distribution is 13, then $p =$

$$x_i: 5 \quad 10 \quad 12 \quad 17 \quad 16 \quad 20$$

$$f_i: 9 \quad 3 \quad P \quad 8 \quad 7 \quad 5$$

A. 6

B. 7

C. 10

D. 4

Answer: B



[Watch Video Solution](#)

16. The mean of a certain number of observations is m . If each observation is divided by x ($\neq 0$) and increased by y , then

A. $mx + y$

B. $\frac{mx + y}{x}$

C. $\frac{m + xy}{x}$

D. $m + xy$

Answer: C



Watch Video Solution

17. The frequency distribution of marks obtained by 28 students in a test carrying 40 marks is given below:

Marks:	0 – 10	10 – 20	20 – 30	30 – 40
Number of students:	6	x	y	6

If the mean of the above data is 20, then the difference between x and y is

A. 3

B. 2

C. 1

D. 0

Answer: D



Watch Video Solution

18. If the median of $\frac{x}{2}, \frac{x}{3}, \frac{x}{4}, \frac{x}{5}, \frac{x}{6}$ (where $x > 0$) is 6 then $x =$

- A. 6
- B. 18
- C. 12
- D. 24

Answer: D



[Watch Video Solution](#)

19. If the median of the scores 1, 2, x , 4, 5 (where $1 < 2 < x < 4 < 5$) is 3, then the mean of the scores is

- A. 2
- B. 3
- C. 4
- D. 5

Answer: B



[Watch Video Solution](#)

20. Mode of a certain series is x . If each score is decreased by 3, then mode of the new series is

A. x

B. $x - 3$

C. $x + 3$

D. $3x$

Answer: B



[Watch Video Solution](#)

21. If the median of 33, 28, 20, 25, 34, x is 29, find the maximum possible value of x .

A. 30

B. 31

C. 29

D. 32

Answer: A



Watch Video Solution