MATHS

BOOKS - VGS PUBLICATION-BRILLIANT

FREQUENCY DISTRIBUTION TABLES AND GRAPHS

Example

1. Ashok got the following marks in different subjects in a unit test. 20, 11, 21, 25,23 and 14.

What Is arithmetic mean of his marks?

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2. Arithmetic mean of 7 observations was found to be 32. If one more observation 48 was to be added to the data what would be the new mean of the data?

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3. Mean age of 25 members of a club was 38 years. If 5 members with mean age of 42 years have left the club, what is the present mean age of the club members?

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4. Arithmetic mean of 9 observationis was calculated as 45. In doing so an observation was wrongly taken as 42. For 24. What would then be the correct mean?

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5. Find the value of $2\tan^2 45^o + \cos^2 30^o - \sin^2 60^o$

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6. Find the arithmetic mean of 10 observations 14, 36, 25, 28, 35, 32, 56,42, 50, 62 by assuming mean'as 40. Also find mean by regular formula. Do you find any difference?

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7. Market value (in rupees) of a share through a week is changing as 3672, 3657, 3673, 3665, 3668. Find the arithmetic mean of the market value of the share.

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8. Estimate the arithmetic mean of the following data : 17, 25, 28, 35, 40. Verify your answers by actual calculations.

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9. Estimate the arithmetic mean of the following data : 5, 6, 7, 8, 8, 10 10, 10, 12, 12, 13, 19,19,19,20. Verify your answers by actual calculations.

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10. Find the median of observations 14, 36, 25, 28, 35, 32, 56, 42, 50.

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11. If another observation 61 is also included to the above data what would be the median?

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12. Find the median of the data 24, 65, 85, 12, 45, 35, 15.

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13. If the median of x, 2x, 4x is 12, then find mean of the data.

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14. If the median of the data 24, 29, 34, 38, x is 29, then the value of x is. (i) $x > 38$(ii) $x < 29$ (iii) x lies in between 29 and 34(iv) none

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15. Inashoemart different sizes (in inches)of shoes sold in a week are, 7, 9, 10, 8,7, 9, 7, 9, 6, 3, 5, 5, 7, 10, 7, 8, 7, 9, 6,7,7,7, 10, 5, 4, 3, 5, 7, 8, 7, 9, 7, Which size of the shoes must be kept more in number for next week to sell? Give the reasons.

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16. The blood group of 50 donors, participated in blood donation camp are A, AB, B, A, O,AB, 0,

0, A, AB, B, A, O, AB, O, O, A, B, A, O, AB, O, O, A, AB, B, O, AB, O, B, A, O, AB, 0, 0, A, AB, B, A, O, AB, O, A, AB, B, A, O, AB, O, O, Find the mode of the above verbal data.

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17. Is there any change in mode, if one or two or more observations, equal to mode are included in the data?

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Exercise

1. Find the arithmetic mean of the sales per day in a fair price shop in a week. ₹10000, ₹10250,₹10790,₹ 9865,₹15350,₹10110.

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2. Find the mean of the data: 10.25, 9, 4.75, 8, 2.65, 12, 2.35.

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3. Mean of eight observations is 25. If one observation 11 is excluded, the mean of the remaining.

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4. Arithmetic mean of nine observations is calculated as 38. But in doing so, mistakenly the observation 27 is taken instead of 72. Find the actual mean of the data.

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5. Five years ago mean age of a family was 25 years. What is the present mean age of the family?

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6. Two years ago the mean age of 40 people was 11 years. Now a person left the group and the mean age has changed to 12 years. Find the age of the person who left the group.

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7. Find the sum of deviations of all ob servations of the data 5, 8, 10, 15, 22 from their mean.

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8. If sum of the 20 deviations from the ‘mean is 100, then find the mean deviation.

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9. Marks of 12 students in a unit test are given as 4, 21, 13, 17, 5, 9, 10, 20, 19, 12, 20, 14, Assume a mean and calculate the arithmetic mean of the data. Assume another number as mean and calculate the arithmetic mean again. Do you get the same result? Comment.

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10. Arithmetic mean of marks (out of 25) scored by 10 students was 15. One of the student, named Karishma enquired the other

9 students and find the deviations from her marksare noted as-8,-6, -3,-1, 0, 2, 3, 4, 6.Find Karishma's marks.

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11. The sum of deviations of 'n' observa tions from 25 is 25 and sum of devia tions of the same'n' observations from 35 is-25. Find the mean of the observations.

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12. Find the median of the data:3.3, 3.5, 3.1, 3.7, 3.2, 3.8

13. Find the Median for the following data 30, 17, 12, 21, 33, 22

Ascending order: 12, 17, 21, 22, 30, 33

14. Find the mode of 10, 12, 11, 10, 15,20, 19, 21, 11, 9, 10.

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15. Mode of certain scores is x. If each score is decreased by 3, then find the mode of the new series.

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16. Find the mode of all digits used in writing the natural numbers from 1 to 100.

17. Observations of a raw data are 5,28,15, 10, 15, 8, 24. Add, four more numbers so that mean and median of the data remain the same, but mode increases by 1.

18. If the mean of a set of observations x_1, x_2 _____ x_{10} is 20. Find the mean of x_1 + 4, x_2 + 8, x_3 + 12,_____x_{10}+40.

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19. The median of the data x/5, x, x/4, x/2 and x/8 is 8. Find the value of x.

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20. The median of a set of 9 distinct observations is 20.5. If each of the largest 4 observations of the set is increased by 2, then the median of the new set

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21. Make a frequency distribution of the following series. 1, 2, 2, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 5, 5, 6, 6, 6, 6, 7, 7.

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22. Construct a frequency distribution for the following series of numbers.2, 3, 4, 6, 7, 8, 9, 9, 11, 12, 12, 13, 13, 13, 14, 14, 14, 15, 16, 17, 18, 18, 19, 20, 20, 21, 22, 24, 24, 25.

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23. Write the mark wise frequencies in the following frequency distribution table.

Marks	5	upto 6	upto 7
No. of students	5	11	19

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24. The following marks achieved by 30 candidates in mathematics of SSC examination held in the year 2010.45, 56, 75, 68, 35, 69, 98, 78, 89, 90, 70, 56, 59, 35, 46, 47, 13, 29, 32, 39,93, 84, 76, 79, 40, 54, 68, 69, 60, 59. Construct the frequency distribution table with the-class intervals, failed (0 – 34), third class (35 - 49),

second class (50 - 60), first class (60 - 74) and distinction (75-100).

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25. Cumulative frequency curves are called as ..... curves.

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26. Greater than cumulative frequency is related to_____

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27. What is total frequency and less than cumulative frequency of e last class above.problem? What do you infer?

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28. Class intervals in a grouped frequency distribution are given as 4-11, 12 – 19, 20-27, 28-35, 36-43. Write the next two class intervals.

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29. Class intervals in a grouped frequency distribution are given as 4-11, 12 – 19, 20-27, 28-35, 36-43. Write the next two class intervals.

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30. Class intervals in a grouped frequency distribution are given as 4-11, 12 – 19, 20-27, 28-35, 36-43. Write the next two class intervals.

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31. Class intervals in a grouped frequency distribution are given as 4-11, 12 – 19, 20-27, 28-35, 36-43. Write the next two class intervals.

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32. All the bars (or rectangles) in a bar graph have

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33. Does the length of each bar depend on the lengths of other bars in the graphs?

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34. Does the variation in the value of a bar affect the values of other bars in the same graph?

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35. Where do we use vertical bar graphs and horizontal bar graphs?

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36. Class boundaries are taken on the X-axis. Why not class limits?

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37. Which value decides the width of each rectangle in the histogram?

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38. Which of the following is not a measure of central tendency ?

A. A.M.

B. Median

C. Mode

D. All the above

Answer:

Watch Video Solution

39. Which of the following measures of central tendency is mostly effected by the extreme?

A. A.M.

B. Median

C. Mode

D. All the above

Answer:

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40. What is the mean of first 10 natural numbers?

A. 55

B. 5.5

C. 4.5

D. 45

Answer:

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41. Arithmetic mean of 7 observations was found to be 32. If one more observation 48 was to be added to the data what would be the new mean of the data?

A. 36

B. 32

C. 34

D. 38

Answer:

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42. A.M. of 20, 11, 21,25, 23, 14 is

A. 19

B. 18

C. 17

D. 20

Answer:

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43. Which of the following is depend on all the observations?

A. A.M.

B. Median

C. Mode

D. All the above

Answer:

Watch Video Solution

44. Which of the following contains only one value?

A. A.M.

B. Median

C. Mode

D. All the above

Answer:

Watch Video Solution

45. Arithmetic mean of 9 observationis was calculated as 45. In doing so an observation was wrongly taken as 42. For 24. What would then be the correct mean?

A. 42

B. 44

C. 41

D. 43

Answer:

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46. Which of the following is not affected by smallest and largest values of the observations?

A. A.M.

B. Median

C. Mean

D. None

Answer:

Watch Video Solution

47. What is the mode of first 10 natural numbers?

A. 0

B. 1

C. 5.5

D. 5

Answer:

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48. $\frac{(\text{Sum of observations})}{(\text{Number of observations})}$ = ...

A. Median

B. Frequency

C. Mean

D. None

Answer:

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49. In a data 'n' scores are given and if 'n' is odd, then median is .....

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

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

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

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

Answer:

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50. AM (On Deviation Method)=_____

A. $\bar{x}=A+\frac{\sum(xi-A)}{N}$

B. $\sum fx$

C. $\frac{\sum fx}{\sum f}$

D. $\bar{x} = A - \frac{\sum xi}{N}$

Answer:

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51. If 'n' is even then median is equal to the mean of_____

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

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

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

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

Answer:

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52. Find the median of observations 14, 36, 25, 28, 35, 32, 56, 42, 50.

A. 16

B. 53

C. 35

D. 45

Answer:

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53. The median of first 10 natural numbers is

A. 5.7

B. 5.5

C. 6.5

D. 3.5

Answer:

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54. Mode of 1,2,3,5, 3, 7, 8, 3, 7, 8, 7 is_____

A. 8,1

B. 1,5

C. 7,1

D. 3,7

Answer:

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55. The upper boundary of 1 - 10 is_____

A. 10

B. 11

C. 13

D. 9

Answer:

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56. The upper boundary of 1-10 in 1- 10,11-20 is_____

A. 13.5

B. 10

C. 20.5

D. 11.5

Answer:

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57. Class interval indicates_____

A. Length

B. Area of rectangle

C. Perimeter

D. None

Answer:

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58. Classes like 1-10, 11-20, 21-30,___are called_____classes.

A. Inclusive

B. Exclusive

C. Frequency

D. None

Answer:

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59. 0- 10, 11- 20, 21 - 30, 31 -40. The real lower limit of the class 21 - 30 is

A. Maximum

B. Axis

C. Exclusive

D. Inclusive

Answer:

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60. The mid value of 10 - 20 is

A. 10

B. 20

C. 15

D. 16

Answer:

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61. The upper boundary of a class is 20 and Its mid value is 15. Then its lower boundary is_____

A. 35

B. 20

C. 10

D. 15

Answer:

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62. In a data maximum value = x, minimum value = y then Range = ...

A. range

B. Curve

C. Axis

D. Limit

Answer:

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63. The range of first 100 natural numbers is_____

A. 98

B. 99

C. 109

D. 110

Answer:

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64. range`=_____

A. Value

B. Number of classes

C. Items

D. None

Answer:

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65. The difference between upper and lower boundaries of class is called_____

A. Value

B. Class Interval (C.I.)

C. Frequency

D. None

Answer:

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66. The given figure represents_____

A. Pie chart

B. Histogram

C. Graph

D. None

Answer:

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67. Histograin consists of_____

A. Square

B. Rectangles

C. Circles

D. Angles

Answer:

Watch Video Solution

68. Mid value of 24 - 28 is_____

A. 13

B. 23

C. 16

D. 26

Answer:

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69. 65 is the mid value of_____

A. 70-80

B. 60-100

C. 60-70

D. 60-80

Answer:

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70. Range of 1, 2, 3, ... 10 is ....

A. 9

B. 10

C. 8

D. 32

Answer:

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71. The given figure represents_____

A. Pie chart

B. Bar graph

C. Observations

D. None

Answer:

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72. How many measures of Central tendencies are there?

A. 2

B. 31

C. 10

D. 3

Answer:

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73. Which is based on all observations?

A. Mean

B. Median

C. Range

D. None

Answer:

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74. Median of 1, 2, 3 is_____

A. 1

B. 2

C. 3

D. 10

Answer:

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75. Mode of a,b,c,-zis-

A. P

B. C

C. Z

D. No mode

Answer:

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76. $\sum xi = 380, N = 10, \bar{x} =$ _____

A. 16

B. 10

C. 28

D. 38

Answer:

Watch Video Solution

77. What is the mean of first 10 natural numbers?

A. 6.5

B. 55

C. 3.5

D. 5.5

Answer:

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78. The mean of first five prime numbers is .....

A. 6

B. 5

C. 6.5

D. 5.6

Answer:

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79. Fill in the blanks: Median of 49, 48, 15, 20, 28, 17, 14 and 10 is.....

A. 31

B. 92

C. 24

D. 42

Answer:

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80. Sum of the central angles in a circle is .....

A. 360°

B. 300°

C. 110°

D. 60°

Answer:

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81. The information collected is called .....

A. Limit

B. Information

C. Range

D. Class Interval

Answer:

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82. Range of first 31 natural number is____

A. 10

B. 21

C. 19

D. 30

Answer:

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83. The mean of the first eight multiples of 3 is

A. 19.5

B. 20.5

C. 10.5

D. 10

Answer:

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84. Mean of a, b, c is_____

A. $\frac{abc}{3}$

B. $\frac{a+b+c}{3}$

C. $\frac{a+b}{2}$

D. $\frac{a-b-c}{3}$

Answer:

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85. AM of a-21, a, a +21_____

A. a

B. a-2

C. a+2

D. 3a

Answer:

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86. Mean of 12, 13, 18, 17, x, 10, 15 is 15 then x=_____

A. 40

B. 31

C. 20

D. None

Answer:

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87. AM ofx, x+2,x+4,x+6 and x+8 is_____

A. x-1

B. x+3

C. x+2

D. x+4

Answer:

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88. AM of 94, 85, 59, 62, 65, 70, 68, 72 is___

A. 39

B. 19

C. 69

D. 79

Answer:

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89. Mean of 5, 6, 7, 8, x and 4'is 7 then x=__

A. 10

B. 12

C. 13

D. 19

Answer:

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90. AM of first 9 natural numbers is____

A. 5

B. 6

C. 10

D. 9

Answer:

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91. AM of 8 observations 30.One observation 30 is deleted from the data then the new mean is_____

A. 20

B. 30

C. 10

D. 90

Answer:

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92. AM of 6, y, 7, x and 16 is a then_____

A. x+2y=1

B. x-y=16

C. $x + 2y = 0$

D. x+y=12

Answer:

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93. Median of 40, 52, 34, 47, 31,35, 48, 41, 44, 38 is_____

A. 16.5

B. 40.5

C. 49.5

D. 50

Answer:

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94. Median of first 15 odd numbers is____

A. 32

B. 10

C. 19

D. 15

Answer:

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95. Mean of 9, 11, 13, k, 18, 19 is kthen k=___

A. 16

B. 13

C. 14

D. 10

Answer:

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96. Mode of 14, 17, 13, 14, 14, 3, 2, 1, 14 is___

A. 19

B. 16

C. 24

D. 14

Answer:

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97. Median of $\frac{x}{5}, x, \frac{x}{4}, \frac{x}{2}, \frac{x}{3}$ is 8. If $x > 0$ then value of x is

A. 14

B. 33

C. 10

D. 24

Answer:

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98. The sum of all deviations taken from AM = ...

A. 4

B. 3

C. -1

D. 0

Answer:

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99. The A.M numbers starting with x -1,x+7 is___

A. x+5.5

B. x-5.5

C. x+10

D. x+3

Answer:

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100. AM of 1/3, 7/12, 3/4,1/2, 5/6 is.....

A. 12

B. $\frac{3}{5}$

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

D. $\frac{1}{9}$

Answer:

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101. AM of 11 observations is 17.5 and one observation 15 is deleted from the data then the mean of remaining observations is_____

A. 17.75

B. 19.85

C. 19.5

D. 18.15

Answer:

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102. AM of 8,-2, 9, 6, 13, 17, 12 is_____

A. 9

B. 10

C. 32

D. 19

Answer:

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103. Range of 0, 1, 2, 3, __9 is_____

A. 0

B. 9

C. 12

D. 13

Answer:

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104. Median of $\frac{1}{5}, \frac{1}{2}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}$ is____

A. 1

B. 2

C. 3

D. None

Answer:

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105. AM of x, 15x, 2x is_____

A. 17x

B. 6x

C. 7x

D. 9x

Answer:

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106. Mode of 1, 2, 2, 3, 3, 3 is_____

A. 1

B. 2

C. 3

D. None

Answer:

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107. AM of 1, 3, 5, 7 __(2n-1) is_____

A. $\frac{2n}{3}$

B. $\frac{n}{3}$

C. n+1

D. None

Answer:

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108. Mode of 20, 30, 10, 20, 30, 30, 30, 30, 30, 14, 16, 18, 30, 30 is_____

A. 30

B. 60

C. 39

D. 38

Answer:

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109. AM of-8,-4, +4,-3, 1 is_____

A. -4

B. -1

C. 3

D. None

Answer:

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110. Mean of x, $\frac{1}{x}$ is m then the mean of x^3, $\frac{1}{x^3}$ is_____

A. M($4m^2 - C$)

B. $M^3 + 3$

C. M

D. 3M

Answer:

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111. AM of first 'n' natural numbers is_____

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

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

C. $\left(\frac{n}{2}\right)-1$

D. $\left(\frac{n}{3}\right)-1$

Answer:

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112. Median of 30, 5, 21, 42, 13, 10, 27, 33, 17,8_____

A. 91

B. 19

C. 13

D. 25

Answer:

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113. Mode of 9, 8, 6, 6, 9, 1, 3, 3, 3, 3is____

A. 6

B. 3

C. 1

D. 8

Answer:

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114. There are four 20's in 100 numbers five 40's, six 30's and the remaining are 10's then AM=_____

A. 5.6

B. 7.4

C. 8.5

D. 9

Answer:

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115. Range of 2, 4, 6, 200 is_____

A. 190

B. 100

C. 100

D. 198

Answer:

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116. AM of 1, 2, 3, 4 is_____

A. 4

B. 6

C. 9

D. None

Answer:

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117. .....is known as father of statistics.

A. Gole

B. Ronald Fisher

C. Comtor

D. None

Answer:

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118. Class Interval is denoted by the letter____

A. K

B. C

C. P

D. $\sum$

Answer:

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119. $\bar{x} = A + \frac{\sum f_i d_i}{\sum f_i}$ is the formula to find mean for an ungrouped data. In this formula letter A represents for

A. Class

B. Table

C. Limit

D. Assumed mean

Answer:

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120. The average lower limit of one class and the upper limit of one preceding class is called as ____ boundary.

A. Lower

B. Last

C. Class

D. None

Answer:

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121. If the median of x, 2x, 4x is 12, then find mean of the data.

A. 10

B. 11

C. 12

D. None

Answer:

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122. In a school all the students weared uniform, from this we observe_____

A. Mode

B. Mean

C. Median

D. None

Answer:

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123. Sum of 20 items is 100 then the mean is___

A. 16

B. 30

C. 10

D. 5

Answer:

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124. In 1-10, 11-20, 21-30,__Upper Boundary of class 11-20 is_____

A. 20.5

B. 19.5

C. 20

D. 30

Answer:

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125. Mid value of class means_____

A. Class mark

B. Frequency

C. Average

D. Limit

Answer:

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126. Lower limit of 5-10 is_____

A. 10

B. 5

C. 10

D. 20

Answer:

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127. Mid value of class 60-100 is_____

A. 120

B. 100

C. 30

D. 80

Answer:

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128. The shape of ogive curve is_

A. S

B.

C.]

D. P

Answer:

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129. Histogram consists of .....

A. Squares

B. Rectangles

C. Circles

D. None

Answer:

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130. The observation which occurs most frequently in a data is called.....

A. Median

B. Mean

C. Range

D. Mode

Answer:

Watch Video Solution

131. Mid values are used to calculate .....

A. Mean

B. Median

C. Range

D. None

Answer:

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132. In a data AM of 7 'items is 32 and for this data an item 48'is added then the result of AM=_____

A. 70

B. 40

C. 34

D. 43

Answer:

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133. Which of the following is not a measure of central tendency ?

A. AM

B. Median

C. Mode

D. Range

Answer:

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