MATHS

BOOKS - RD SHARMA MATHS (HINGLISH)

TABULAR REPRESENTATION OF STATISTICAL DATA

Others

1. The class marks of a distribution are : 47,52,57,62,67,72,77,82,87,92,97,102, determine the class size ,the class limits and the true class limits.

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2. In a certain population, 10% of the people are rich, 5% are famous, and 3% are rich and famous. Then find the probability that a person picked at random from the population is either famous or rich but not both.

3. The class marks of a distribution are 26,31,36,41,46,51,56,61,66,71. Find the true class limits.

4. Find the unknown entries (a,b,c,d,e,f,g) from the following frequency distribution of heights of 50 students in a class: Class intervals (heights in cm)   Frequency   Cumulative Frequency

1250-155 155-160 160-165 165-170 170-175 175-180   12 b 10 d e 2   a

25 c 43 48 f Total   g

5. For a frequency distribution standard deviation is computed by applying the formula\

$$\sigma = \sqrt{\dfrac{\sum fd^2}{\sum f} - \left(\dfrac{\sum fd}{\sum f}\right)^2}^{\,2}$$

(b) $\sigma = \sqrt{\left(\dfrac{\sum fd^2}{\sum f}\right) - \dfrac{\sum fd^2}{\sum f}}$

(c) $\sigma = \sqrt{\dfrac{\sum fd^2}{\sum f} - \dfrac{\sum fd}{\sum f}}$ (d) $\sqrt{\left(\dfrac{\sum fd}{\sum f}\right)^2 - \dfrac{\sum fd^2}{\sum f}}$

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6. Given below are the ages of 25 students of class IX in a school. Prepare a discrete frequency distribution. 15, 16, 16, 14, 17, 17, 16, 15, 15, 16, 16, 17, 15, 16, 16, 14, 16, 15, 14, 15, 16, 16, 15, 14, 15

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7. Form a discrete frequency distribution from the following scores: 15,18,16,20,25,24,25,20,16,15,18,18,16,   24,15,20,28,30,27,16,24,25,20,18,28,27, 25,24,24,18,18,25,20,16,15,20,27,28,29,16

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8. The water tax bills (in rupees) of 30 hours in a locality are given below. Construct a grouped frequency distribution with class size of 10.

30,32,45,54,74,78,108,112,66,76,88,40,14,20,15,35,44,66,75,84,

95,96,102,110,88,74,112,14,34,44

9. Form a grouped frequency distribution from the following data by inclusive method taking 4 as the magnitude of class intervals.

31,23,19,29,22,20,16,10,13,34   38,33,28,21,15,18,36,24,18,15

12,30,27,23,20,17,14,32,26,25 18,29,24,19,16,11,22,15,17,10

inclusive class intervals. - Lower and upper both limits are included for data

Class Frequency $9 - 125(10, 10, 10, 11, 12)$

$13 - 16$ 6(13 14 1515 15 16) 17 - 20 9 (17 17 18 18 18 19 19 20 20) 21 - 24 6 (21 22 22 23 24 24) 25 - 28 5 (25 25 26 27 28) 29 - 32 5 (29 29 30 31 32) 33 - 36 3 (33 34 36) 37 - 40 1 (38) Total 40

10. The maximum temperatures (in degrees celcius) and relative humidity (in percent) for Delhi for the month of August 1998, as reported by Meteorological department, are given below Construct a frequency table for each. Maximum temperatures (in degree celcius) 32.5 30.6, 33.8 31.0, 28.6, 33.9, 33.3, 32.4, 30.4, 32.6, 34.7, 34.9, 31.9, 35.2, 35.3, 35.5, 36.4, 36.9, 37.0, 34.4, 32.5, 31.4, 34.4, 35.6, 37.3, 37.5, 36.0, 37.0, 36.3, 36.9, 36.7. Relative humidity (in percent) 90, 97, 92, 95, 93, 95, 93, 85, 83, 85, 83, 77, 83, 77, 74, 60, 71, 65, 74, 80, 87, 82, 81, 76, 61, 63, 58, 58, 56, 57, 54.

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11. The marks obtained by 40 students of class IX in an examination are given below: 18, 8, 12, 6, 8, 16, 12, 5, 23, 2, 16, 23, 2, 10, 20, 12, 9, 7, 6, 5, 3, 5, 13, 21, 13, 15, 20, 24, 1, 7, 21, 16, 13, 18, 23, 7, 3, 18, 17, 16 Present the data in the form of a frequency distribution using the same class size, one such class being 15-20 (where 20 is not included)

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12. The weights in grams of 50 oranges picked at random from a consignment are as follows: 131, 113, 82, 75, 204, 81, 84, 118, 104, 110, 80, 107, 111, 141, 136, 123, 90, 78, 90, 115, 110, 98, 106, 99, 107, 84, 76, 186, 82, 100, 109, 128, 115, 107, 115, 119, 93, 187, 139, 129, 130, 68, 195, 123, 125, 111, 92, 86, 70, 126

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13. For the following data of daily wages (in rupees0 received by 30 labourers in a certain factory, construct a grouped frequency distribution table by dividing the range into class intervals of equal width, each corresponding to 2 rupees, in such a way that the mid-value of the first class interval corresponds to 12 rupees.

14,16,16,14,22,13,15,24,12,23,14,20,17,21,22,18,18,19,20,17,16,15,11,12,21,20,17,18,19,23

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14. The class marks of a distribution are 26,31,36,41,46,51,56,61,66,71. Find the true class limits.

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15. What do you understand by the word "statistics" in singular form   (ii) plural form?

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16. Describe some fundamental characteristic of statistics.

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17. What are (i) primary data? (ii) secondary data? Which of the two -- the primary or the secondary data -- is more reliable and why?

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18. Why do we group data?

19. Explain the meaning of the following terms: variate (ii) class-integral (iii) class-size class-mark (v) frequency class limites (vii) true class limits

20. The ages of ten students of a group are given below: The ages have been recorded in years and months: 8-6,9-0,8-4,9-3,7-8,8-11,8-7,9-2,7-10,8-8 What is the lowest age? What is the highest age? Determine

21. The monthly pocket money of six friends is given below: Rs. 45, Rs. 30, Rs. 40, Rs. 50, Rs. 25, Rs. 45 What is the heights pocket money? What is the lowest pocket money? What is the range? Arrange the amounts of pocket money in ascending order.

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22. The final marks in mathematics of 30 students are as follows: 53,61,48,60,78,68,55,100,67,90   75,88,77,37,84,58,60,48,62,56 44,58,52,64,98,59,70,39,50,60 Arrange these marks in the ascending order 30 to 39 one group, 40 to 49 second group, etc. What is the highest score? What is the lowest score? (iv) What is the range? If 40 is the pass mark how many have failed? How many have scored 75 or more? Which observations between 50 and 60 have not actually appeared? How many have scored less than 50?

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23. The weights of new born babies (in kg) in a hospital on a particular day are as follows: 2.3,2.2,2.1,2.7,2.6,3.0,2.5,2.9,2.8,3.1,2.5,2.8,2.7,2.9,2.4 Rearrange the weights in descending order. Determine the highest weight. Determine the lowest weight. Determine the range How many babies were born on that day? How many babies weigh below 2.5 kg? How many babies weight more than 2.8 kg? How many babies weigh 2.8 kg?

24. The number of runs scored by a cricket player in 25 innings are as follows:

26,35,94,48,82,105,53,0,39,42,71,0,64,15,34,67,0,42,124,84,54,48,139,64,47

Rearrange these runs in ascending order. Determine the player, is highest score. How many times did the player not score a run? How many centuries did he score? How many times did he score more than 50 runes?

25. The class size of a distribution is 25 and the first class-interval is 200-224. There are seven class-intervals. Write the class-intervals. Write the class-marks of each interval.

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26. Write the class size and class limits in each of the following: 104,114,124,134,144,154 and 164 47,52,57,62,67,72,77,82,87,92,97, and 102 12.5,17.5,22.5,27.5,32.5.,37.5,42.5,475

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27. Following data gives the number of children in 40 families: 1,2,6,5,1,5,1,3,2,6,2,3,4,2,0,0,4,4,3,2 2,0,0,1,2,2,4,3,2,1,0,5,1,2,4,3,4,1,6,2 Represent it in the form of a frequency distribution.

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28. The marks scored by 40 students of class IX in mathematics are given below:

81,55,68,79,85,43,29,68,54,73,47,35,72,64,95,44,50,77,64,35,79,52,45,54,70,83,62,64

Prepare a frequency distribution with class size of 10 marks.

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29. The heights (in cm) of 30 students of class VIII are given below:

155,158,154,158,160,148,149,150,153,159,161,148,157,

153,157,162,159,151,154,156,152,156,160,152,147,155,163,155, 157,153 Prepare a frequency distribution table with 160-164 as one of the class intervals.

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30. The monthly wages of 30 workers in a factory are given below:

83.0,835,890,810,835,836,869,845,898,890,820,860,832

,833,855,845,804,808,812,840,885,835,836,878,840,868,890,806,840,890

Represent the data in the form of a frequency distribution with class size 10.

31. The daily maximum temperatures (in degree Celsius) recorded in a certain city during the month of November are as follows:

25.8,24.5,25.6,20.7,218,20.5,20.6,20.9,22.3,22.7,23.1,22.8,22.9,21.7,21.3,20.5,

20.9,23.1,22.4,21.5,22.7,22.8,22.0,23.9,24.7,22.8,23.8,24.6,23.9,21.1   Represent them as a frequency distribution table with class size $1^0 C$

32. Construct a frequency table with equal class intervals from the following data on the monthly wages (in rupees) of 28 labourers working in a factory, taking one of the class intervals as 210-230 (230 not included):

220,268,258,242,210,268,272,242,311,290,300,320,319,304,302,318,306,292,254,278

33. the daily minimum temperatures in degrees Celsius recorded in a certain Arctic region are as follows:

$-12.5, \ -10.8, \ -18.6, \ -8.4, \ -10.8, \ -4.2, \ -4.8, \ -6.7, \ -13.2,$ $-11.8, \ -2.3, 1.2, 2.6, 0, \ -2.4, 0, 3.2, 2.7, 3.4, 0, \ -2.4, \ -2.4, 0,$ $3.2, 2.7, 3.4, 0, \ -2.4, \ -5.8, \ -8.9, \ -14, 6, \ -12.3, \ -11.5, \ -7.8, \ -$

Represent them as frequency distribution table taking $-19.9 \ \to \ -15$ as the first class interval.

34. The blood groups of 30 students of Class VIII are recorded as follows:

A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O, A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O. Represent this data in the form of a frequency distribution table. Which is the mo

35. Three coins were tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows: 0 1 2 2 1 2 3 1 3 0 1 3 1 1 2 2 0 1 2 1 3 0 0 1 1 2 3 2 2 0 Prepare a frequency distribution table for the data given above.

36. Thirty children were asked about the number of hours they watched TV programmes in the previous week. The results were found as follows: 1 6 2 3 5 12 5 8 4 8 10 3 4 12 2 8 15 1 17 6 3 2 8 5 9 6 8 7 14 12 (i) Make a grouped frequency distribution t

37. The distances (in Km) covered by 24 cars in 2 hours are given below: 125,140,128,108,96,149,136,112,84,123,130,120,103,89,65,103,145,97,102,87,67,78,98,126 Represent them as a cumulative frequency table using 60 as the lower limit of the first group and all the classes having the class size of 15.

38. The marks obtained by 35 students in an examination are given below:

370,290,318,175,170,410,378,405,380,375,315,305,325,275,241,288,261,355,402,380

39. The following table gives the marks scored by 378 students in an entrance examination: Marks, 0-10, 10-20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90, 90-100 No. of students, 3, 12, 36, 76, 97, 85, 39, 12, 12, 6 From this table form (i) less than series, and (ii) more than series.

40. A cumulative frequency distribution is given below. Convert this into a frequency distribution table. Marks Below 45 Below 60 Below 75 Below 90 Below 105 Below 120 No. of Students 0 8 23 48 85 116

41. Find the unknown entries a,b,c,d,e and f in the following distribution of heights of students in a class

Height (in cm)	Frequency	Cumulative frequency
150-155	12	a
155-160	b	25
160-165	10	c
165-170	d	43
170-175	e	48
175-180	2	f
Total	50	

42. Explain the difference between a frequency distribution and a cumulative frequency distribution.

43. The marks scored by 55 students in a test are given below: Marks 0-5 5-10 10-15 15-20 20-25 25-30 30-35 No. of Students 2 6 13 17 11 4 2 Construct a cumulative frequency distribution.

44. The water bills (in rupees) of 32 houses in a certain street for the period 1.1.98 to 31.3.98 are given below:

56,43,32,38,56,24,68,85,52,47,35,58,63,74,27,84,69,35,44,75,55,30,54,65,45,67,95,72

Tabulate the data and present the data as a cumulative frequency table using 70-79 as one of the class intervals.

45. The number of books in different shelves of a library are as follows:

30,32,28,24,20,25,38,37,40,45,16,20   19,24,27,30,32,34,35,42,27,28,19,34

38,39,42,29,24,27,22,29,31,19,27,25   28,23,24,32,34,18,27,25,37,31,24,23

43,32,28,31,24,23,26,36,32,29,28,21   Prepare   a   cumulative   frequency distribution table using 45-49 as the last class-interval.

46. Given below are the cumulative frequencies showing the weights of 685 students of a school. Prepare a frequency distribution table. Weight (in kg), No. of students Below 25 Below 30 Below 35 Below 40 Below 45 Below 50 Below 55 Below 60 Below 65 Below 70, 0 24 78 183 294 408 543 621 674 685

47. The following cumulative frequency distribution table shows the daily electricity consumption (in kW) of 40 factories in an industrial state: Consumption (in kW) No. of Factories Below 240 Below 270 Below 300 Below 330 Below 360 Below 390 Below 420 1 4 8 24 33 38 40 Represent this as a frequency distribution table Prepare a cumulative frequency table.

48. Given below is a cumulative frequency distribution table showing the ages of people living in a locality: Age in years No. of persons Above 108 Above 96 Above 84 Above 72 Above 60 Above 48 Above 36 Above 24 Above 12 Above 0 0 1 3 5 20 158 427 809 1026 1024 Prepare a frequency distribution table

49. Tally marks are used to find class intervals (b) range frequency (d) upper limits

50. The difference between the highest and lowest values of the observations is called frequency (b) mean (c) range (d) class-intervals

51. The difference between the upper and the lower class limits is called

mid-points   (b) class size frequency   (d) mean

52. In the class intervals 10-20, 20-30, 20 is taken in the interval 10-

20   (b) the interval 20-30 both intervals 10-20, 20-30

(d) none of the intervals

53. In a frequency distribution, the mid-value of a class is 15 and the class

intervals is 4. The lower limit of the class is 10   (b) 12   (c) 13

(d) 14

54. The mid-value of a class interval is 42. If the class size is 10, then the upper and lower limits of the class are: 47 and 37   (b) 37 and 47 37.5 and 47.5   (d) 47.5 and 37.5

55. The number of times a particular item occurs in a given data is called its variation   (b) frequency cumulative frequency   (d) class-size

56. The width of each of nine classes in a frequency distribution is 2.5 and the lower class boundary of the lowest class 10.6. Then the upper class boundary of the highest class is 35.6   (b) 33.1   (c) 30.6   (d) 28.1

57. Let l be the lower class limit of a class-interval in a frequency distribution and m be the mid-point of the class. Then, the upper class limit of the class is $m + \dfrac{l + m}{2}$ (b) $l + \dfrac{m + 1}{2}$ (c) $2m - l$ (d) $(m - 2l)$

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58. Let following marks were obtained by the students in a test: 81,72,90,90,86,85,92,70,71,83,89,95,85,79,62 The range of the marks is 9 (b) 17 (c) 27 (d) 33

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59. Tally are usually marked in a bunch of 3 (b) 4 (c) 5 (d) 6

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