MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

PRESENTATION OF DATA IN TABULAR FORM

Solved Examples

1. The following data gives the number of children in 20 frequency table.

4, 5, 2, 4, 2, 2, 1, 2, 2, 1, 5, 3, 2, 1, 1, 4, 3, 2, 1, 1

Make an array of the above data and construct a frequency table.

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2. The following data gives the marks and out of 50 obtained by 30 students of a class in a test.

30,27,17,37,46,12,40,6,23,2,19,5,33,25,39,21,19,12,17,19,17,41,8,10,12,1,9,13,21,48

Arrange them in ascending order and present it as a grouped data (i) in exclusive form, (ii) in inclusive form.

3. The marks obtained by 40 students of class IX in an examination are given below:

23,5,12,16,8,6,12,8,18,2,16,10,2,23,7,9,12,20,0,3,5,16,18,3,17,7,23,18,13,10,21,7,1,24,20,15,13,

Present the data in the form of a frequency distribution using the same class size, starting with class 0-5 (where 5 is not included.)

4. The water-tax bills in (in rupee) of 30 houses in a locality are given below:

144,184,130,195,132,134,196,114,212,174,188,210,202,145,175,154,174,178,166,146,135,11

Construct a frequency distribution table with class size 10.

5. 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 Form the grouped frequency table by dividing the variable range into intervals of equal width, each corresponding to 20gms in such a way that the mid-value of the first class corresponds to 70 gms.

6. The marks obtained by 35 students in an examination are given below: 370,290,31,8175,170,410,378,405,380,375,315,305,325,275,241,288,261,355,402,380 From a cumulative frequency table with class intervals of length 50.

Example

1. The relative humidity (in %) of a certain city for a month of 30 days was as follws:

89.2	92.3	97.1	93.5	92.7	95.1	97.2	93.3	95.2	97.3
92.1	89	97.3	96.1	95.7	92.1	84.9	98.3	96.2	90.2
95.1	94.2	96.3	92.9	95.3	86.5	90.3	98.1	98.6	99.2

(i) Construct a grouped frequency distribution table with classes 84-86, 86-88 etc,

(ii) Which season do you think this data is about?

(iii) What is the range of this data.

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Exercise 16

1. Define statistics as a subject

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2. Describe some fundamental characteristic of statistics.

3. Statistical Data : Primary Data and Secondary Data.

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

$A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O, A, AB, O, A, A, O, AB, A$

What is the frequency of blood group AB?

A. 3

B. 4

C. 2

D. 5

Answer: A

5. Three coins were tossed 30 times simultaneously. Each time number of heads occurring was note 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.

6. 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.

7. Thirty children were asked about the number of hours they watched TV programmers 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,

(i) Make a grouped frequency distribution table for this data, taking class width 5 and one of the class intervals as 5-10

8. The marks obtained by 40 students of a class in an examination are given below:

3,20, 13, 1,21, 13, 3, 23, 16, 13, 18, 12, 5, 12, 5, 24, 9, 2, 7, 18, 20, 3, 10, 12, 7, 18, 2, 5, 7, 10, 16, 8, 16, 17, 8, 23, 24, 6, 23, 15.

Present the data in the form of a frequency distribution using equal class size, one such class being 10-15(15 not included).

9. Construct a frequency table for the following ages (in years) of 30 students using equal class intervals, one of them being 9-12, where 12 is not included.

18, 12, 7, 6, 11, 15, 21, 9, 8, 13, 15, 17, 22, 19, 14, 21, 23, 8, 12, 17, 15, 6, 18, 23, 22, 16, 9, 21, 11, 16.

10. 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, talking one of the class intervals as 210-230 (230 not included): 220,268,258,242,210,268,272,242,311,290,300,320, 319,304,302,318,306,292,254,278,210,240,280,316,306, 215,256,236

11. The weights(in grams) of 40 oranges picked at random from a basket are as follows:

40,50,60,55,30,90,75,85,70,85,75,80,100,110,70,55,30,35,45,70,80,85,95,70,75,40,10

Construct a frequency table as well as cummulative frequency table.

12. 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.

13. The marks obtained by 17 students in a mathematics test (out of 100) are given below:

90,79,76,82,65,96,100,91,82,100,49,46,64,48,72,66,68.

Find he range of the above data.

A. 51

B. 52

C. 54

D. 53

Answer: C

14. (i)Find the class mark of the class 90-120.

(ii)In a frequency distribution, the mid-value of the class is 10 and width of the class is 6. Find the lowe limit of the class.

(iii)The width of each of the five continuous classes in a frequency distribution is 5 and lowe class limit of the lowest class is 10. What is the upper class limit of the highest class?

(iv) The class marks of a frequency distribution are 15,20,25...... Find the class corresponding to the class mark 20.

(v)In the class intervals 10-20, 20-30, find the class in which 20 is included.

Exercise 19

1. Explain the meaining of each of the following terms:

(i)Variate (ii)Class interval (iii)Class size

(iv)Class mark (v)Class limit (vi)True class limits

(vii)Frequency of a class (viii)Cumulative frequency of a class

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Exercise 29

1. Following are the ages (in years) of 360 patients, getting medical treatement in a hospital.

Age (in years)	10–20	20–30	30–40	40–50	50–60	60–70
Number of patients	90	50	60	80	50	30

Construct the cummulative frequency table for the above data.

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Exercise 30

1. Present the following frequency table for the above data.

Marks (below)	10	20	30	40	50	60
Number of students	5	12	32	40	45	48

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Exercise 31

1. Given below is a cummulative frequency table:

Marks	Number of students
Below 10	17
Below 20	22
Below 30	29
Below 40	37
Below 50	50
Below 60	60

Extract a frequency table from the above.

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1. Make a frequency table from the following

Marks obtained	Number of students
More than 60	0
More than 50	16
More than 40	40
More than 30	75
More than 20	87
More than 10	92
More than 0	100

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Exercise 35

1. Find the values of a,b,c,d,e,f,g from the following frequency distribution

of the heights of 50 students in a class.

Height (in cm)	Frequency	Cumulative frequency
160–165	15	a
165–170	b	35
170–175	12	c
175–180	d	50
180–185	e	55
185–190	5	f
	8	

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Multiple Choice Questions Mcq

1. The range of the data

12,25,15,18,17,20,22,0,16,11,8,19,10,30,20,38, is

A. 10

B. 15

C. 18

D. 38

Answer: D

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2. The class mark of the class $100 - 120$ is

    A. 100

    B. 110

    C. 115

    D. 120

Answer: B

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3. In the class interval $10 - 20, 20 - 30,$ the number is 20 is included in :-

    A. $20 - 30$

B. $10 - 20$

C. In each of $10 - 20$ and $20 - 30$

D. In none of $10 - 20$ and $20 - 30$

Answer: A

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4. The class marks of a frequency distribution are given as follows 15, 20, 25, ... The class corresponding to the class mark 20 is

A. $12.5 - 17.5$

B. $16.5 - 21.5$

C. $18.5 - 21.5$

D. $19.5 - 20.5$

Answer: C

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5. In a frequency distribution, the mid values of a class is 10 and width of the class is 6. The lower limit of the class is

   A. 6.5

   B. 7.5

   C. 8.5

   D. 12

Answer: B

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6. The mid value of a class interval is 32 and the class size is 10 then find lower and upper limits.

   A. $27 - 37$

   B. $37.5 - 47.5$

C. $36.5 - 47.5$

D. $36.5 - 46.5$

Answer: A

7. If m is the mid-point and u is the upper limit of a class in a continuous frequency distribution, then lower class limit of the class is

A. $2m - u$

B. $2m + u$

C. $m - u$

D. $m + u$

Answer: A

8. The width of each of five continuous classes in a frequency distribution is 5 and the lower class limit of the lowest class is 10. The upper class limit of the highest class is

A. 45

B. 25

C. 35

D. 40

Answer: C

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9. Let L be the lower class boundary of a class in a frequency distribution and m be the midpoint of the class. Which one of the following is the upper class boundary of the class.

A. $m + \dfrac{(m + L)}{2}$

B. $L + \dfrac{(m + L)}{2}$

C. $2m - L$

D. $m - 2L$

Answer: C