EXERCISE 14.1 - Question No. 1

Give five examples of data that you can collect from your day-to-day life.

EXERCISE 14.1 - Question No. 2

Classify the data in Q.1 above as primary or secondary data.

EXERCISE 14.2 - Question No. 1

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 most common, and which is

the rarest, blood group among these students?

EXERCISE 14.2 - Question No. 2

The distance (in km) of 40 engineers from their residence to their

place of work were found as follows:

5310202511137123119101217181132171627978351215183121429

Construct a grouped frequency dist

EXERCISE 14.2 - Question No. 3

The relative humidity (in %) of a certain city for a month of 30 days was as follows: 98.1 98.6 99.2 90.3 86.5 95.3 92.9 96.3 94.2 95.1 89.2 92.3 97.1 93.5 92.7 95.1 97.2 93.3 95.2 97.3 96.2 92.1 84.9 90.2 95.7 98.3 97.3 96.1 92.1 89 (i) Construct a grouped frequency distribution table with classes 84 - 86, 86 - 88, etc. (ii) Which month or season do you think this data is about? (iii) What is the range of this data?

EXERCISE 14.2 - Question No. 4

The heights of 50 students, measured to the nearest centimetres, have been found to be as follows: 161 150 154 165 168 161 154 162 150 151 162 164 171 165 158 154 156 172 160 170 153 159 161 170 162 165 166 168 165 164 154 152 153 156 158 162 160 161 173 166 161 159 162 167 168 159 158 153 154 159 (i) Represent the data given above by a grouped frequency distribution table, taking the class intervals as 160 - 165, 165 - 170, etc. (ii) What can you conclude about their heights from the table?

EXERCISE 14.2 - Question No. 5

A study was conducted to find out the concentration of sulphur dioxide in the air in parts per million (ppm) of a certain city. The data

obtained for 30 days is as follows: 0.03 0.08 0.08 0.09 0.04 0.17 0.16 0.05 0.02 0.06 0.18 0.20 0.11 0.08 0.12 0.13 0.22 0.07 0.08 0.01 0.10 0.06 0.09 0.18 0.11 0.07 0.05 0.07 0.01 0.04 (i) Make a grouped frequency distribution table for this data with class intervals as 0.00 - 0.04, 0.04 - 0.08, and so on. (ii) For how many days, was the concentration of sulphur dioxide more than 0.11 parts per million?

EXERCISE 14.2 - Question No. 6

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.

EXERCISE 14.2 - Question No. 7

The value of π upto 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510 (i) Make a frequency distribution of the digits from 0 to 9 after the decimal point. (ii) What are the most and the least frequently occuring digits?

EXERCISE 14.2 - Question No. 8

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 table for this data, taking class width 5 and one of the class intervals as 5 - 10. (ii) How many children watched television for 15 or more hours a week?

EXERCISE 14.2 - Question No. 9

A company manufactures car batteries of a particular type. The lives (in years) of 40 such batteries were recorded as follows: 2.6 3.0 3.7 3.2 2.2 4.1 3.5 4.5 3.5 2.3 3.2 3.4 3.8 3.2 4.6 3.7 2.5 4.4 3.4 3.3 2.9 3.0 4.3 2.8 3.5 3.2 3.9 3.2 3.2 3.1 3.7 3.4 4.6 3.8 3.2 2.6 3.5 4.2 2.9 3.6

Construct a grouped frequency distribution table for this data, using class intervals of size 0.5 starting from the interval 2 - 2.5.

EXERCISE 14.3 - Question No. 1

A survey conducted by an organisation for the cause of illness and death among the women between the ages 15 - 44 (in years) worldwide, found the following figures (in %):

EXERCISE 14.3 - Question No. 2

The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian society is given below.

EXERCISE 14.3 - Question No. 3

Given below are the seats won by different political parties in the polling outcome of a state assembly elections: (i) Draw a bar graph to represent the polling resul

EXERCISE 14.3 - Question No. 4

The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table: (i) Draw a histogram to represent the given data. (ii) Is there any other suitable graphical representation for the same data? (iii) Is it correct to conclude that the maximum number of leaves are 153 mm long? Why?

EXERCISE 14.3 - Question No. 5

The following table gives the life times of 400 neon lamps: (i) Represent the given information with the help of histogram. (ii) How many lamps have a life time of more than 700 hours?

EXERCISE 14.3 - Question No. 6

The following table gives the distribution of students of two sections according to the marks obtained by them. Represent the marks of the students of botht the sections on the same graph by two frequency

polygon. From the two polygons compare the performance of the two sections.

EXERCISE 14.3 - Question No. 7

The runs scored by two teams A and B on the first 60 balls in a cricket match are given below: `N u m b e r\ o f\ b a l l sT e a m\ AT e a m\ B1-6 2 5 7-12 1 6 13-18 8 2 19-24 9 10 25-30 4 5 31-36 5 6 37-42 6 3 43-48 10 4 49-54 6 8 55-60 2 10

EXERCISE 14.3 - Question No. 8

A random survey of the number of children of various age groups playing in a park was found as following Draw a histogram to represent

EXERCISE 14.3 - Question No. 9

100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows: (i) Draw a histogram (ii) write the class interval in which maximum number of surnames lie .

EXERCISE 14.4 - Question No. 1

The following number of goals were scored by a team in a series of 10 matches: 2, 3, 4, 5, 0, 1, 3, 3, 4, 3 Find the mean, median and mode of these scores

EXERCISE 14.4 - Question No. 2

In a mathematics test given to 15 students, the following marks (out of 100) are recorded: 41, 39, 48, 52, 46, 62, 54, 40, 96, 52, 98, 40, 42, 52, 60 Find the mean, median and mode of this data

EXERCISE 14.4 - Question No. 3

The following observations have been arranged in ascending order. If the median of the data is 63, find the value of x. 29, 32, 48, 50, x, x + 2, 72, 78, 84, 95

EXERCISE 14.4 - Question No. 4

Find the mode of 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, 18.

EXERCISE 14.4 - Question No. 5

Find the mean salary of 60 workers of a factory from the following table

EXERCISE 14.4 - Question No. 6

Give one example of a situation in which (i) the mean is an appropriate measure of central tendency. (ii) the mean is not an appropriate measure of central tendency but the median is an appropriate measure of central tendency.

SOLVED EXAMPLES - Question No. 1

Consider the marks obtained by 10 students in a mathematics test as given below: 55 36 95 73 60 42 25 78 75 62 The data in this form is called raw data. By looking at it in this form, can you find the highest and the lowest marks?

SOLVED EXAMPLES - Question No. 2

Consider the marks obtained (out of 100 marks) by 30 students of Class IX of a school: 10 20 36 92 95 40 50 56 60 70 92 88 80 70 72 70 36 40 36 40 92 40 50 50 56 60 70 60 60 88 Recall that the number of students who have obtained a certain number of marks is called the frequency of those marks. For instance, 4 students got 70 marks. So

the frequency of 70 marks is 4. To make the data more easily understandable, tabulate the data.

SOLVED EXAMPLES - Question No. 3

100 plants each were planted in 100 schools during Van Mahotsava. After one month, the number of plants that survived were recorded as:

95 67 28 32 65 65 69 33 98 96 76 42 32 38 42 40 40 69 95 92 75 83 76 83 85 62 37 65 63 42 89 65 73 81 49 52 64 76 83 92 93 68 52 79 81 83 59 82 75 82 86 90 44 62 31 36 38 42 39 83 87 56 58 23 35 76 83 85 30 68 69 83 86 43 45 39 83 75 66 83 92 75 89 66 91 27 88 89 93 42 53 69 90 55 66 49 52 83 34 36 Tabulate the given data in suitable groups using tally marks.

SOLVED EXAMPLES - Question No. 4

Let us now consider the following frequency distribution table which gives the weights of 38 students of a class:

SOLVED EXAMPLES - Question No. 5

In a particular section of Class IX, 40 students were asked about the months of their birth and the following graph was prepared for the data so obtained: Observe the bar graph given above and answer the following questions: (i) How many students were born in the month of

November? (ii) In which month were the maximum number of students born?

SOLVED EXAMPLES - Question No. 6

A family with a monthly income of Rs 20,000 had planned the following expenditures per month under various heads

SOLVED EXAMPLES - Question No. 7

A teacher wanted to analyse the performance of two sections of students in a mathematics test of 100 marks. Looking at their

performances, she found that a few students got under 20 marks and a few got 70 marks or above. So she decided to group t

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SOLVED EXAMPLES - Question No. 8

Consider the marks, out of 100, obtained by 51 students of a class in a test, given in Table 14.9.

$Marks Number\ of\ Students 0-10 5 10-20 10 20-30 20 30-40 30 40-60$
$-80 28 0-90 39 0-100 9 Total 51$

Draw a freque

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SOLVED EXAMPLES - Question No. 9

In a city of weekly observations made in a study on the cost of loving index are given in the following ta draw a frequency polygon (without constructing histogram)

SOLVED EXAMPLES - Question No. 10

5 people were asked about the time in a week they spend in doing social work in their community. They said 10, 7, 13, 20 and 15 hours, respectively. Find the mean (or average) time in a week devoted by them for social work.

SOLVED EXAMPLES - Question No. 11

Find the mean of the marks obtained by 30 students of Class IX of a school, given in Example 2. 10 20 36 92 95 40 50 56 60 70 92 88 80 70 72 70 36 40 36 40 92 40 50 50 56 60 70 60 60 88

SOLVED EXAMPLES - Question No. 13

The points scored by a Kabaddi team in a series of matches are as follows: 17, 2, 7, 27, 15, 5, 14, 8, 10, 24, 48, 10, 8, 7, 18, 28 Find the median of the points scored by the team.

SOLVED EXAMPLES - Question No. 14

Find the mode of the following marks (out of 10) obtained by 20 students: 4, 6, 5, 9, 3, 2, 7, 7, 6, 5, 4, 9, 10, 10, 3, 4, 7, 6, 9, 9

SOLVED EXAMPLES - Question No. 15

Consider a small unit of a factory where there are 5 employees : a supervisor and four labourers. The labourers draw a salary of Rs 5,000 per month each while the supervisor gets Rs 15,000 per month. Calculate the mean, median and mode of the salaries of this unit of the factory.