

Frequency distribution table

Ex. In a survey of 20 families, each family is found to have the following number of children :

1, 2, 2, 3, 2, 3, 3, 4, 1, 1, 4, 4, 2, 2, 3, 1, 5, 1, 1, 2
Make a frequency distribution table.

Sol. Arrange in ascending order.

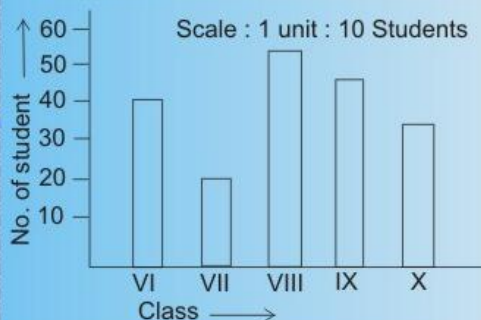
1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 5.

Number of children	Tally Marks	No. of families
1	I	6
2	I	6
3		4
4		3
5	I	1
Total		20

Bar-Chart

Draw the bar graph for the given table.

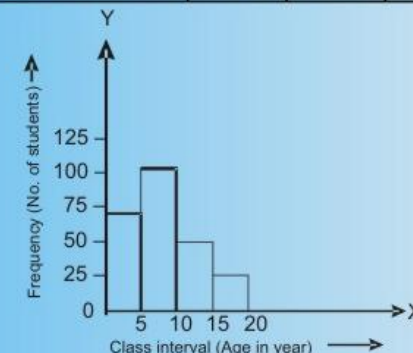
Class	VI	VII	VIII	IX	X
No. of Students	40	20	55	50	35



Histogram

Draw a histogram of the following frequency distribution.

Class (Age in years)	0 - 5	5 - 10	10 - 15	15 - 20
No. of students	72	103	50	25



Group frequency distribution table

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

18, 8, 12, 6, 8, 16, 12, 5, 23, 2, 16, 23, 2, 10, 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, 4.

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).

Sol. The frequency distribution is as given below :

Marks	Tally marks	Frequency
0-5	I	6
5-10		11
10-15		7
15-20		9
20-25		7
Total		40

For class 10-15, 10 is lower limit, 15 is upper limit

$$\text{Class mark} = \frac{UL + LL}{2} = \frac{10 + 15}{2} = 12.5$$

$$\text{Class size} = UL - LL = 15 - 10 = 5$$

Statistics

It is defined as the science of collection, presentation, analysis and interpretation of numerical data.

Chart

Some definitions

Data is defined as information in numerical facts.

Range Is defined as the difference between maximum and minimum value of observation.

Frequency is defined as the number of times an observation occur.

Pie-chart

$$\text{Central angle for a variable} = \frac{\text{Frequency of the variable}}{\text{Total of frequencies}} \times 360^\circ$$

The main source of energy is used by each house in a street is listed below :

Source of Energy	Electricity	Solar	Gas	Oil
No. of houses	20	10	12	6

Represent the above data by a pie chart

Source of energy	Number of houses	Central angle
Electricity	20	$\frac{20}{48} \times 360 = 150$
Solar	10	$\frac{10}{48} \times 360 = 75$
Gas	12	$\frac{12}{48} \times 360 = 90$
Oil	6	$\frac{6}{48} \times 360 = 45$

