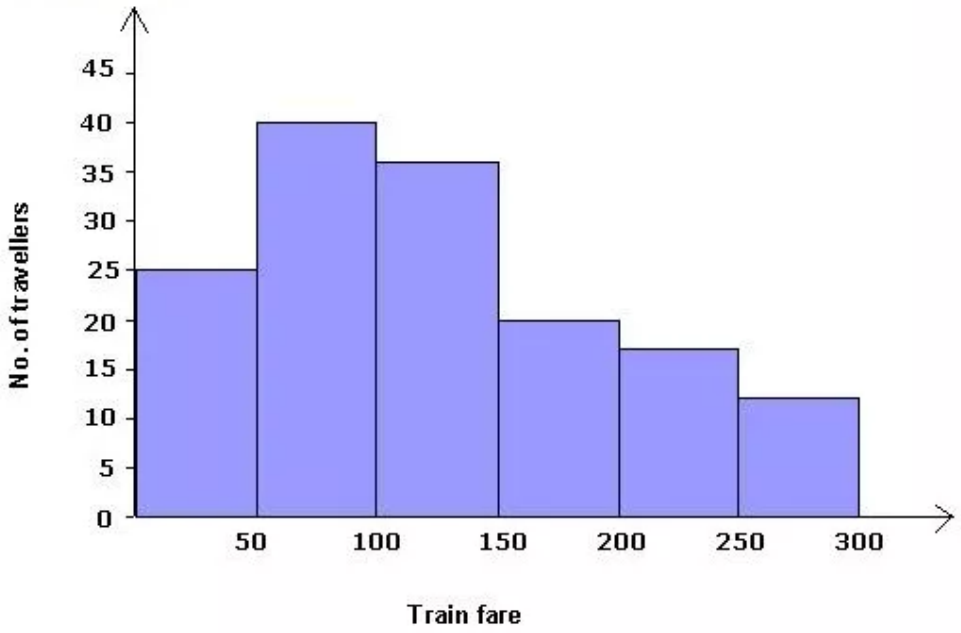
Chapter 23. Graphical Representation of Statistical Data

Ex 23.1

Answer 6.

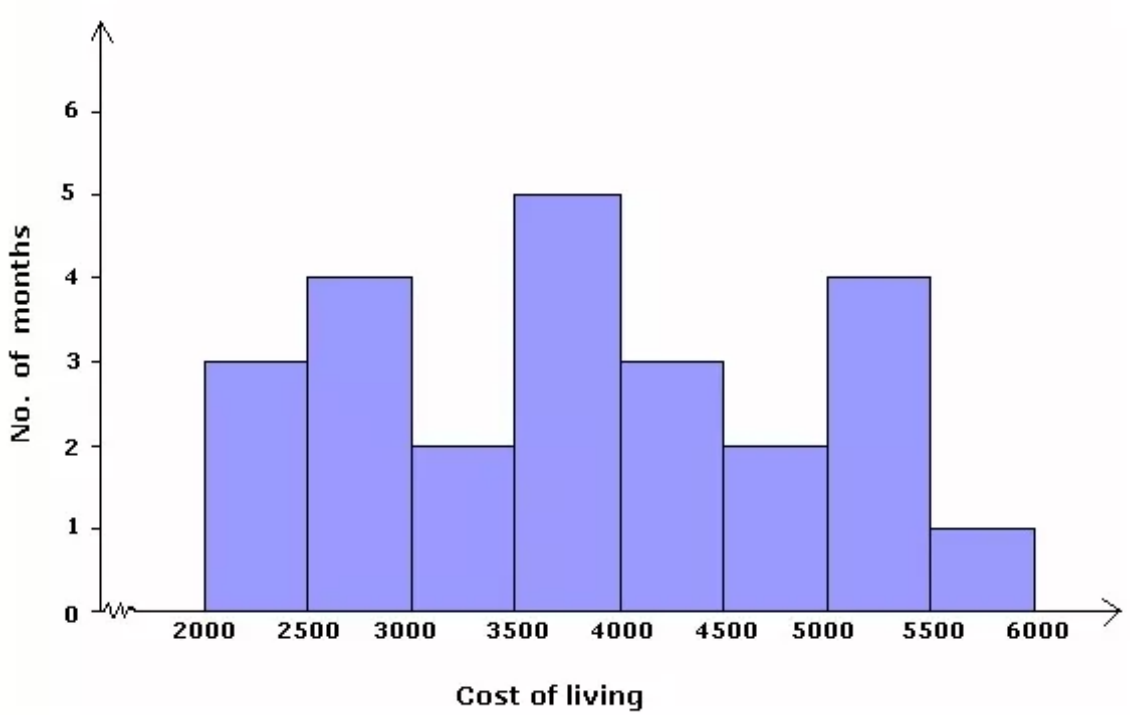
This is an exclusive frequency distribution. We represent the class limits on the x-axis on a suitable scale and the frequencies on the y-axis on a suitable scale. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution.



Answer 7.

We represent the class limits on the x-axis on a suitable scale and the frequencies on the y-axis on a suitable scale. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution.

Here as the class limits do not start from 0, we put a kink between 0 and the lower boundary of the first class.

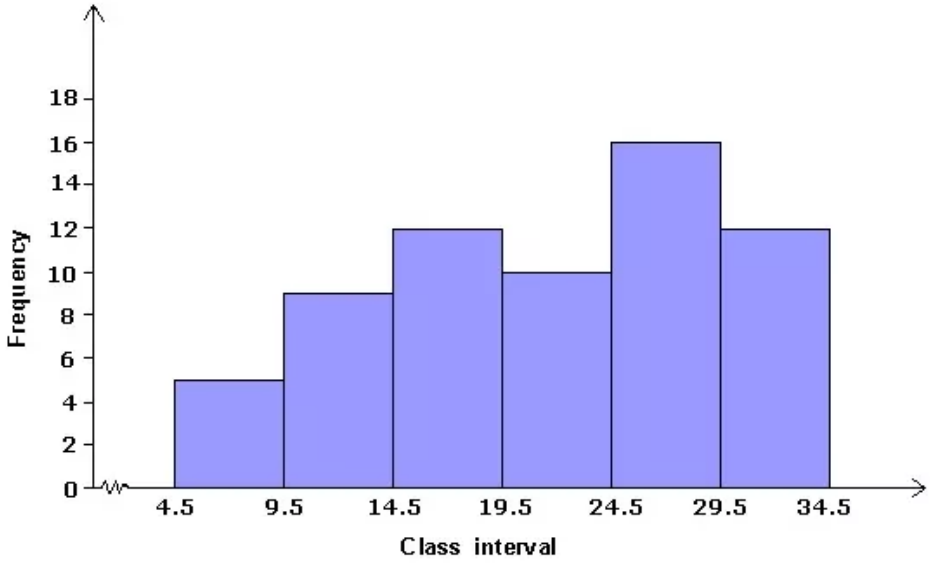


Answer 8.

We see that the class intervals are in an inclusive manner. We first need to convert them into exclusive manner.

Class interval	Frequency
4.5 – 9.5	5
9.5 – 14.5	9
14.5 – 19.5	12
19.5 – 24.5	10
24.5 – 29.5	16
29.5 – 34.5	12

We take the true class limits on the x-axis on a suitable scale and the frequencies on the y-axis on suitable scales. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution. Here as the class limits do not start from 0, we put a kink between 0 and the true lower boundary of the first class.

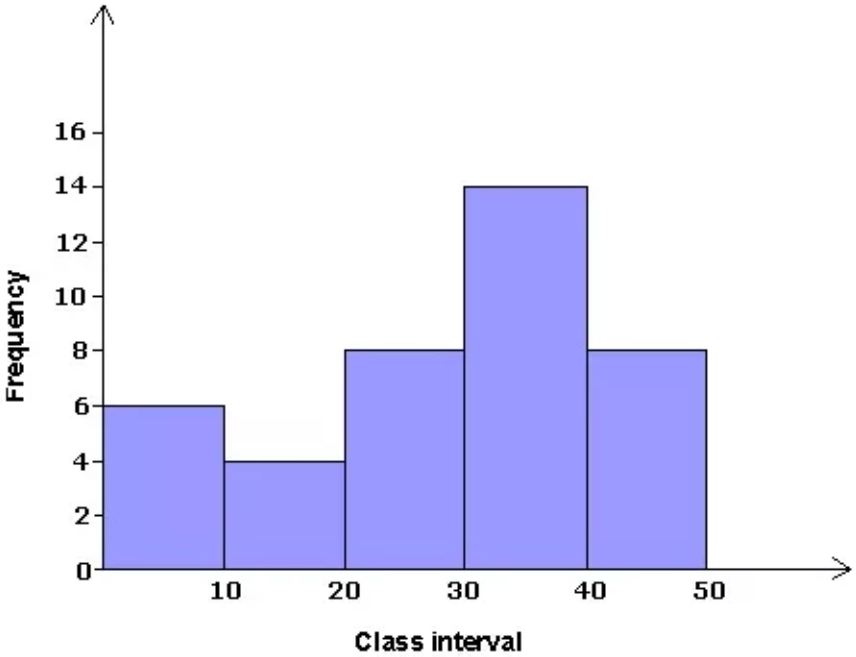


Answer 10.

We first convert the cumulative frequency table to an exclusive frequency distribution table.

Class interval	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	6	4	8	14	8

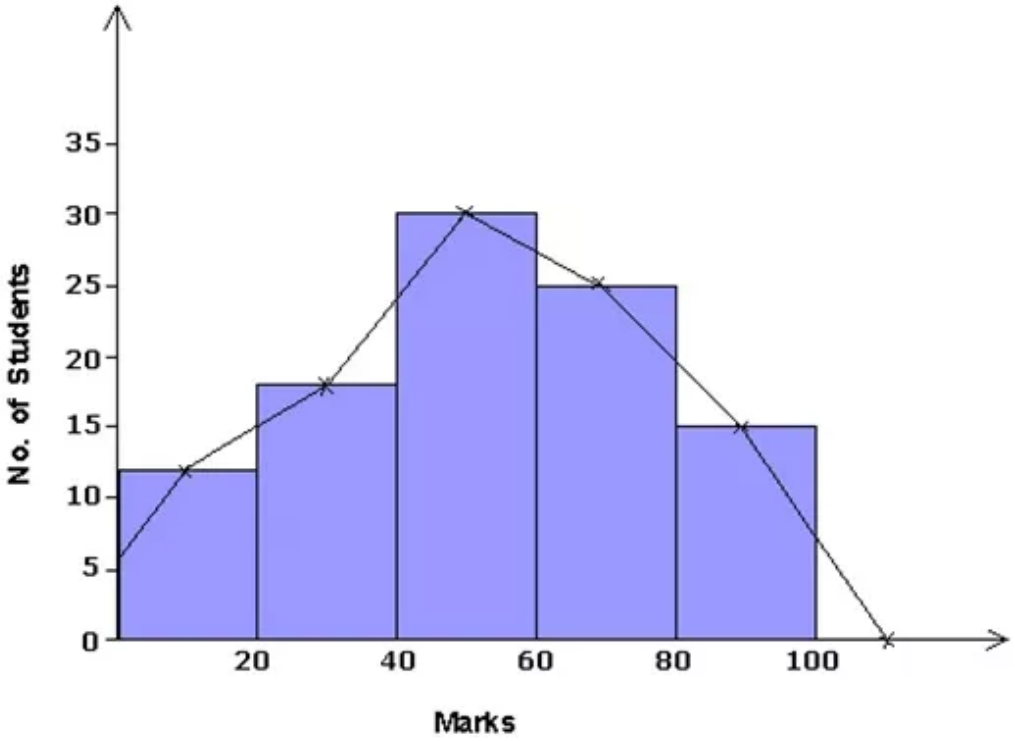
We take the class limits on the x-axis and the frequencies on the y-axis on suitable scales. We draw rectangles with the class intervals as bases and the corresponding frequencies as heights.



Answer 11.

We represent the class limits on the x-axis on a suitable scale and the frequencies on the y-axis on a suitable scale. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution.

Now, we take the mid-points of the upper horizontal side of each rectangle. Join the mid-points of two imaginary class intervals, one on either side of the histogram, by line segments one after the other.

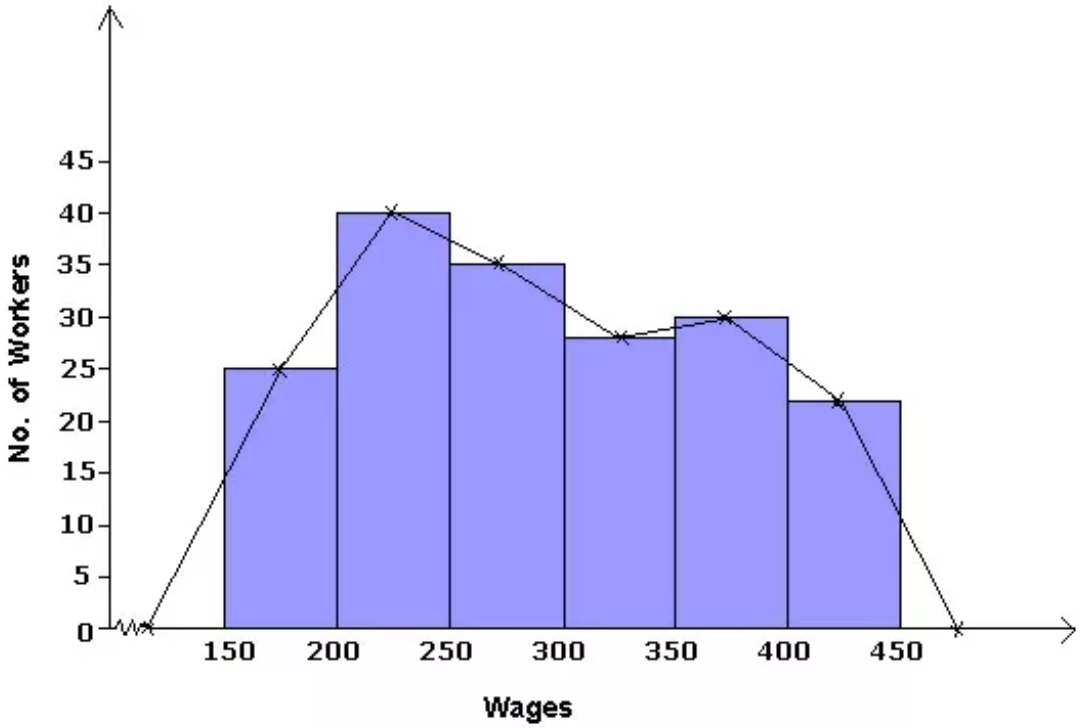


Answer 12.

We represent the class limits on the x-axis on a suitable scale and the frequencies on the y-axis on a suitable scale. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution.

Now, we take the mid-points of the upper horizontal side of each rectangle. Join the mid-points of two imaginary class intervals, one on either side of the histogram, by line segments one after the other.

Here as the class limits do not start from 0, we put a kink between 0 and the lower boundary of the first class.

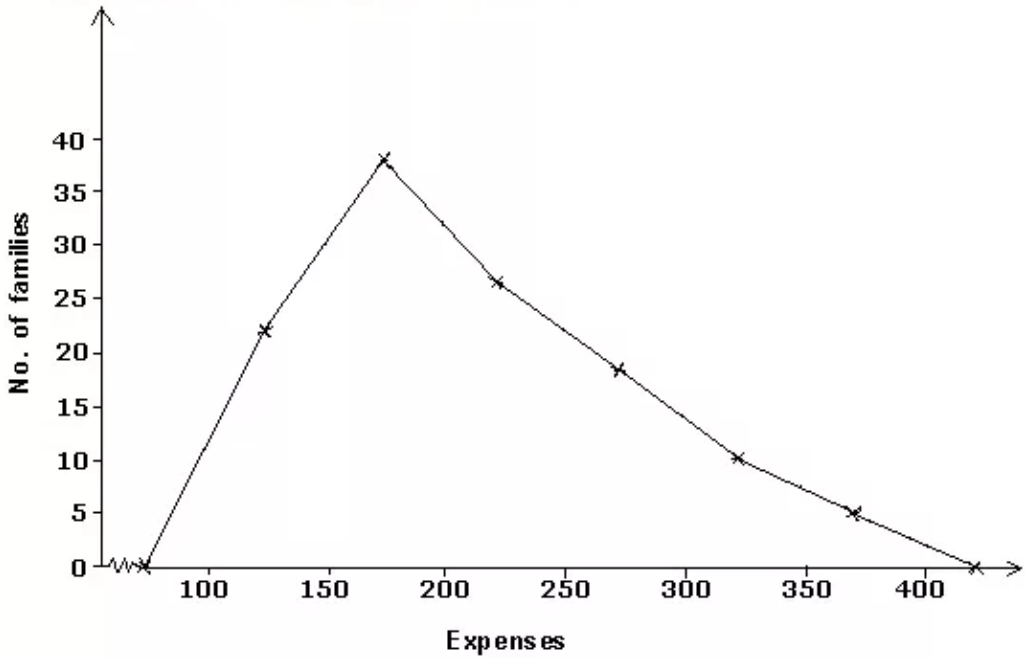


Answer 13.

We take the class limits on the x-axis and the frequencies on the y-axis on suitable scales.

Now, find the class marks of all the class intervals. Locate the points (x_1, y_1) on the graph, where x_1 denotes the class mark and y_1 denotes the corresponding frequency. Join all the points plotted above with straight line segments. Join the first point and the last point to the points representing class marks of the class intervals before the first class interval and after the last class interval of the given frequency distribution.

Here as the class limits do not start from 0, we put a kink between 0 and the lower boundary of the first class.



Answer 14.

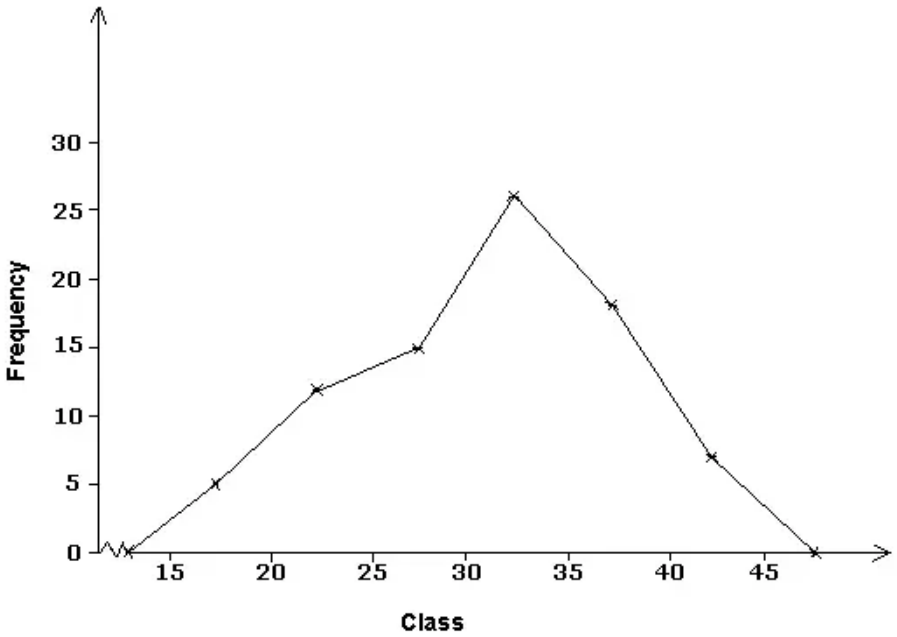
14

We take the class limits on the x-axis and the frequencies on the y-axis on suitable scales.

Now, find the class marks of all the class intervals. Locate the points (x_1, y_1) on the graph, where x_1 denotes the class mark and y_1 denotes the corresponding frequency.

Join all the points plotted above with straight line segments. Join the first point and the last point to the points representing class marks of the class intervals before the first class interval and after the last class interval of the given frequency distribution.

Here as the class limits do not start from 0, we put a kink between 0 and the lower boundary of the first class.



Answer 15.

We see that the class intervals are in an inclusive manner. We first need to convert them into exclusive manner.

Marks	No. of students
4.5 – 9.5	7
9.5 – 14.5	11
14.5 – 19.5	15
19.5 – 24.5	22
24.5 – 29.5	18
29.5 – 34.5	5

We take the class limits on the x-axis and the frequencies on the y-axis on suitable scales.

Now, find the class marks of all the class intervals. Locate the points (x_1, y_1) on the graph, where x_1 denotes the class mark and y_1 denotes the corresponding frequency. Join all the points plotted above with straight line segments. Join the first point and the last point to the points representing class marks of the class intervals before the first class interval and after the last class interval of the given frequency distribution.

Here as the class limits do not start from 0, we put a kink between 0 and the lower boundary of the first class.