

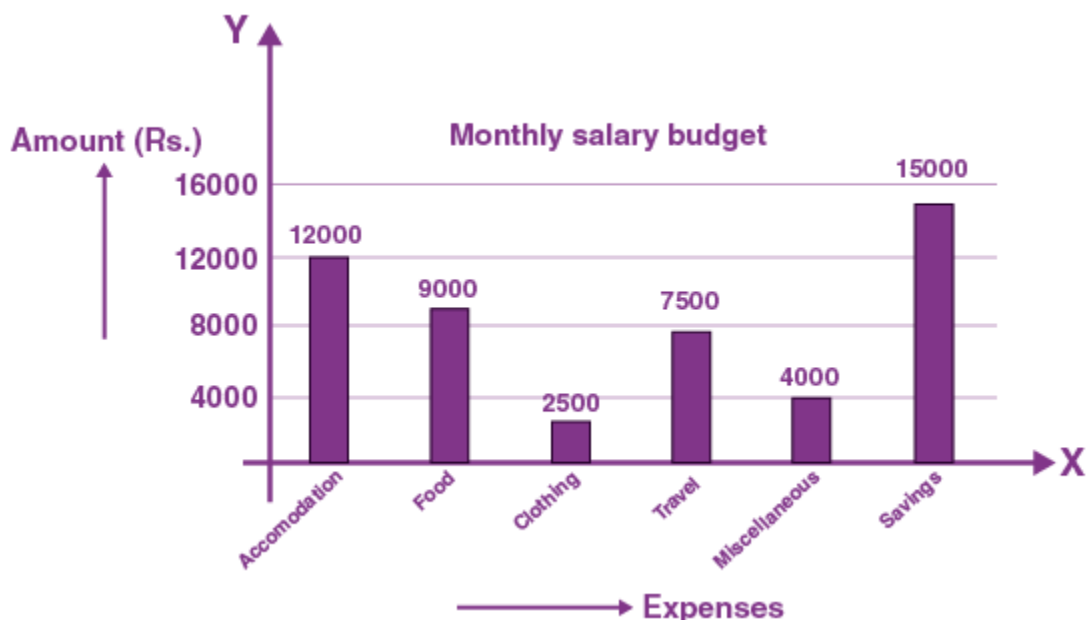
1. Harmeet earns Rs 50,000 per month. He budget for his salary as per the following table:

Expenses	Accommodation	Food	Clothing	Travel	Miscellaneous	Savings
Amount (Rs)	12000	9000	2500	7500	4000	15000

Draw a bar graph for the above data.

Solution:

The bar graph for the above data is as follows:



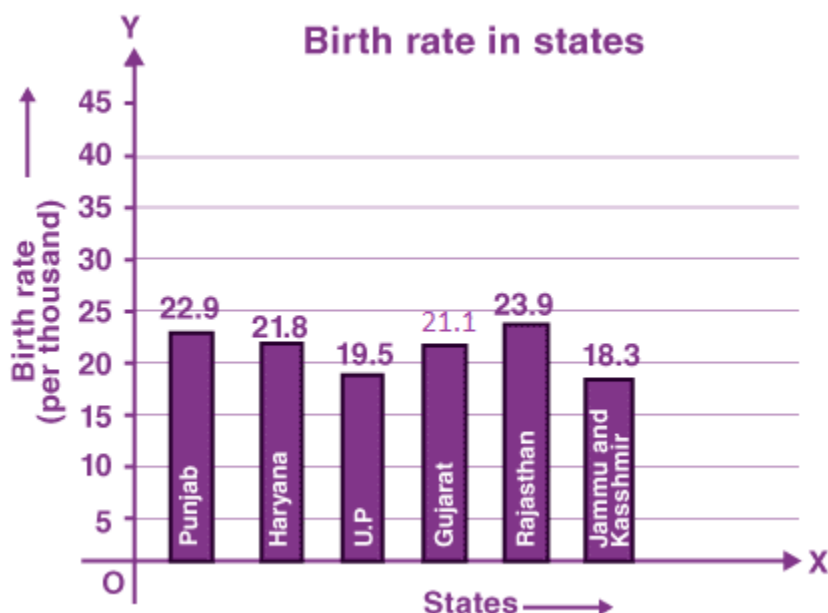
2. The birth rate per thousand of the following states over a certain period is given below:

States	Punjab	Haryana	U.P.	Gujarat	Rajasthan	Jammu and Kashmir
Birth Rate (per thousand)	22.9	21.8	19.5	21.1	23.9	18.3

Draw a bar graph for the above data

Solution:

The bar graph for the above data is shown below



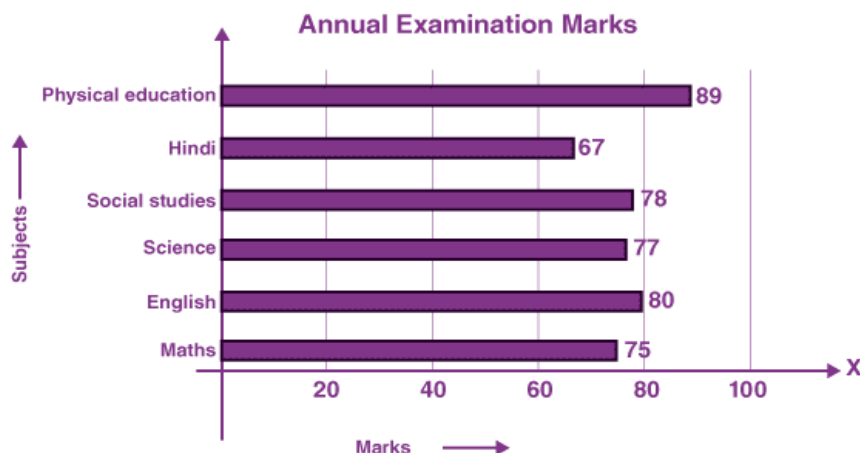
3. Fadil, a class IX student, scored marks in different subjects (each out of total 100) during his annual examination as given below

Subject	Maths	English	Science	Social Studies	Hindi	Physical Education
Mark (out of 100)	75	80	77	78	67	89

Draw horizontal bar graph for the above data.

Solution:

The horizontal bar graph for the above data is as follows:



4. The number of students in different sections of class IX of a certain school is given

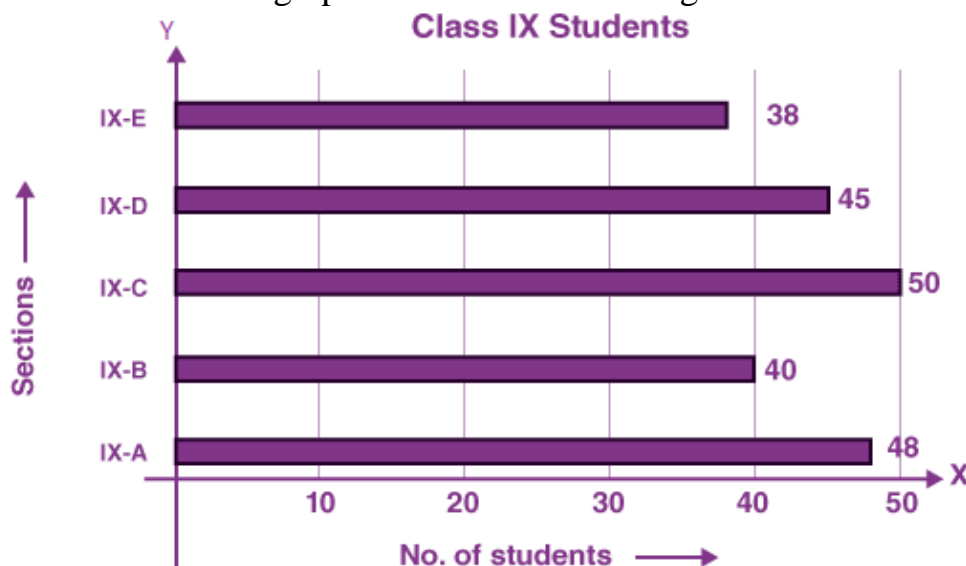
in the following table.

Section	IX - A	IX - B	IX - C	IX - D	IX - E
Number of students	48	40	50	45	38

Draw horizontal bar graph for the above data.

Solution:

The horizontal bar graph for the above data is given below



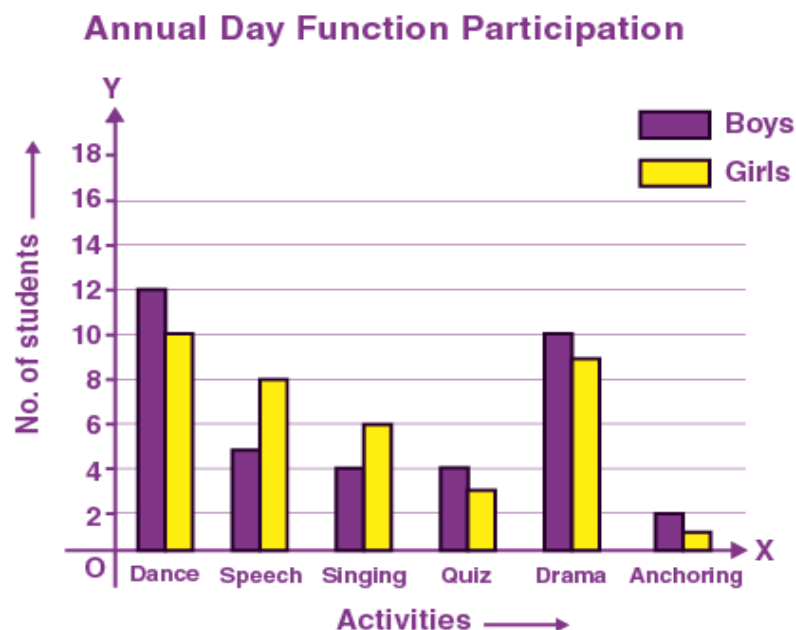
5. The number of students (boys and girls) of class IX participating in different activities during their annual day function is given below:

Activities	Dance	Speech	Singing	Quiz	Drama	Anchoring
Boys	12	5	4	4	10	2
Girls	10	8	6	3	9	1

Draw a double bar graph for the above data.

Solution:

The double bar graph for the above data is shown below



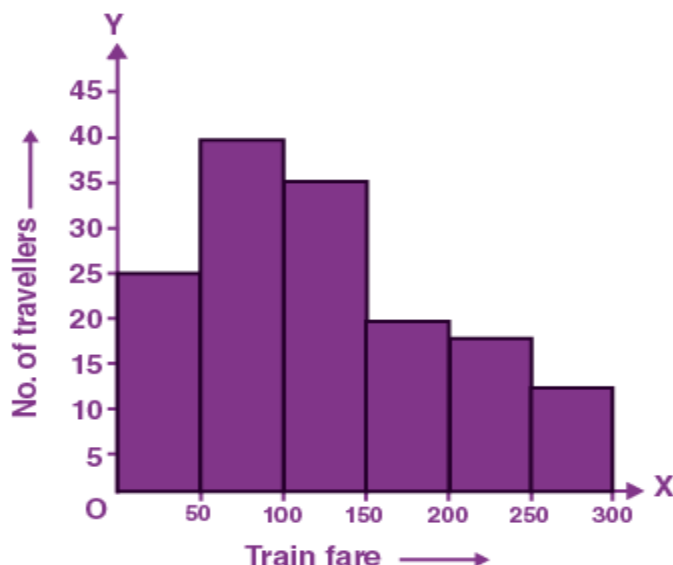
6. Draw a histogram for the following frequency distribution:

Train fare	0 - 50	50 - 100	100 - 150	150 - 200	200 - 250	250 - 300
No. of travellers	25	40	36	20	17	12

Solution:

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.

The histogram for the above frequency distribution is shown below



7. Draw a histogram for the following frequency table:

Class Interval	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
Frequency	5	9	12	10	16	12

Solution:

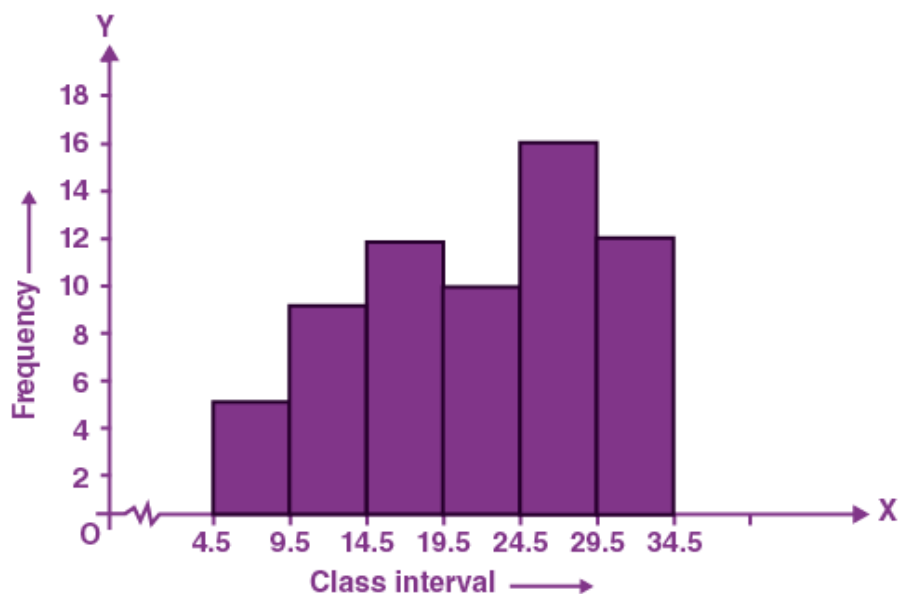
We see that the class intervals are in an inclusive manner. First, we need to convert them into exclusive manner.

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 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 true lower boundary of the first class.

The histogram for the given frequency table is shown below



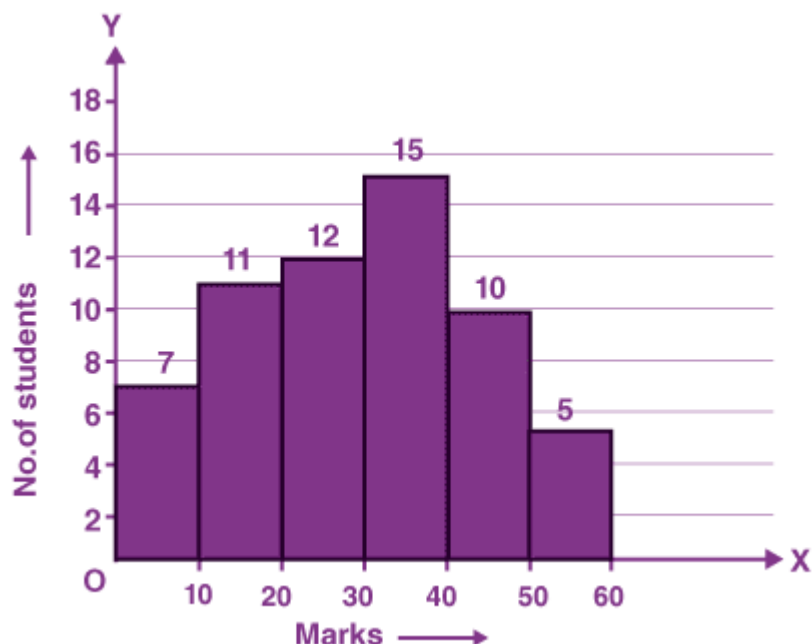
8. Draw a histogram for the following cumulative frequency table:

Marks	Less than 10	Less than 20	Less than 30	Less than 40	Less than 50	Less than 60
Number of student	7	18	30	45	55	60

Solution:

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Number of students	7	11	12	15	10	5

The histogram for the cumulative frequency table is shown below



9. Draw a histogram for the following cumulative frequency table:

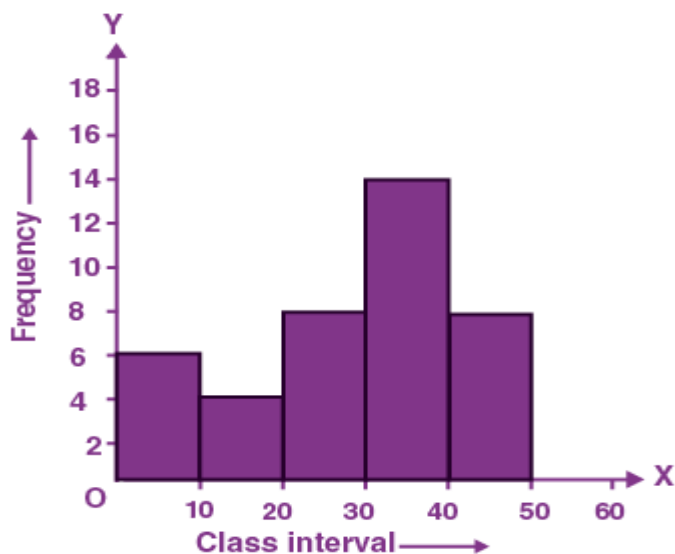
Class interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Cumulative Frequency	6	10	18	32	40

Solution:

First convert the cumulative frequency table to an exclusive frequency distribution table.

Class interval	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Cumulative 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. The histogram for the given cumulative frequency table is shown below



10. Draw a histogram and a frequency polygon for the following data:

Marks	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100
Number of students	12	18	30	25	15

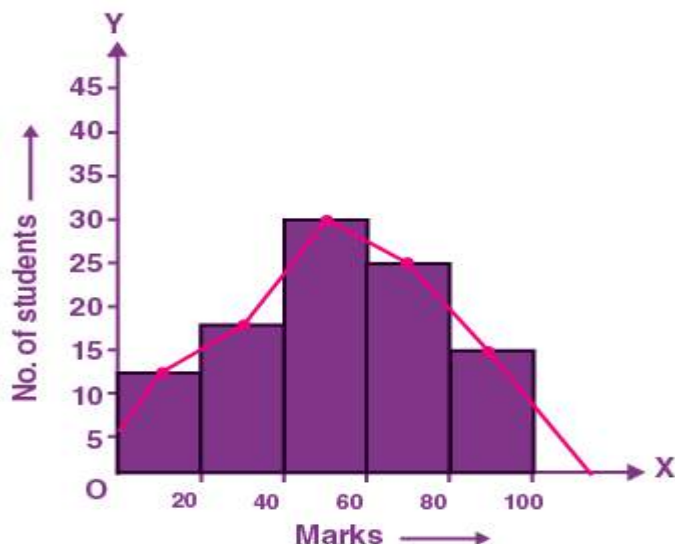
Solution:

We represent the class limits on the x-axis 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,

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.

The histogram and a frequency polygon for a given data is as follows:



11. Draw a histogram and a frequency polygon for the following data:

Wages	150 - 200	200 - 250	250 - 300	300 - 350	350 - 400	400 - 450
No. of workers	25	40	35	28	30	22

Solution:

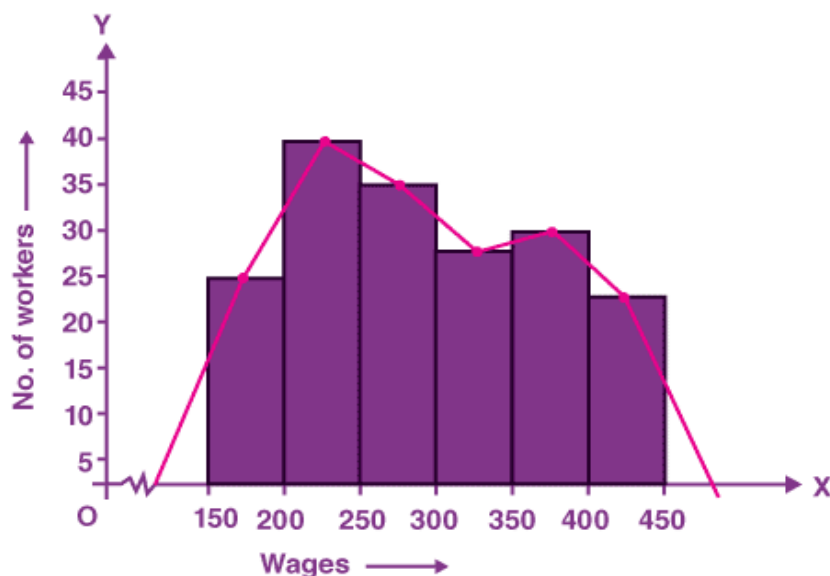
We represent the class limits on the x-axis and the frequencies on the y-axis on a suitable scale. Taking class intervals as bases and the corresponding frequencies as heights, we construct rectangles to obtain a histogram of the given frequency distribution.

Now,

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.

The histogram and a frequency polygon of the given data is as follows



12. Draw a frequency polygon for the following data:

Expenses	100 - 150	150 - 200	200 - 250	250 - 300	300 - 350	350 - 400
No. of families	22	37	26	18	10	5

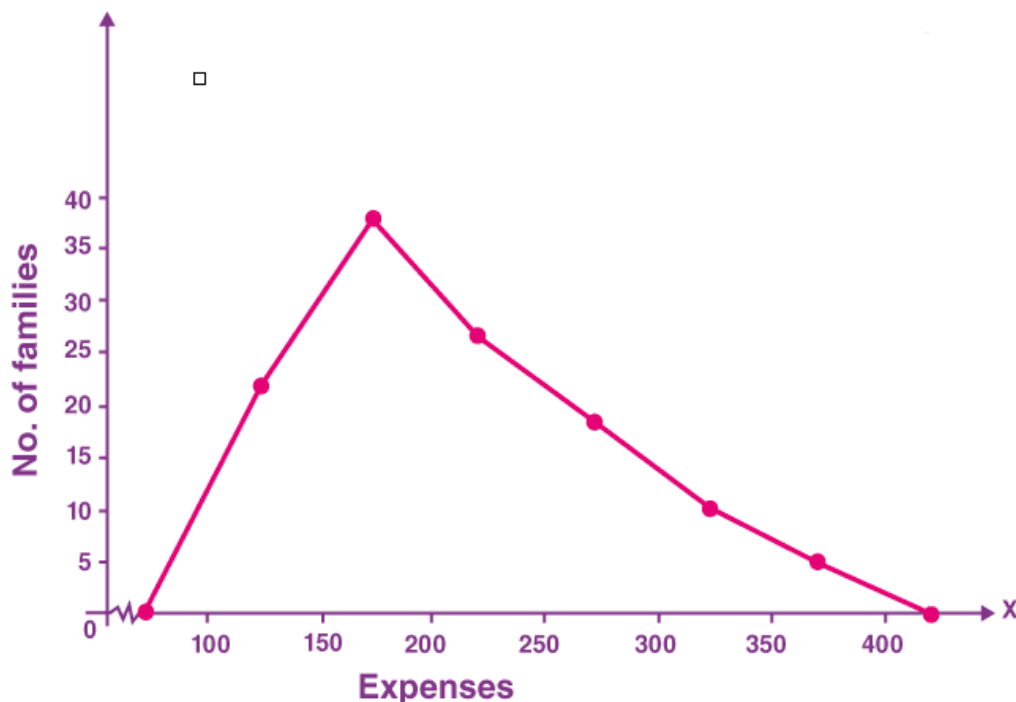
Solution:

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.

Frequency polygon for the given data is shown below



13. Draw a frequency polygon for the following data:

Class	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45
Frequency	5	12	15	26	18	7

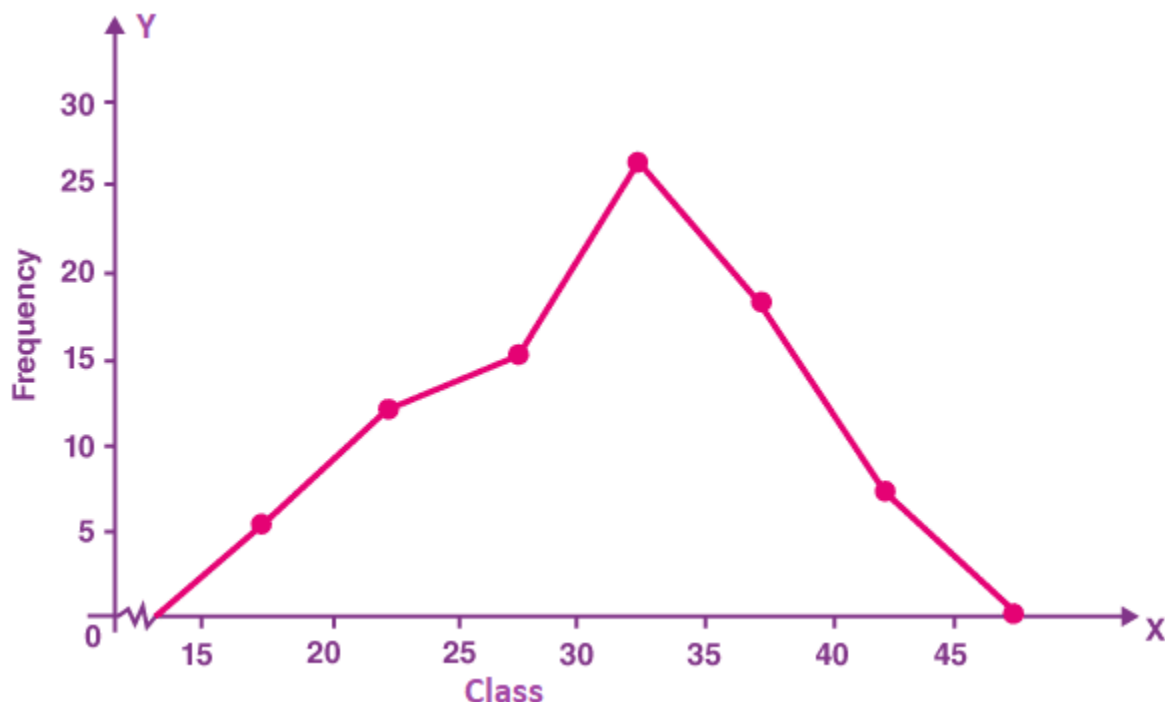
Solution:

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

Frequency polygon for the given data is shown below



14. Draw a frequency polygon for the following data:

Marks	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34
No. of students	7	11	15	22	18	5

Solution:

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

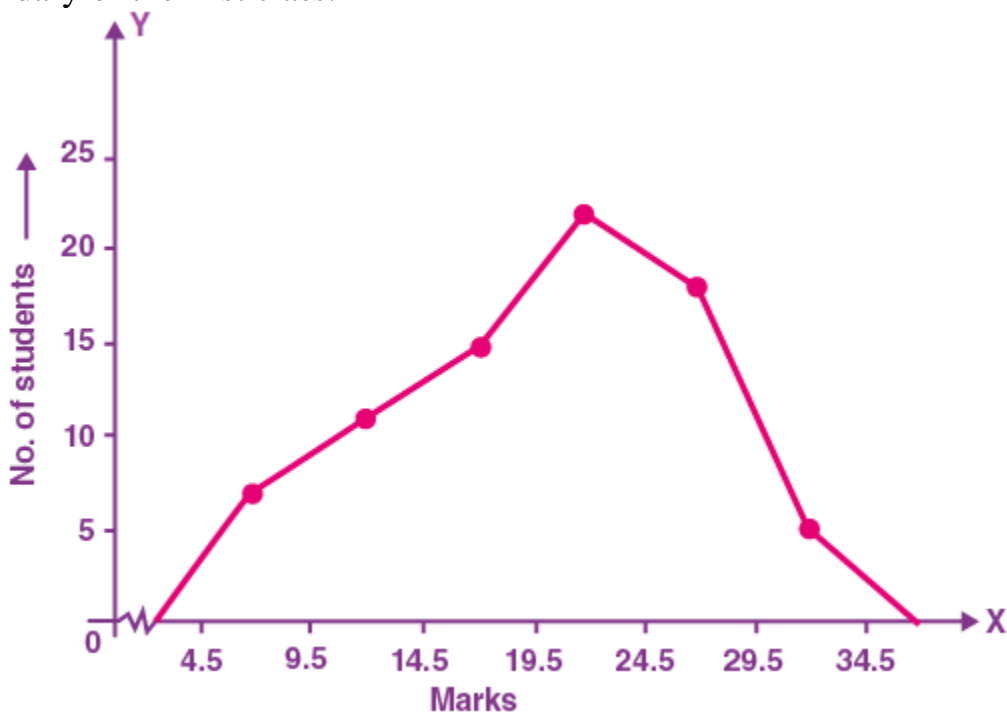
Marks	No. of students
4.5 - 9.5	7
9.5 - 14.5	11
14.5 - 19.5	15
19.5 - 24.5	22
24.5 - 29.5	18
29.5 - 34.5	5

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

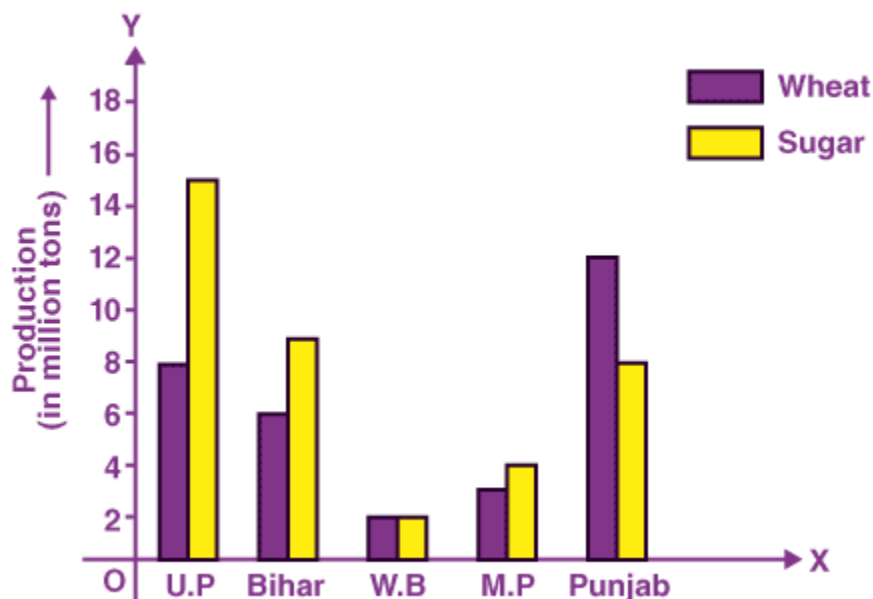
Find the class marks of all the class intervals. Locate the points (x_1, y_1) on the graph, where x_1 denotes the class mark and y_1 denotes the corresponding frequency. Join all the points plotted above with straight line segments. Join the first point and the last point to

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.



15. Read the following bar graph and answer the following questions:



a. What information is given by the graph?

- b. Which state is the largest producer of wheat?**
- c. Which state is the largest producer of sugar?**
- d. Which state has total production of wheat and sugar as its maximum?**
- e. Which state has the total production of wheat and sugar minimum?**

Solution:

- a. The given graph gives information about production of wheat and sugar in five different states (U.P, Bihar, W.B, M.P, Punjab)
- b. The largest producer of wheat is Punjab
- c. The largest producer of sugar is U.P.
- d. The state which has total production of wheat and sugar as its maximum is U.P.
- e. The state which has total production of wheat and sugar minimum is W.B.

