

Chapter 23: Graphical Representation of Statistical Data

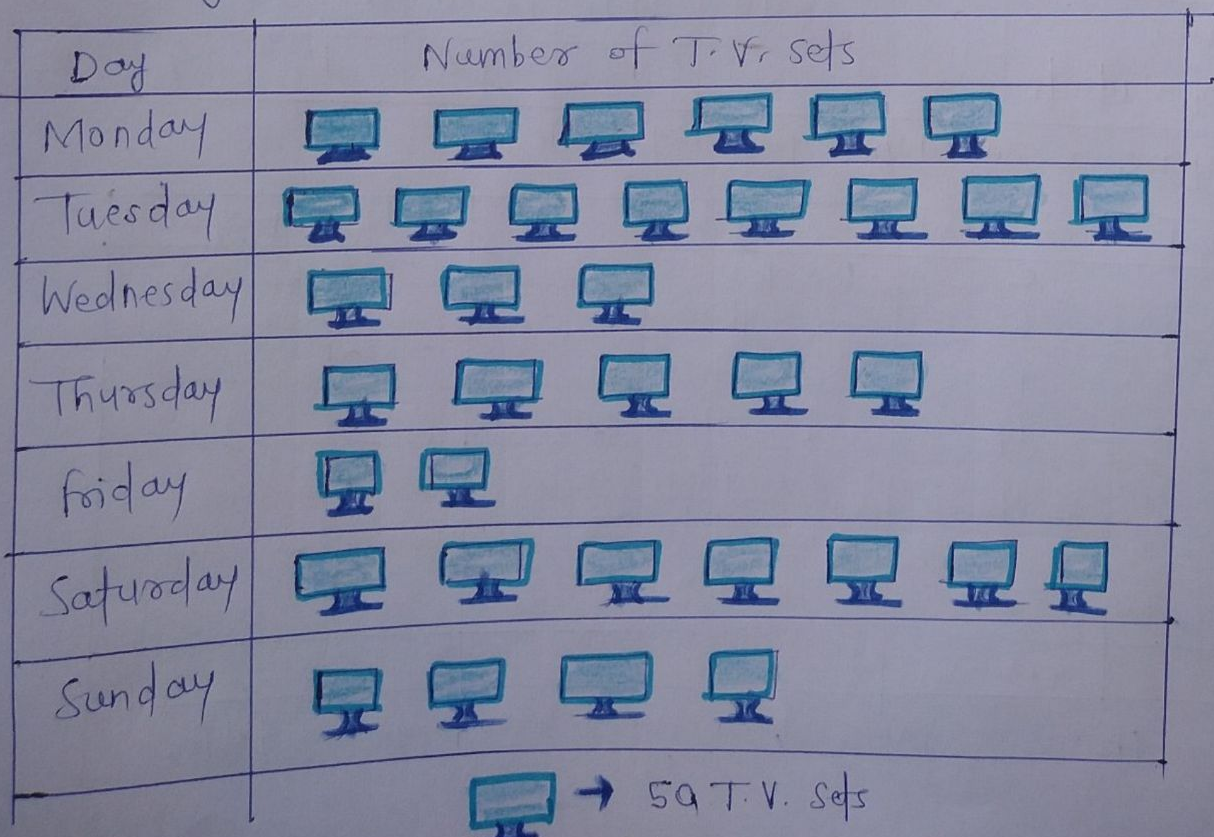
Exercise 23.1

1.) The following table shows the daily production of T.V. sets in an industry for 7 days of a week.

Day	Monday	Tuesday	Wed	Thursday	Fri	Satur	Sund
no. of T.V. sets	300	400	150	250	100	350	200

Represent the above information by a pictograph.

→ The given information of daily production of T.V. sets in an industry for 7 days of a week is represented using a pictograph as shown below:









2.) The following table shows the number of Maruti cars sold by five dealers in a particular month:

Dealer	Saya	Bagga links	D.D. motors	Bhasin Motors	Competent
Cars sold	60	40	20	15	15

→ Represent the above information by a pictograph.

The given information of number of Maruti cars sold by five dealers in a particular month is represented by using pictograph as shown below:

Dealer	Number of Maruti Cars Sold
Saya	
Bagga links	
D.D. Motors	
Bhasin Motors	
Competent	

 → 10 cars

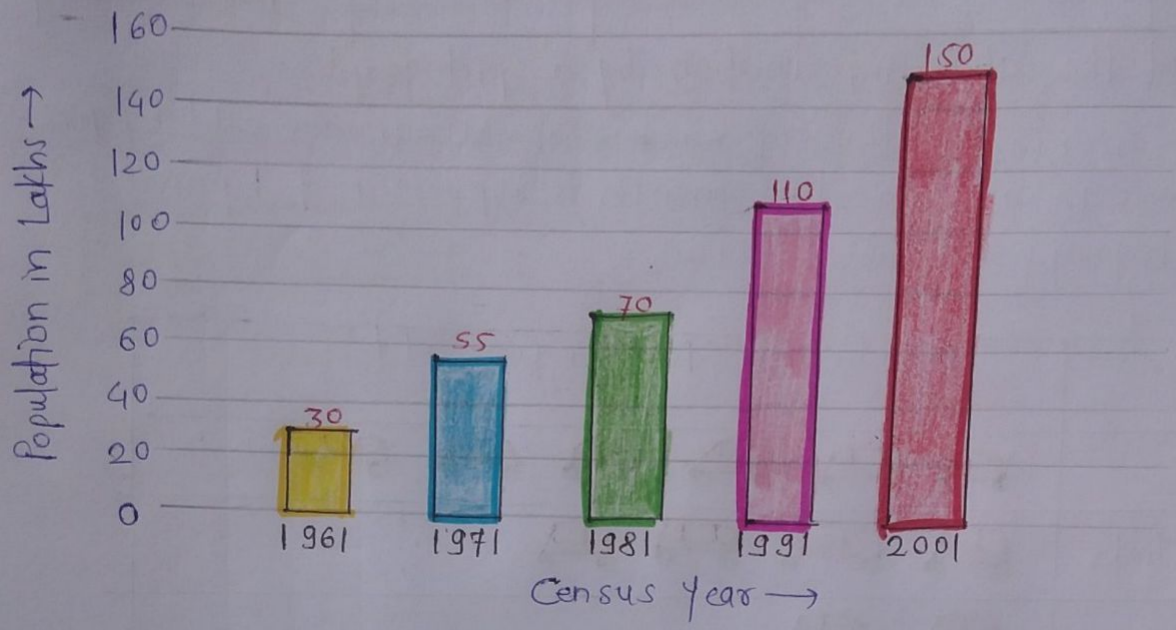
3.) The population of Delhi state in different census years is as given below:

Census Year	1961	1971	1981	1991	2001
Population in Lakhs	30	55	70	110	150

Represent the above information with the help of bar graph.

→ The following graph shows graphical representation of given information.

- The horizontal axis represents the years & vertical axis represents population in lakhs here.
- We can observe that, the heights of rectangles are proportional to the population in lakhs



- 4.) Read the bar graph shown below & answer the following questions.
- What is the information given by the bar graph?



- How many tickets of Assam state lottery were sold by the agent?
- Of which state, were the maximum number of tickets sold?

iv) State whether true or false.

The maximum number of tickets sold is three times the minimum number of tickets sold.

v) Of which state were the minimum number of tickets sold?

→ i) The above bar graph represents the no. of tickets of different state lotteries sold by an agent on a day.

ii) 40 tickets of Assam state lottery were sold by the agent.

iii) In the state of Haryana, the maximum no. of tickets sold & they are 100 in number.

iv) As the maximum no. of tickets sold are 100 in number in Haryana state. While the minimum no. of tickets sold are 20 in the state of Rajasthan.

$$\Rightarrow 100 = 5(20)$$

Hence the given statement is false.

v) The minimum no. of tickets are sold is 20 in the state of Rajasthan.

5.) Study the bar graph representing the no. of persons in various age groups in a town shown in fig. Observe the bar graph and answer the following questions:

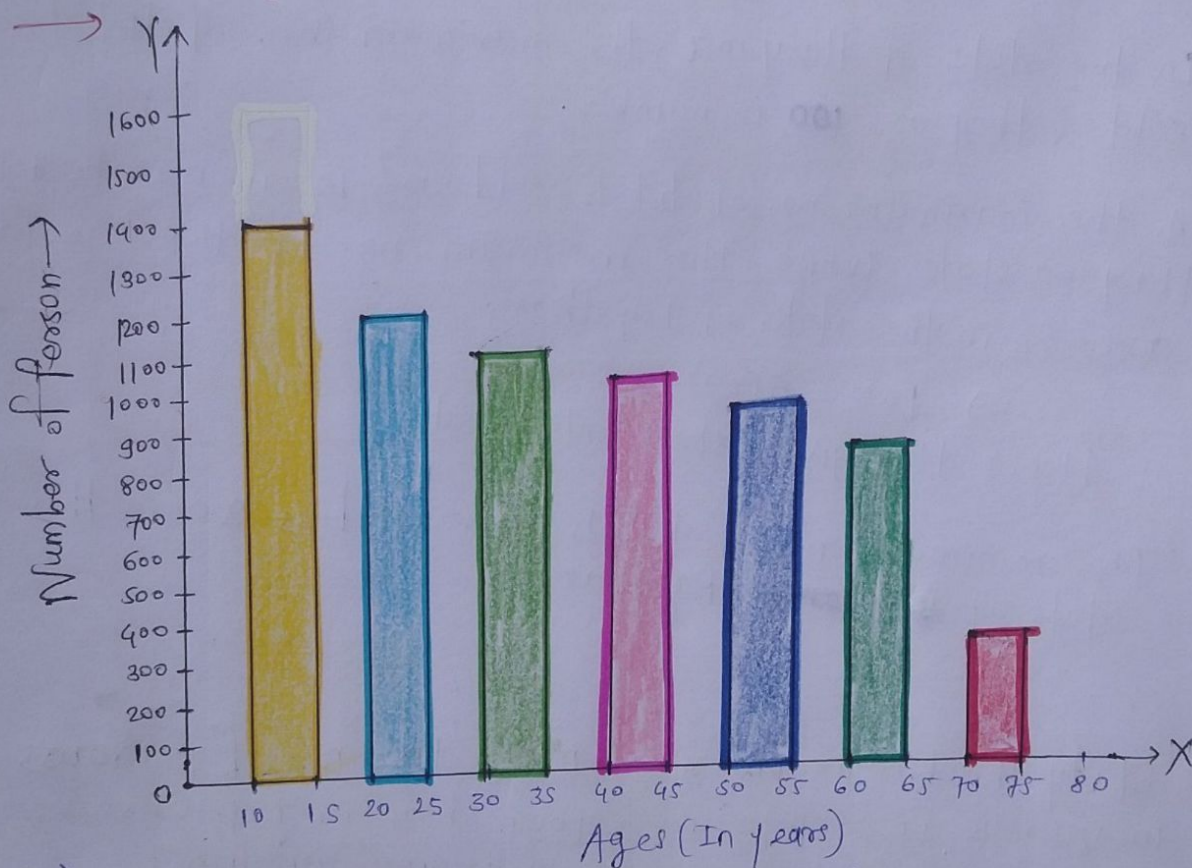
i) What is the percentage of the youngest-age-group persons over those in the oldest age group?

ii) What is the total population of the town?

iii) What is the number of persons in the age-group 60-65?

iv) How many persons are more in the age group 10-15 than in the age group 30-35?

- v) What is the age-group of exactly 1200 persons living in the town?
- vi) What is the total no. of persons living in the town in the age-group 40-55?
- vii) What is the total no. of persons living in the town in the age groups 10-15 and 60-65?
- viii) Whether the population in general increases, decreases or remain constant with the increase in the age-group.



- i) The youngest age-group is found to be 10-15 years.
- ii) The no. of persons in this group = 1400
- The oldest age-group is found to be 70-75 years.
- The no. of persons in this group = 300
- Then, percentage of youngest-age group over those in the oldest age-group is as given below:

$$\frac{1400}{300} \times 100 = \frac{1400}{3}$$

ii) The total population of town = $300 + 800 + 900 + 1000 + 1100 + 1200 + 1400 = 6700$.

iii) The persons in the age-group 60-65 are 800 in number.

iv) The persons in the age-group 10-15 are 1400 in number.

v) The persons in the age-group 30-35 are 1100 in number.

Thus, in age-group 10-15, 300 more persons are there than in age-group 30-35.

vi) The age-group of 1200 persons living in the town is 20-25.

vii) The total no. of persons living in the town in the age-group 50-55 are 900.

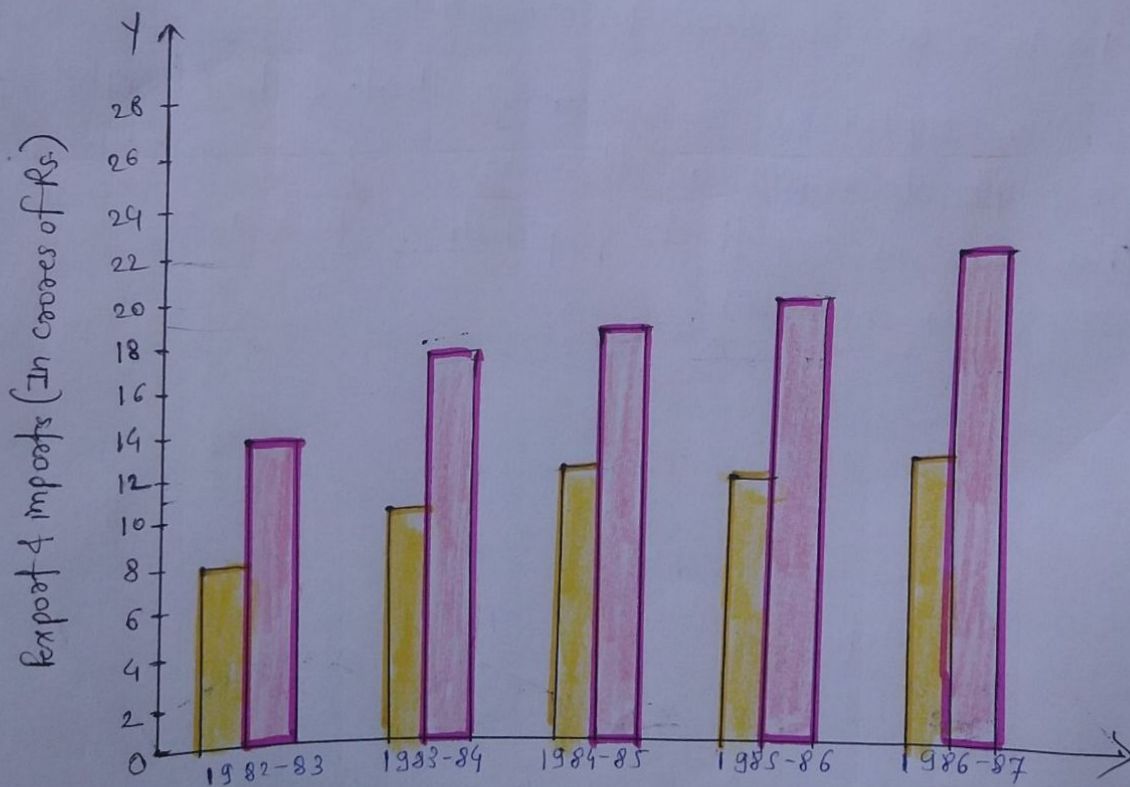
viii) The total no. of persons living in the age-group 10-15 & 60-65 are $1400 + 800 = 2200$.

From graph, we can observe that, the height of bar graph decreases as the age in years increases. Thus, we can say that population decreases as the age-group increases.

Exercise 23.2

- 1.) Explain the reading and interpretation of bar graphs.
Bar graph consist of vertical or horizontal bar lines or rectangles sometimes.
From the bar graph, we can easily collect the information & from that we can make conclusions & which is called as interpretation of bar graphs.

- 2.) Read the following bar graph & answer the following questions:
- What information is given in the bar graph?
 - In which year the export is minimum?
 - In which year the import is minimum?
 - In which year the difference of the values of export & import is maximum?



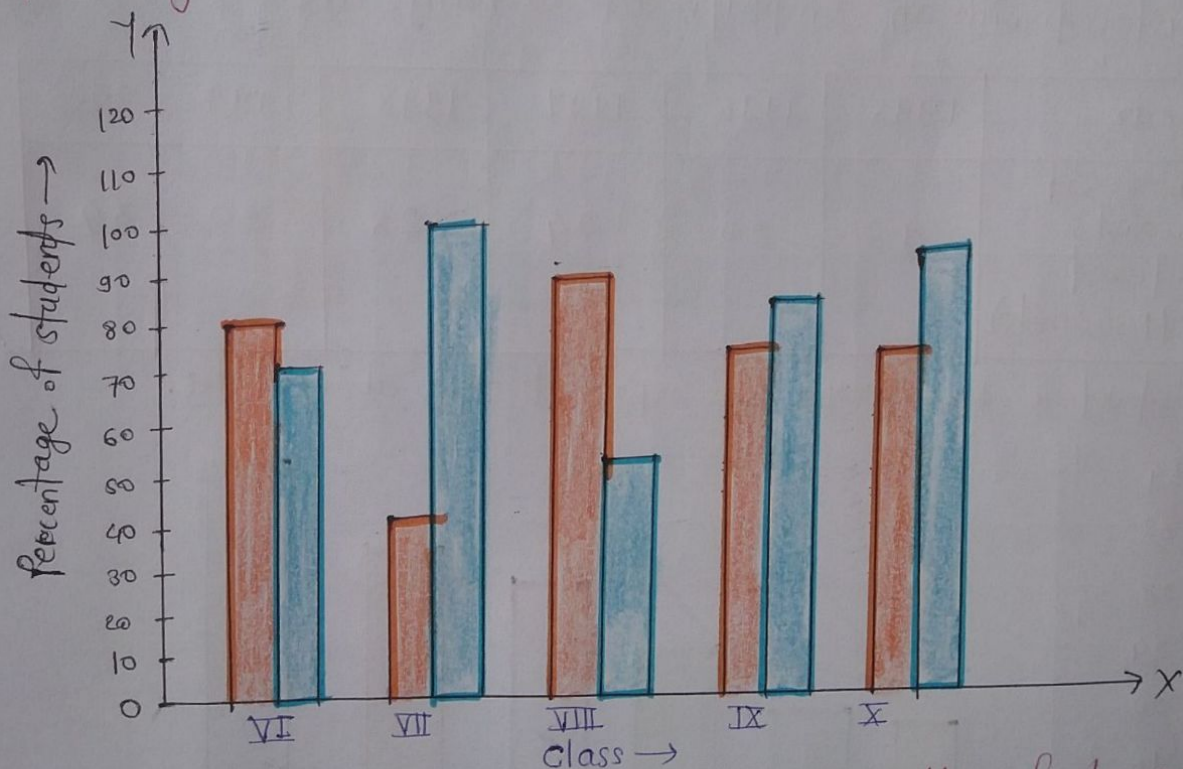
→ i) The bar graph represents the import and export in 100 crores of rupees from 1982-83 to 1986-87

ii) In year 1982-83 the export is minimum.

iii) In year 1986-87 the import is minimum.

iv) In year 1986-87 the difference of the values of export & import is maximum.

3.) The following bar graph shows the results of an annual examination in a secondary school. Read the bar graph given below, & choose the correct alternative in each of the following:



i) The pair of classes in which the results of boys & girls are inversely proportional are:

a) VI, VIII b) VI, IX c) VII, IX d) VIII, X

Ans: → b) VI, IX

ii) The class having the lowest failure rate of girls is :

- a) VI b) X c) IX d) VIII

Ans: a) VI

iii) The class having the lowest pass rate of students is :

- a) VI b) VII c) VIII d) IX

→ b) VII

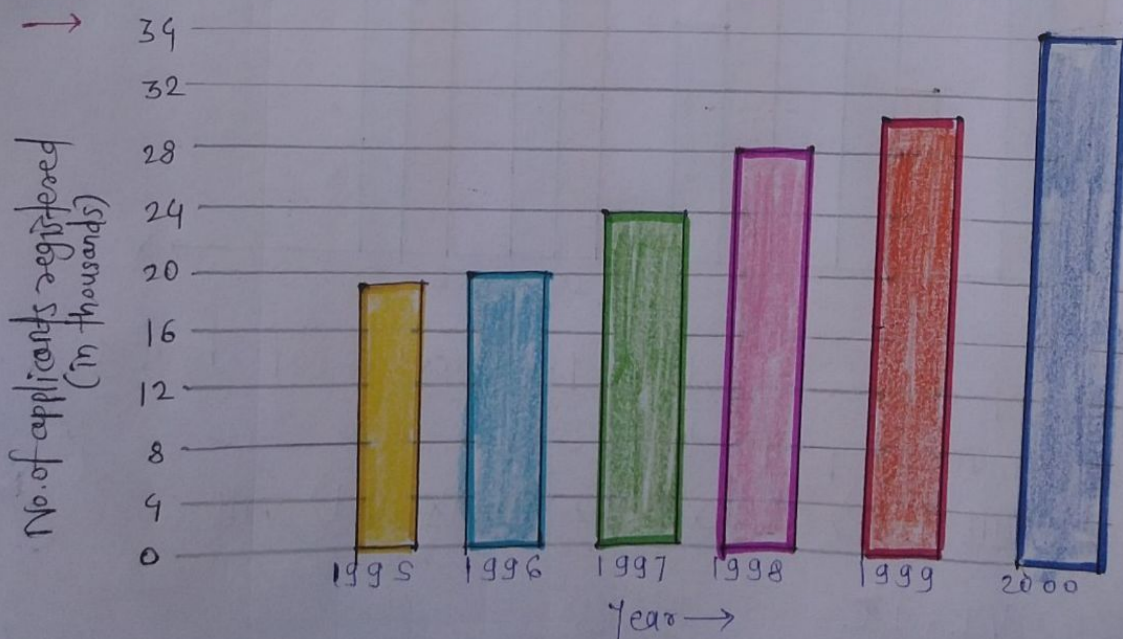
For class VII, the sum of heights of bars of boys & girls is found to be minimum.

i.e. $95 + 40 = 135$ (minimum)

4.) The following data gives the no. (in thousands) of applicants registered with an employment exchange during 1995-2000:

Year	1995	1996	1997	1998	1999	2000
Number of Applicants registered (In thousands)	18	20	24	28	30	34

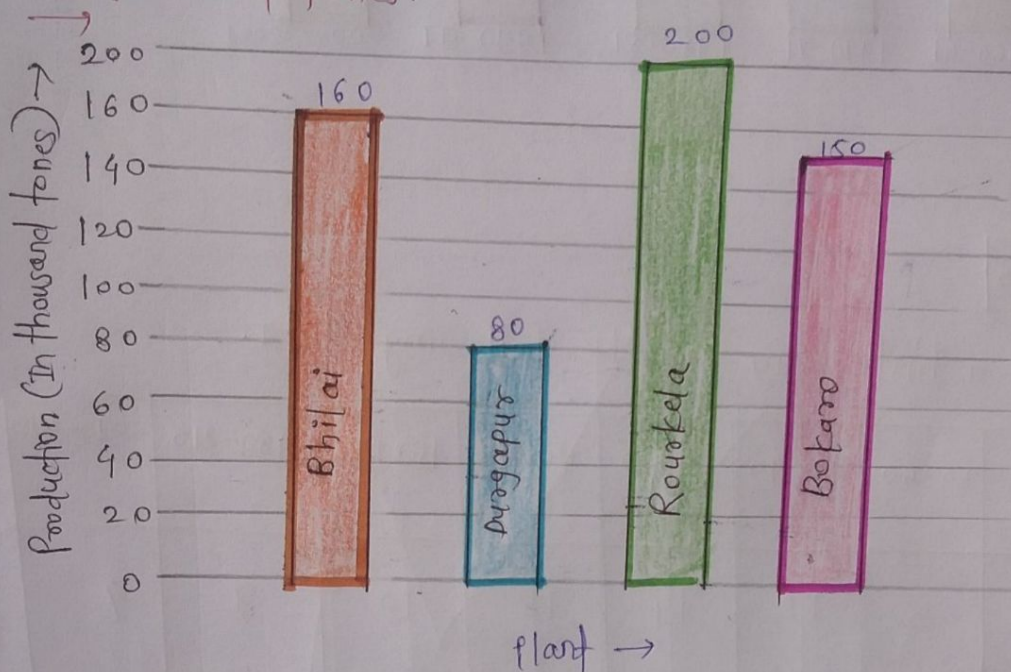
Construct a bar graph to represent the above data.



5.) The production of saleable steel in some of the steel plants of our country during 1999 is given below:

Plant	Bhilai	Durgapur	Rourkela	Bokaro
Production (In thousands)	160	80	200	150

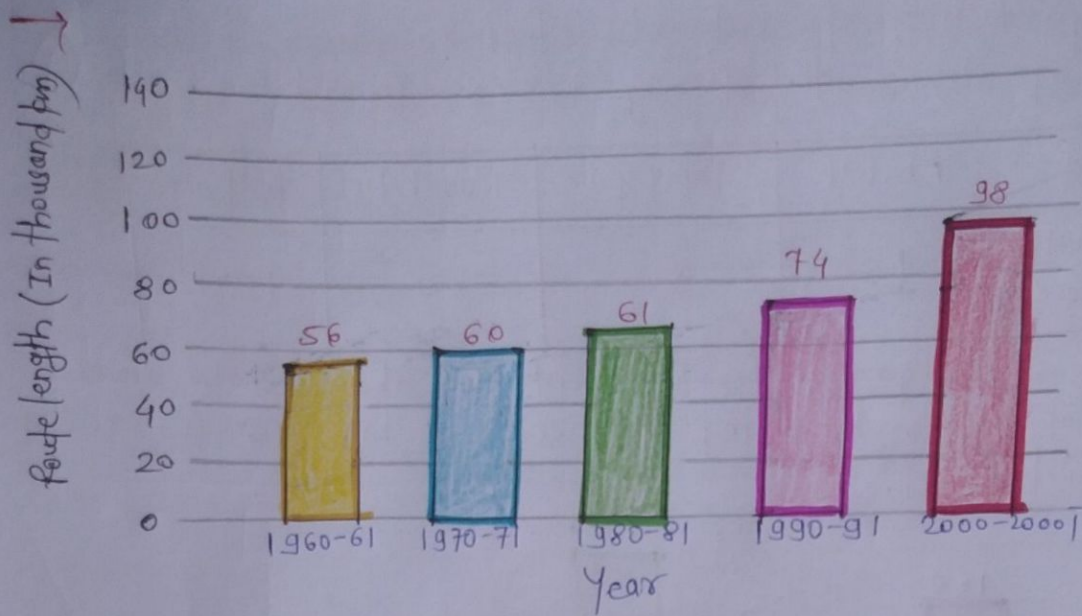
Construct a bar graph to represent the above data on a graph of paper by using the scale 1 big division = 20 thousand tones.



6.) The following table gives the route length (in thousand kilometers) of the Indian Railways in some of the years:

Year	1960-61	1970-71	1980-81	1990-91	2000-2001
Route length (In thousand km)	56	60	61	74	98

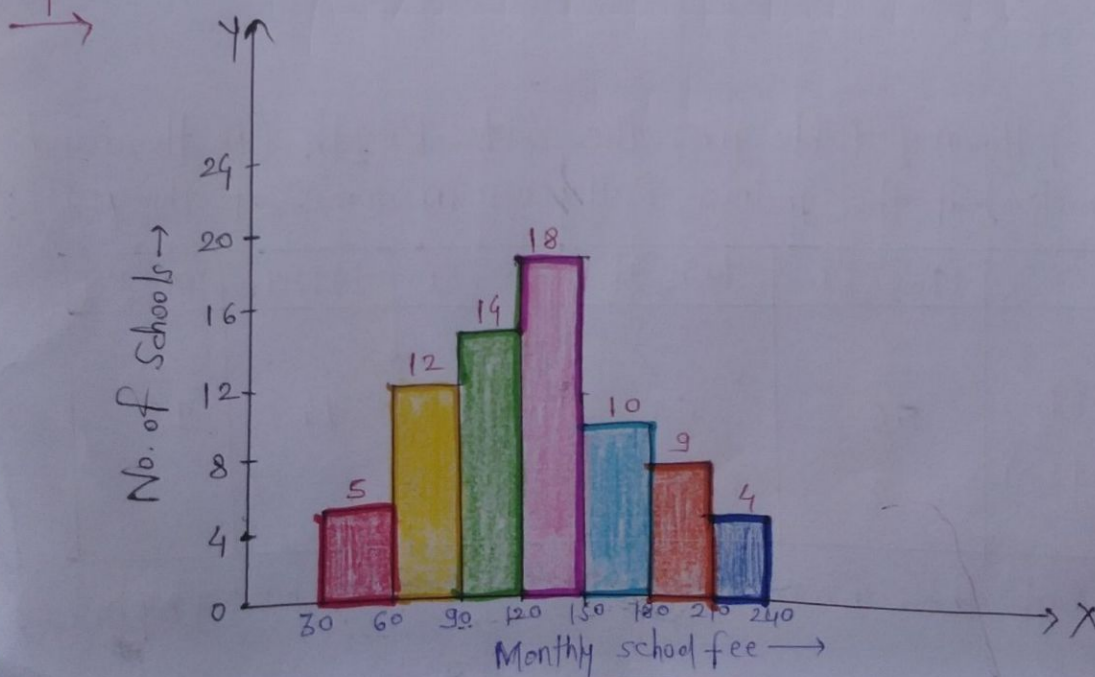
Represent the above data with the help of bar graph.



Exercise 23.3

1.) Construct a histogram for the following data!

Monthly School fees (In Rs.)	30-60	60-90	90-120	120-150	150-180	180-210	210-240
No. of Schools	5	12	14	18	10	9	4



2.) The time taken, in seconds to solve a problem by each of 25 pupils is as follows:

16, 20, 26, 27, 28, 30, 33, 37, 38, 40, 42, 43, 46, 46, 46, 48, 49, 50, 53, 58, 59, 60, 64, 52, 20.

a) Construct a frequency distribution for these data, using a class interval of 10 seconds.

b) draw a histogram to represent the frequency distribution.

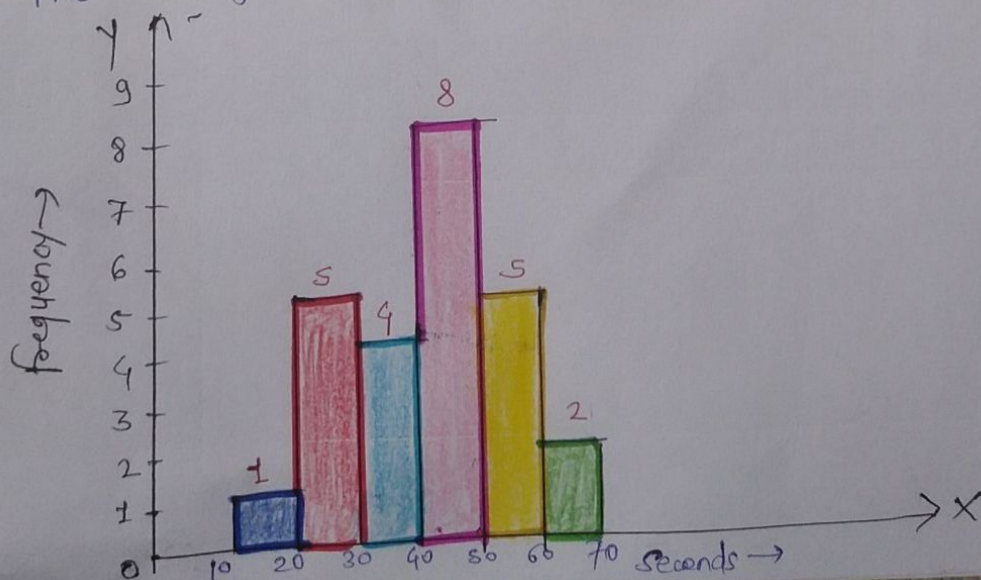
→ We arranged the given data in ascending order as below:

16, 20, 20, 26, 27, 28, 30, 33, 37, 38, 40, 42, 43, 46, 46, 46, 48, 49, 50, 52, 53, 58, 59, 60, 64.

a) Using a class interval of 10 seconds, we made a frequency distribution for the given data as below:

Class interval		frequency
10-20	16	1
20-30	20, 20, 26, 27, 28	5
30-40	30, 33, 37, 38	4
40-50	40, 42, 43, 46, 46, 46, 48, 49	8
50-60	50, 52, 53, 58, 59	5
60-70	60, 64	2

b) The histogram represented as below:



4) Draw, in the same diagram, a histogram & a frequency polygon to represent the following data which shows the monthly cost of living index in a city in a period of 2 years.

Cost of living index:	440-460	460-480	480-500	500-520	520-540	540-560	560-580	580-600
No. of months	2	4	3	5	3	2	1	4

