23. Graphical Representation of Statistical Data

Exercise 23.1

1. Question

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

Day	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Number of T.V. sets	300	400	150	250	100	350	200

Represent the above information by a pictograph.

Answer

Scale 1 = 100 sets	
Day	No. of T.V. Sets
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

2. Question

The following table shows the number of Maruti cars sold be five dealers in a particular month:

Dealer	Saya	Bagga Links	D.D. Motors	Bhasin Motors	Competent
Cars sold :	60	40	20	15	10

Represent the above information by a pictograph.

Answer

Scale 1  = 10 	
Dealer	Cars Sold
Saya	
Bagga Links	
D.D. Motors	
Bhasin Motors	
Competent	

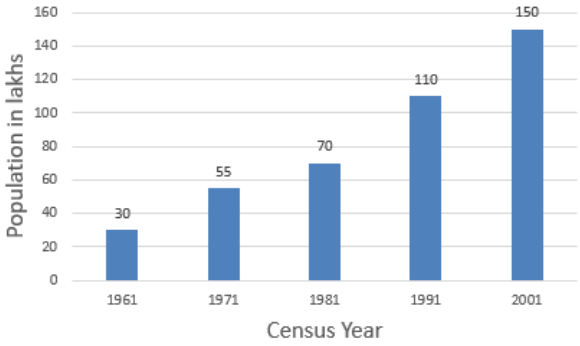
3. Question

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 a bar graph.

Answer



4. Question

Read the graph shown in Fig. 23.8 and answer the following questions:

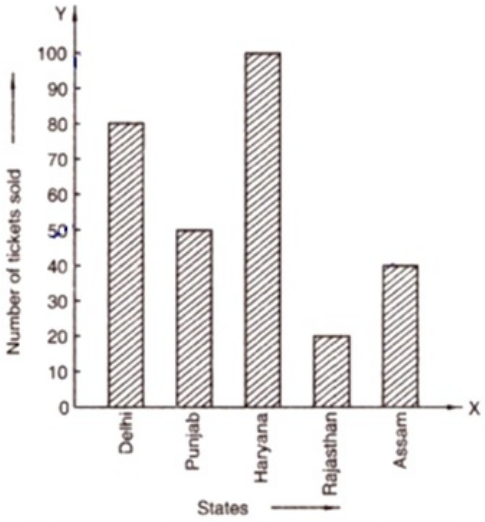


Fig. 23.8 : Bar graph of the tickets of different state lotteries sold by an agent on a day.

(i) What is the information given by the bar graph?

(ii) How many tickets of Assam State Lottery were sold by the agent?

(iii) 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?

Answer

(i) The given bar graph represents the number of the tickets of different states of lotteries sold a day.

(ii) Number of tickets of Assam state lottery that were sold by agent is 40

(iii) The maximum number of tickets were sold in Haryana.

(iv) Minimum number of tickets sold = 20

Maximum number of tickets sold = 100

Therefore, $100 = 5 \times 20$

Hence, the given statement is false.

(v) The minimum number of tickets were sold by the state Rajasthan.

5. Question

Study the bar graph representing the number of persons in various age groups in a town shown in Fig. 23.9. Observe the bar graph and answer the following questions:

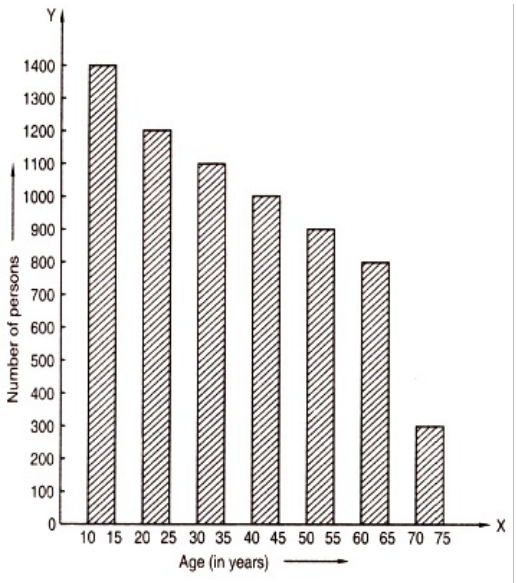


Fig. 23.9

(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 number of persons living in the town in the age-group 50-55?

(vii) What is the total number of persons living in the town in the age-groups 10-15 and 60-65?

(viii) Whether the population in general increases, decreases or remains constant with the increase in the age-group.

Answer

(i) The percentage of the youngest age-group persons over those in the oldest age group is:

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

= 466.67

(ii) Total population of the town:

1400 +1200 +1100 +1000 +900 +800 +300

= 6700

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

(iv) The number of persons that are more in the age-group 10-15 than in the age group 30 - 35 = 1400-1100

=300

(v) The age-group of exactly 1200 persons living in the town is 20 -25

(vi) The total number of persons living in the town in the age-group 50-55 is 900

(vii) The total number of persons living in the town in the age-groups 10-15 and 60-65 is

= 1400 +800

= 2200

(viii) With the increase in the age group, the population decreases.

6. Question

Read the bar graph shown in Fig. 23.10 and answer the following questions:

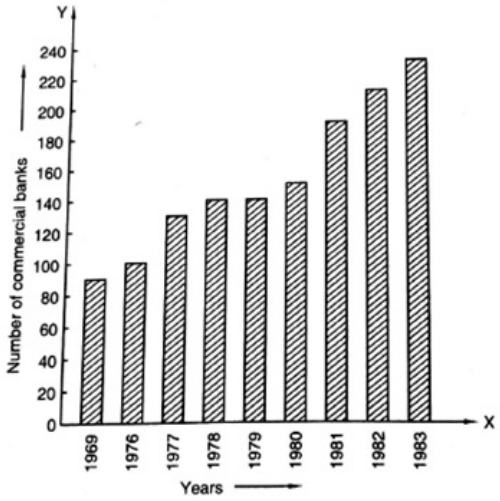


Fig. 23.10 : Bar graph of the number of commercial banks in India during some years.

(i) What is the information given by the bar graph?

(ii) What was the number of commercial banks in 1977?

(iii) What is the ratio of the number of commercial banks in 1969 to that in 1980?

(iv) State whether true of false:

The number of commercial banks in 1983 is less than double the number of commercial banks in 1969.

Answer

(i) Given bar graph represents the number of commercial banks in India during some years.

(ii) The number of commercial banks in 1977 was 130

(iii) The ratio of the number of commercial banks in 1969 to the number of commercial banks in 1980 = $\frac{90}{150}$

= 3:5

(iv) The number of commercial banks in 1983 = 230

The number of commercial banks in 1980 = 150

Clearly, the number of commercial banks in 1983 is not less than double the number of commercial banks in 1969

So, the given statement is false.

7. Question

Given below (Fig. 23.11) is the bar graph indicating the marks obtained out of 50 in mathematics paper by 100 students. Read the bar graph and answer the following questions:

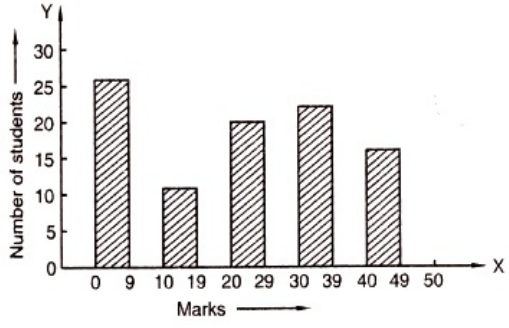


Fig. 23.11

(i) It is decided to distribute work books on mathematics to the students obtaining less than 20 marks, giving one work book to each of such students. If a work book costs Rs. 5, what sum is required to buy the work books?

(ii) Every student belonging to the highest mark group is entitled to get a prize of Rs. 10. How much amount of money is required for distributing the prize money?

(iii) Every student belonging to the lowest mark-group has to solve 5 problems per day. How many problems, in all, will be solved by the students of this group per day?

(iv) State whether true or False:

(a) 17% students have obtained marks ranging from 40 to 40.

(b) 59 students have obtained marks ranging from 10 to 29.

(v) What is the number of students getting less than 20 marks?

(vi) What is the number of students getting more than 29 marks?

(vii) What is the number of students getting marks between 9 and 40?

(viii) What is the number of belonging to the highest mark group?

(ix) What is the number of students obtaining more than 19 marks?

Answer

(i) Total numbers of students obtaining less than 20 marks = 27+ 12

= 39

The cost of one work book = Rs 5

Therefore, cash of 39 workbooks = 39 × 5

= Rs.195

(ii) The number of students belonging to the highest mark group = 17

The cost of a prize = 10

Therefore, cost of 17 prize

= 10 × 17

= Rs170

(iii) The number of students belonging to the lowest mark group = 27

The number of problems solved by 15 students = 5

Therefore, the total number of problems solved by 27 students = 5 × 27

= 135

(iv) (a)The total number of students = 100

The number of students in range 40-49, = 17

% of students marks ranging 40-49 $= \frac{17}{100} \times 100$

= 17%

So, the given statement is true.

(b) The number of students in range 10-29 = 32

% of students marks ranging 10-29 $= \frac{32}{100} \times 100$

= 32%

So the given statement is false.

(v) No, of students getting less than 20 marks = 39

(vi) Total number of students getting more than 29 marks = 41

(vii) Number of students getting marks between 9 and 40 = 12 + 20 + 24

= 56

(viii) The number of students belonging to the highest mark group = 17

(ix) The number of students obtaining more than 19 marks = 100 - 27 - 12

= 61

8. Question

Read the following bar graph (Fig. 23.12) and answer the following questions:

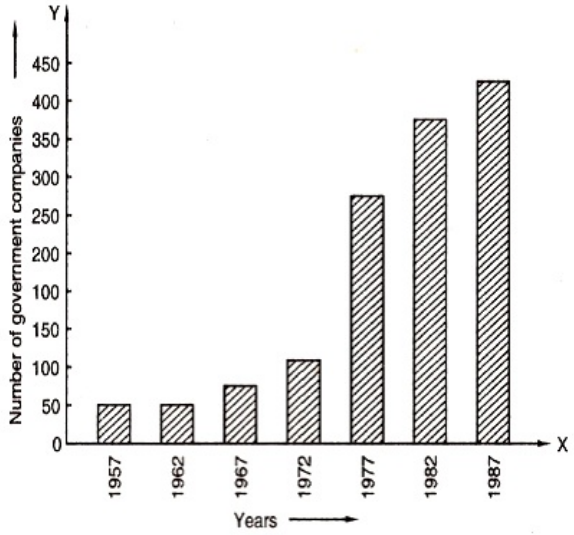


Fig. 23.12 Bar graph of the number of government companies in India during some years

(i) What is the information given by the bar graph?

(ii) State each of the following whether true or False?

(a) The number of government companies in 1957 is that of 1982 is 1: 9.

(b) The number of government companies have decreased over the year 1957 to 1983.

Answer

(i) The given bar graph represents the number of government companies in India during some year.

(ii) (a) No. of government companies in 1957 = 50

No. of government companies in 1982 = 375

Therefore, the number of government companies in 1957 to that in 1982 = $\frac{50}{375}$

= $\frac{2}{15}$

So, the given statement is false.

(b) The height of the bars increase over the years. Hence, the statement is false.

9. Question

Read the following bar graph and answer the following questions:

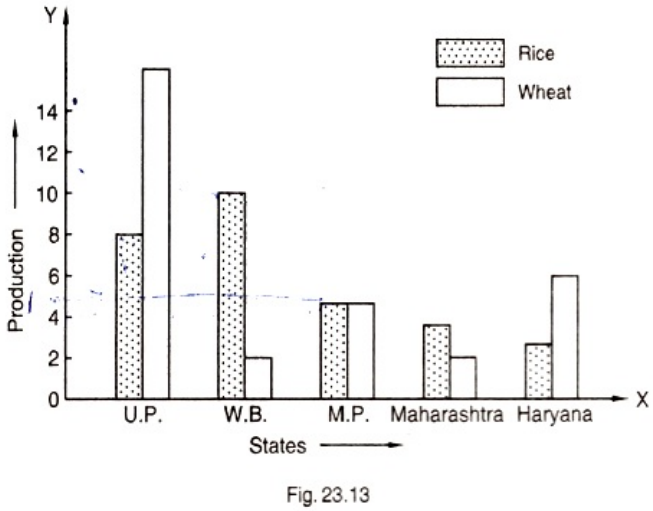


Fig. 23.13

(i) What information is given by the bar graph?

(ii) Which state is the largest producer of rice?

(iii) Which state is the largest producer of wheat?

(iv) Which state has total production of rice and wheat as its maximum?

(v) Which state has the total production of wheat and rice minimum?

Answer

(i) The given information is about rice and wheat production in various states of India.

(ii) West Bengal is the largest producer of rice.

(iii) Uttar Pradesh is the largest producer of wheat.

(iv) The largest production of rice and wheat is in Uttar Pradesh.

(v) The total production of rice and wheat is minimum in Maharashtra.

10. Question

The following bar graph (Fig. 23.14) represents the heights (in cm) of 50 students of Class XI of a particular school. Study the graph and answer the following questions:

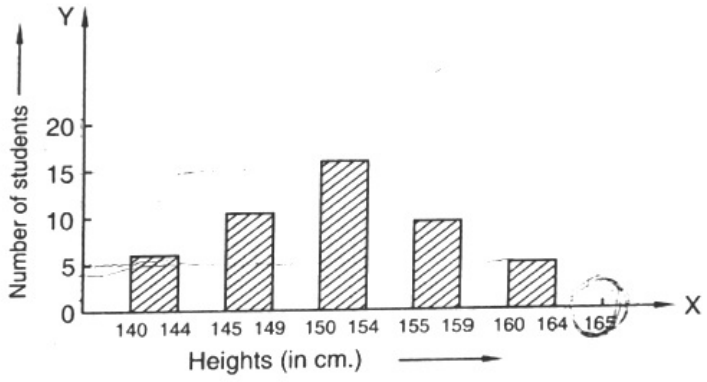


Fig. 23.14

(i) What percentage of the total number of students have their heights more than 149 cm?

(ii) How many students in the class are in the range of maximum height of the class?

(iii) The school wants to provide a particular type of tonic to each student below the height of 150 cm to improve his height. If the cost of the tonic for each student comes out to be Rs. 55, how much amount of money is required?

(iv) How many students are in the range of shortest height of the class?

(v) State whether true or False:

(a) There are 9 students in the class whose heights are in the range of 155-159 cm.

(b) Maximum height (in cm) of a student in the class is 17.

(c) There are 29 students in the class whose heights are in the range of 145-154 cm.

(d) Minimum height (in cm) of a student is the class is in the range of 140-144 cm.

(e) The number of students in the class having their heights less than 150 cm is 12.

(f) There are 14 students each of whom has height more than 154 cm.

Answer

(i) The total number of students that have their height more than 149 cm = 16 + 15 + 5 = 31

The % of students that have their height more than 149 cm

$= \frac{31}{50} \times 100$

= 62%

(ii) The number of students in range of maximum height of the class = 5

(iii) Total number of students below height of 150 cm

= 7 + 12

= 19

The cost of the tonic for each student = Rs. 55

The cost of the tonic for 19 student = 55 × 19

= Rs. 1045

(iv) The number of students that are in the range of shortest height of the class = 7

(v) (a) The statement is true.

(b) The given statement is false.

(c) The total number of students in the range of 145 - 154

= 12 + 17

= 29

So, the given statement is true.

(d) The given statement is true.

(e) The given statement is false.

(f) The number of students whose height is more than 154 cm

= 9 + 5

= 14

So, the given statement is true.

11. Question

Read the following bar graph (Fig. 23.15) and answer the following questions:

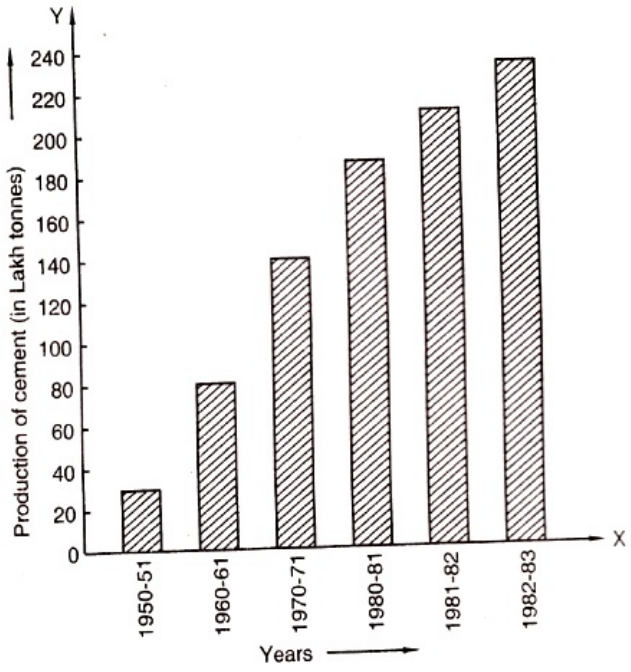


Fig. 23.15 Bar graph of the industrial production of cement in different years in India

(i) What information is given by the bar graph?

(ii) What was the production of cement in the year 1980-81?

(iii) What is the minimum and maximum production of cement and corresponding years?

Answer

(i) It gives information regarding industrial production of cement in different years in India.

(ii) The production of cement in the year 1980-81 = 186 lakh tonnes.

(iii) The minimum production is 1530 lakh tonnes in 1950-51 and maximum production 232 lakh tonnes 1982-83.

12. Question

The bar graph shown in Fig. 23.16 represents the circulation of newspapers in 10 languages.

Study the bar graph and answer the following questions:

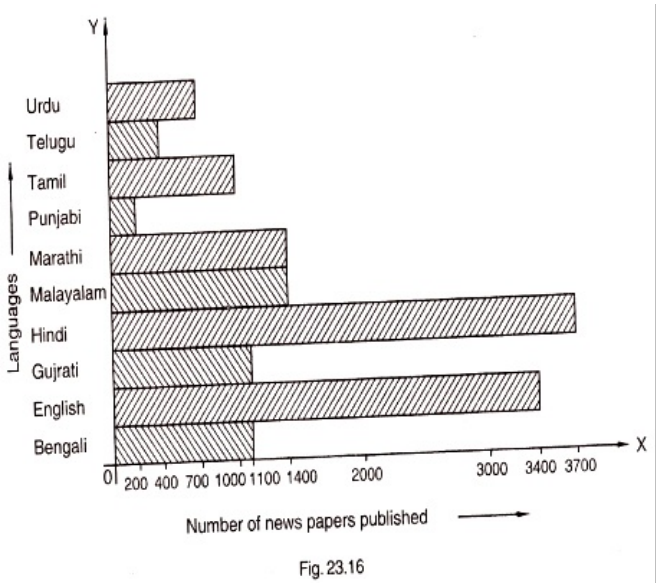


Fig. 23.16

(i) What is the total number of newspapers published in Hindi, English, Urdu, Punjabi and Bangali?

(ii) What percent is the number of newspapers published in Hindi of the total number of newspapers?

(iii) Find the excess of the number of newspapers published in English over those published in Urdu.

(iv) Name two pairs of languages which publish the same number of newspapers.

(v) State the language in which the smallest number of newspapers are published.

(vi) State the language in which the largest number of newspapers are published.

(vii) State the language in which the number of newspapers published is between 2500 and 3500.

(viii) State whether true or False:

(a) The number of newspapers published in Malayalam and Marathi together is less than those published in English.

(b) The number of newspapers published in Telugu is more than those published in Tamil.

Answer

(i) Total numbers of newspapers published in Hindi, English, Urdu, Punjabi and Bengali = 3700 + 3400 + 700 + 200 + 1100

= 9100

(ii) The number of newspapers published in Hindi = 3700

The total number of newspapers are = 700 + 400 + 100 + 200 + 1400 + 1400 + 3700 + 1100 + 3400 + 1100

= 14400

The percent of Hindi newspapers = $\frac{3700}{14400} * 100$

= 25.69

(iii) The excess of no. of newspapers published in English over those published in Urdu

= 3400 – 700

= 2700

(iv) Bengali, Gujarati, Marathi and Malayam are the two pairs of languages which publish in the same no. of newspapers.

(v) Punjabi is the language in which the smallest no. of newspapers are published.

(vi) Hindi is the language in which the largest no. of newspapers were published.

(vii) English is the language in which the no. of newspapers were published in between 2500 and 3500.

(viii) (a) Total no. of newspapers were published in Malayam and Marathi = 1400 + 1400

= 2800

No. of newspapers were published in English = 3400

Therefore, the no. of newspapers published in Malayam and Marathi is less than those published in English.

So, the given statement is true.

(b) No. of Newspapers published in Telugu is 600 less than those published in Tamil. So, the given statement is false.

13. Question

Read the bar graph given in Fig. 23.17 and answer the following questions:

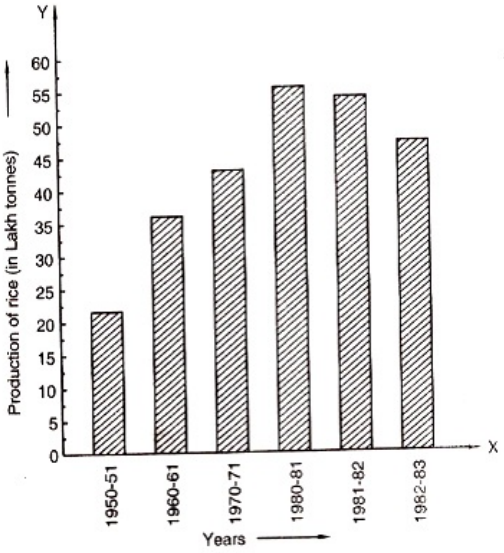


Fig. 23.17 Bar graph of the production of rice crop in India in different years

(i) What information is given by the bar graph?

(ii) What was the crop-production of rice in 1970-71?

(iii) What is the difference between the maximum and minimum production of rice?

Answer

(i) It gives information regarding the production of rice crop in India in different years.

(ii) The crop production of rice in 1970-71 = 42.5 lakh tonnes.

(iii) The difference between the maximum and minimum production of rice = 55 – 22

= 33 lakh tonnes

14. Question

Read the bar graph given in Fig. 23.18 and answer the following questions:

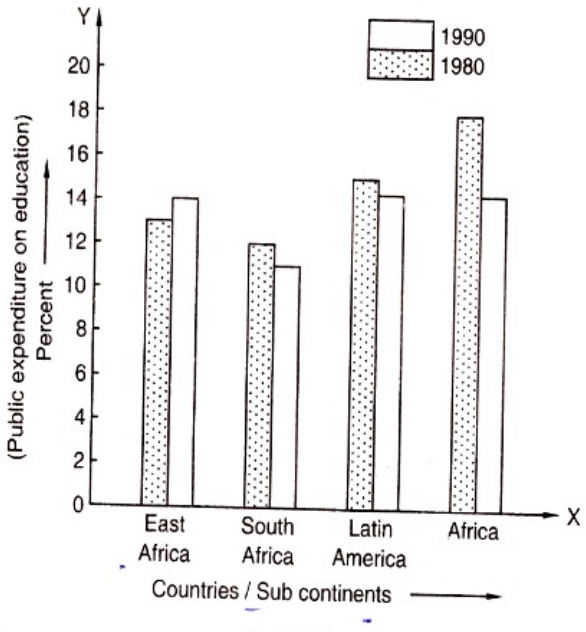


Fig. 23.18

(i) What information does it give?

(ii) In which part the expenditure on education is maximum in 1990?

(iii) In which part the expenditure has gone up from 1980 to 1990?

(iv) In which part the gap between 1980 and 1990 is maximum?

Answer

(i) It gives the information about the public expenditure on education by various states sub continents.

(ii) In Africa the expenditure education is maximum in 1980.

(iii) In East Africa the expenditure has gone by from 1980-90

(iv) In Africa the gap between 1980 and 1990 is maximum.

15. Question

Read the bar graph given in Fig. 23.19 and answer the following questions :

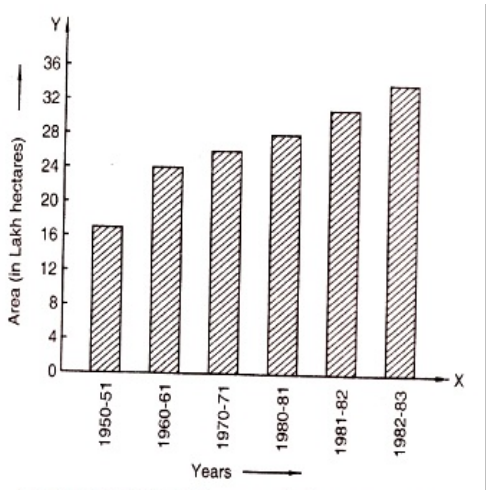


Fig. 23.19 : Bar graph of the area under the sugarcane crop during different years in India

(i) What information is given by the bar graph?

(ii) In which years the areas under the sugarcane crop were the maximum and the minimum?

(iii) State whether true or false:

The area under the sugarcane crop in the year 192-3 is three times that of the year 1950-51.

Answer

(i) It gives the information about the areas under sugarcane crop during different years in India.

(ii) The areas under the sugarcane crops were the maximum and minimum in 1982-83 and 1950-51 respectively.

(iii) The area under sugarcane crop in the year 1982-83 = 34 lakh hectares.

Area under sugarcane crop in the year 1950-51 = 17 lakh hectares.

Clearly, the area under sugarcane crop in the year 1982-83 is not 3 times that of the year 1950-51.

So, the given statement is false.

16. Question

Read the bar graph given in Fig. 23.20 and answer the following questions:

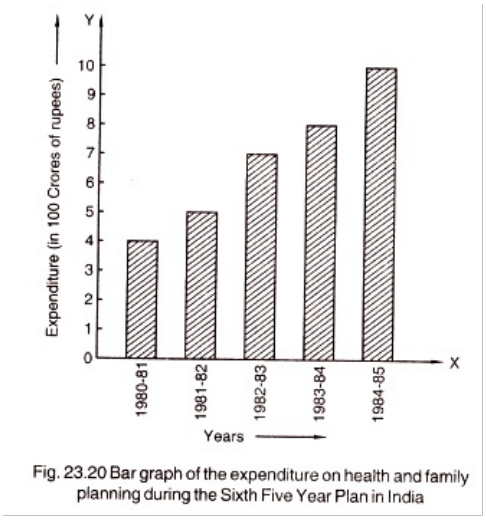


Fig. 23.20 Bar graph of the expenditure on health and family planning during the Sixth Five Year Plan in India

(i) What information is given by the bar graph?

(ii) What was the expenditure on health and family planning in the year 1982-83?

(iii) In which year is the increase in expenditure maximum over the expenditure in previous year? What is the maximum increase?

Answer

(i) It gives the information about the expenditure on health and family planning during 6^{th} five year plan in India.

(ii) The expenditure on health and family planning in the year 1982-83 = rs. 700 crores

(iii) 1984-85 is the year in which the increase in expenditure was maximum over the expenditure in the previous year.

The maximum increase = 1000 – 780

= 220 crores

17. Question

Read the bar graph given in Fig. 23.21 and answer the following questions:

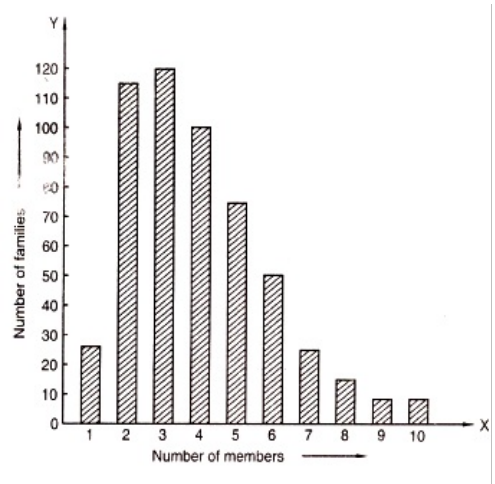


Fig. 23.21 : Bar graph of the number of families with different number of members in a locality

(i) What is the information given by the bar graph?

(ii) What is the number of families having 6 members?

(iii) How many members per family are there in the maximum number of families? Also tell the number of such families.

(iv) What are the number of members per family for which the number of families are equal? Also, tell the number of such families?

Answer

(i) It gives the information about the no. of families with different no. of members in the locality.

(ii) The no. of families having 6 members = 50

(iii) 3 members per family are there in the maximum no. of families. The no. of families which have 3 members = 120

(iv) 9 and 10 are the numbers of members per family for which the number of families are equal. The number of such families is 5.

18. Question

Read the bar graph given in Fig. 23.22 and answer the following questions:

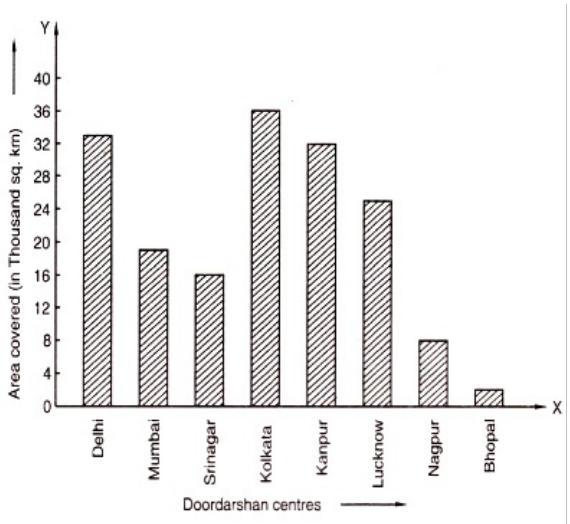


Fig. 23.22 Bar graph showing the coverage of some Doordarshan Centres of India

(i) What information is given by the bar graph?

(ii) Which Doordarshan centre covers maximum area? Also tell the covered area.

(iii) What is the difference between the areas covered by the centres at Delhi and Bombay?

(iv) Which Doordarshan centres are in U.P. State? What are the areas covered by them?

Answer

(i) It gives the information about the overage of some Doordarshan centres of India.

(ii) Kolkata Doordarshan centre covers maximum area which is 36000 square km.

(iii) The difference between the areas covered by the centres of Delhi and Bombay:

33000 – 19000 = 14000 square km

(iv) Kanpur and Lucknow Doordarshan centres are in U.P state. The area covered by Kanpur Doordarshan centre and Lucknow Doordarshan centre are 32000 sq.km and 25000 sq.km

Exercise 23.2

1. Question

Explain the reading and interpretation of bar graphs.

Answer

The first step in reading a bar graph is to Know what does it represent. For this we read the caption which is generally written at the bottom of horizontal line x-axis and adjacent to vertical line y-axis.

After this we understand the scale of the graph in order to know the precise value of the given data.

After reading the bar graph, one must draw conclusions from it. Drawing various conclusions from a given bar graph is referred as the interpretation of the bar graph.

2. Question

Read the following bar graph and answer the following questions:

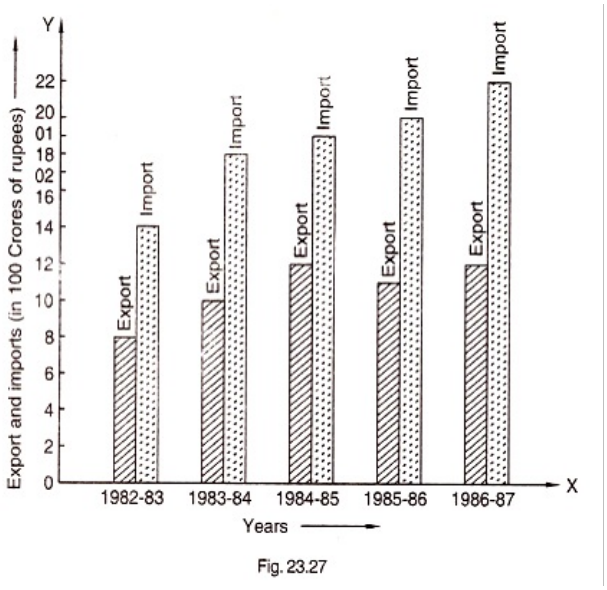


Fig. 23.27

(i) What information is given by the bar graph?

(ii) In which year the export is minimum?

(iii) In which year the import is maximum?

(iv) In which year the difference of the values of exports and imports is maximum?

Answer

(i) It gives the information regarding import and export from 1982-83 to 1986-87

(ii) The export is minimum in the year 1982-83

(iii) The import is maximum in the year 1986-87

(iv) The difference of the values of export and import is maximum in the year 1986-87

3. Question

The following bar graph shows the results of an annual examination in a secondary school.

Read the bar graph (Fig. 23.28) and choose the correct alternative in each of the following:

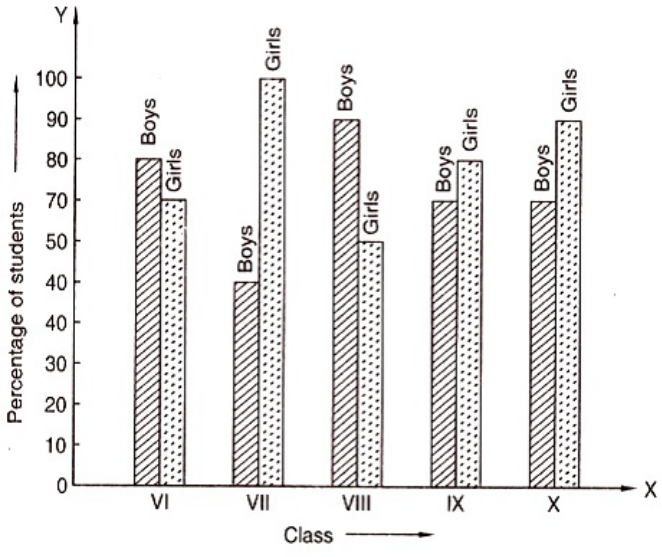


Fig. 23.28

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

(a) VI, VIII (b) VI, IX

(c) VIII, IX (d) VIII, X

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

(a) VII (b) X

(c) IX (d) VIII

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

(a) VI (b) VII

(c) VIII (d) IX

Answer

(i) (b) VI, IX

(ii) (a) VII

(iii) (b) VII

4. Question

The following data gives the number (in thousands) of a 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

Constructut a bar graph to represent the above data

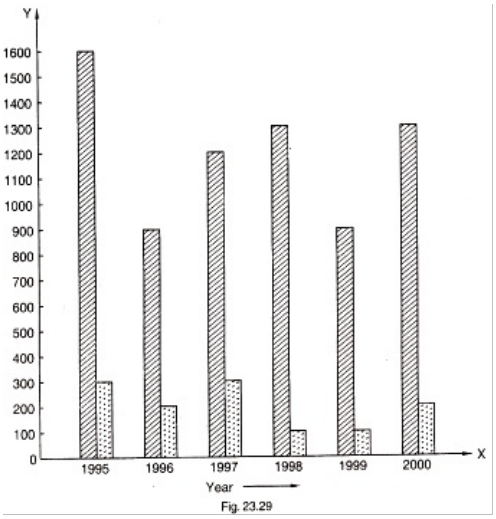
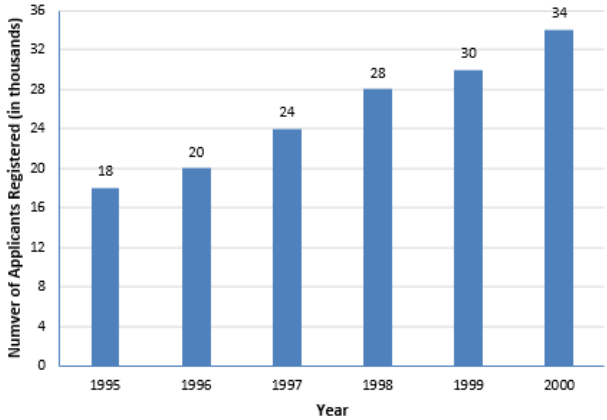


Fig. 23.29

Answer



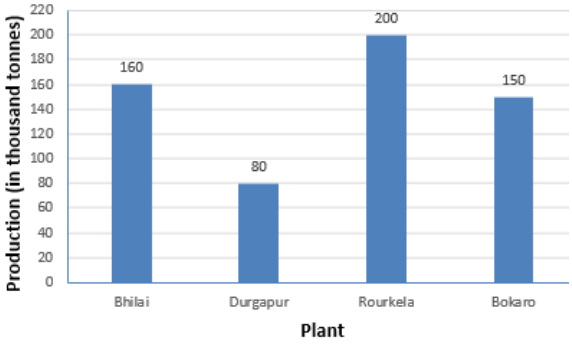
5. Question

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 thousand tonnes)	160	80	200	150

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

Answer



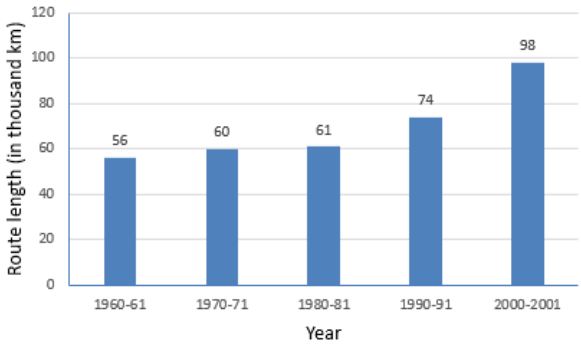
6. Question

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

Represent the above data will the help of a bar graph.

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

Answer



7. Question

The following data gives the amount of loans (in crore of rupees) disbursed by a bank during some years:

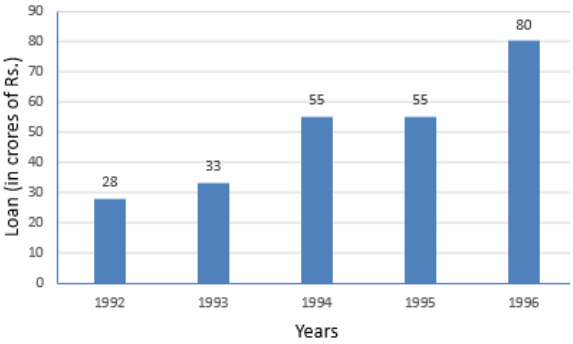
Year	1992	1993	1994	1995	1996
Loan (in crores of Rs.)	28	33	55	55	80

(i) Represent the above date with the help of a bar graph.

(ii) With the help of the bar graph, indicate the year in which amount of loan is not increased over that of the preceding year.

Answer

(i)



(ii) The year in which amount of loan is not increased over that of the preceding year is 1994-95

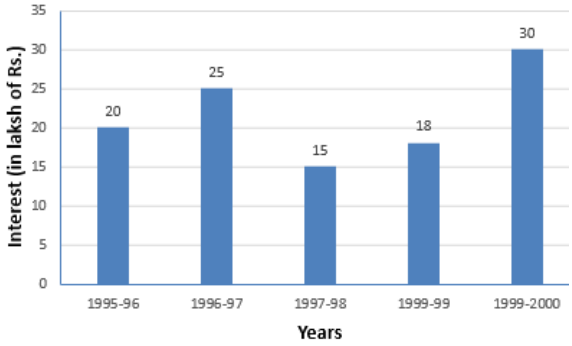
8. Question

The following table shows the interest paid by a company (in lakhs):

Year	1955-96	1996-97	1997-98	1998-99	1999-2000
Interest (In lakhs of Rs.)	20	25	15	18	30

Draw the bar graph to represent the above information.

Answer



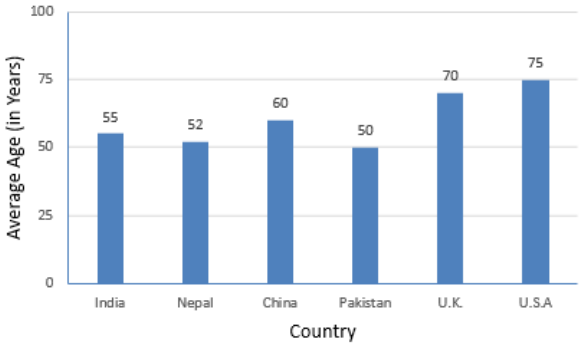
9. Question

The following data shows the average age of men in various countries in a certain year:

Country	India	Nepal	China	Pakistan	U.K.	U.S.A
Average Age (in years)	55	52	60	50	70	75

Represent the above information by a bar graph.

Answer



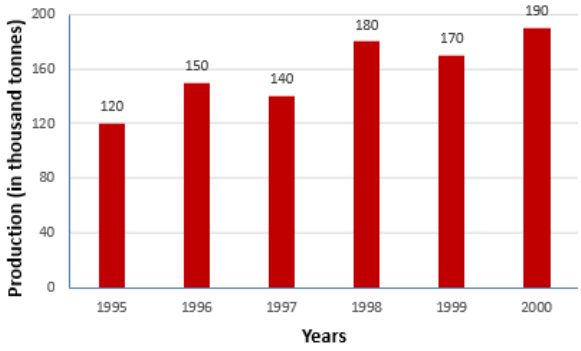
10. Question

The following data gives the production of food grain (in thousand tonnes) for some years:

Year	1995	1996	1997	1998	1999	2000
Production (in thousand Tonnes)	120	150	140	180	170	190

Represent the above data with the help of a bar graph.

Answer



11. Question

The following data gives the amount of manure (in thousand tonnes) manufactured by a company during some years:

Year	1992	1993	1994	1995	1996	1997
Manure (in thousand tonnes	15	35	45	30	40	20

(i) Represent the above data with the help of a bar graph.

(ii) Indicate with the help of the bar graph the year in which the amount of manufactured by the company was maximum.

(iii) Choose the correct alternative:

The consecutive years during which there was maximum decrease in manure production are:

(a) 1994 and 1995

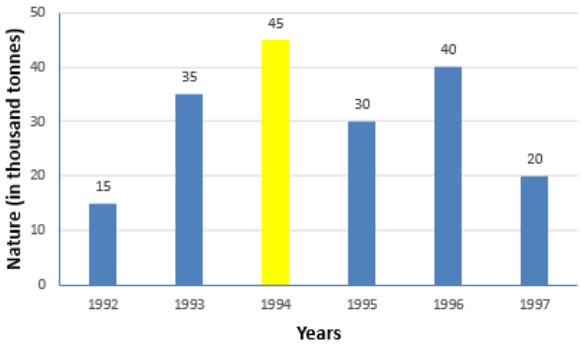
(b) 1992 and 1993

(c) 1996 and 1997

(d) 1995 and 1996

Answer

(i) & (ii)



(iii) (c) 1996 and 1997

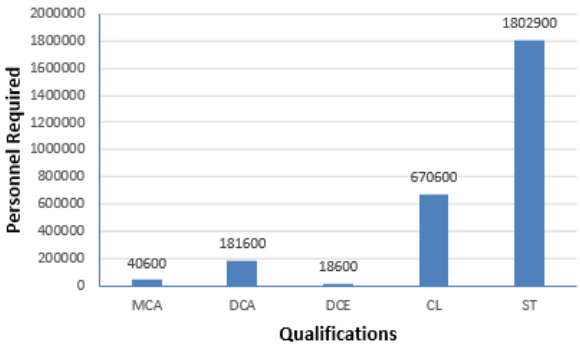
12. Question

The following data gives the demand estimates of the Government of India, Department of Electronics for the personnel in the computer sector during the Eighth Plan period (1990-95):

Qualifications	MCA (Master in Computer Application)	DCA (Diploma in computer application	DCE (Diploma in Computer Engineering	CL (Certificate Level Course)	ST (Short term Course)
Personnel Required	40600	181600	18600	670600	1802900

Represent the data with the help of a bar graph. Indicate with the help of the bar graph the course where estimated requirement is least.

Answer



13. Question

The income and expenditure for 5 years of a family is given in the following data:

Years	1995-96	1996-97	1997-98	1998-99	1999-2000
Income (Rs. in thousands	100	140	150	170	210
Expenditure (Rs. in Thousands)	80	130	145	160	190

Represent the above data by a bar graph.

Answer

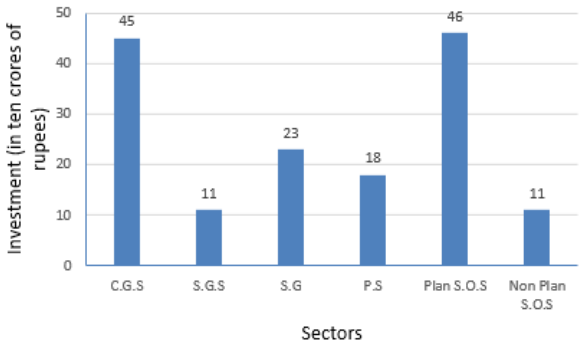
14. Question

The investment (in ten crores of rupees) of Life Insurance Corporation of India in different sectors are given below:

Sectors	Investment (in ten crores of rupees)
Central Govt. Securities	45
State Govt. Securities	11
Securities guaranteed by the Govt.	23
Private sectors	18
Socially oriented sectors (plan)	46
Socially oriented sectors (Non plan)	11

Represent the above data with the help of a bar graph.

Answer



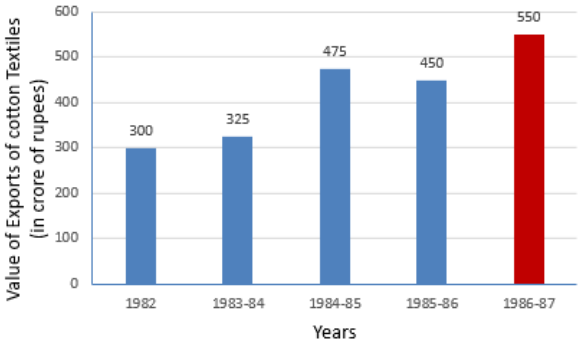
15. Question

The following data gives the value (in crores of rupees) of the Indian export of cotton textiles for different years:

Years	1982	1983-84	1984-85	1985-86	1986-87
Value of Exports of Cotton Textiles (in crore of rupees)	300	325	475	450	550

Represent the above data with the help of a bar graph. Indicate with the help of a bar graph the year in which the rate of increase in exports is maximum over the preceding year.

Answer



16. Question

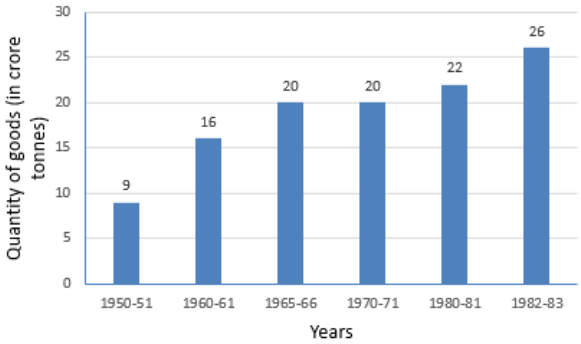
The following table gives the quantity of goods (in crore tonnes).

Year	1950-51	1960-61	1965-66	1970-71	1980-81	1982-83
Quantity of goods (in crore tonnes).	9	16	20	20	22	26

Represent this information with the help of a bar graph.

Explain through the bar graph if the quantity of goods carried by the Indian Railway in 1965-66 is more than double the quantity of goods carried in the year 1950-51.

Answer



Yes, the quantity of goods carried by the Indian Railway in 1965-66 is more than double the quantity of goods carried in the year 1950-51

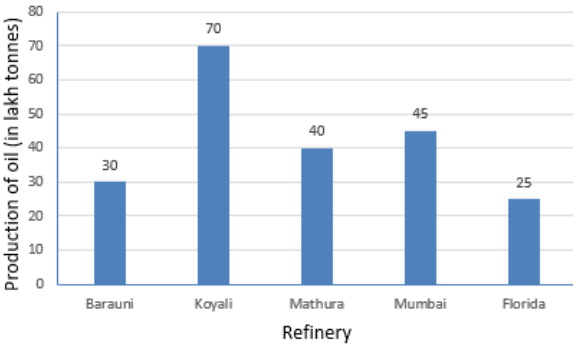
17. Question

The production of oil (in lakh tonnes) in some of the refineries in India during 1982 was given below:

Refinery	Barauni	Koyali	Mathura	Mumbai	Florida
production of oil (in lakh tonnes)	30	70	40	45	25

Construct a bar graph to represent the above data so that the bars are drawn horizontally.

Answer



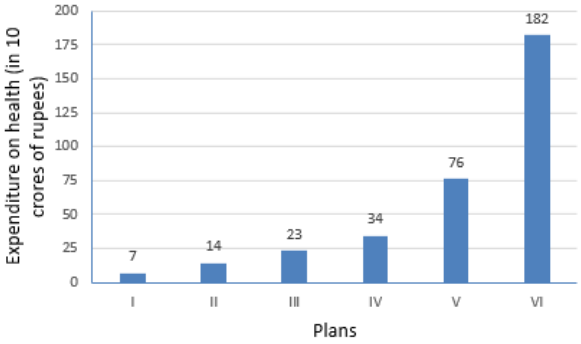
18. Question

The expenditure (in 10 crores of rupees) on health by the Government of India during the various five year plans is shown below:

Plans :	I	II	III	IV	V	VI
Expenditure On health (in 10 crores of rupees)	7	14	23	34	76	182

Construct a bar graph to represent the above data.

Answer



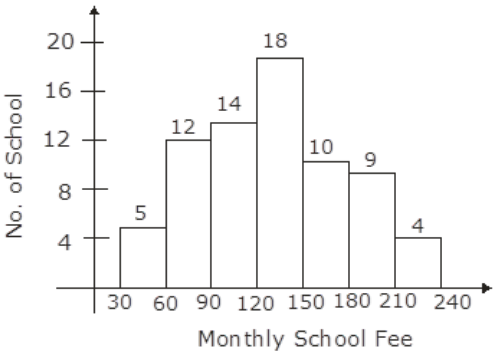
Exercise 23.3

1. Question

Construct a histogram for the following data:

Monthly school Fee (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

Answer

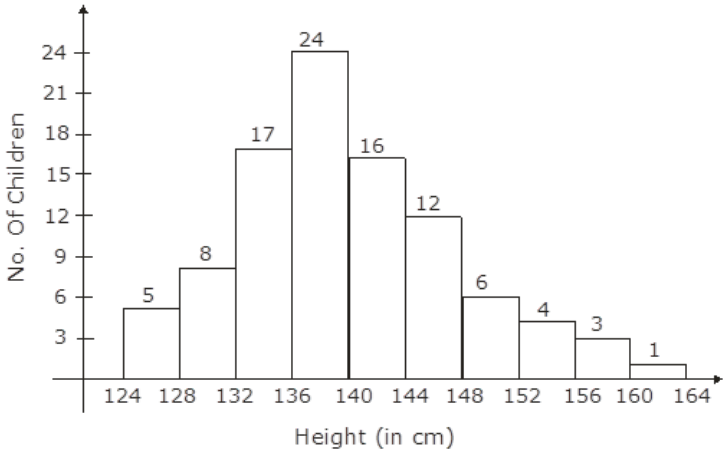


2. Question

The distribution of heights (in cm) of 96 children is given below. Construct a histogram and a frequency polygon on the same axes.

Height (in cm)	124 to 128	128 to 132	132 to 136	136 to 140	140 to 144	144 to 148	148 to 152	152 to 156	156 to 160	160 to 164
No. Of children	5	8	17	24	16	12	6	4	3	1

Answer



3. Question

The time taken, in seconds, to solve a problem by each of 25 pupiles is as follows:

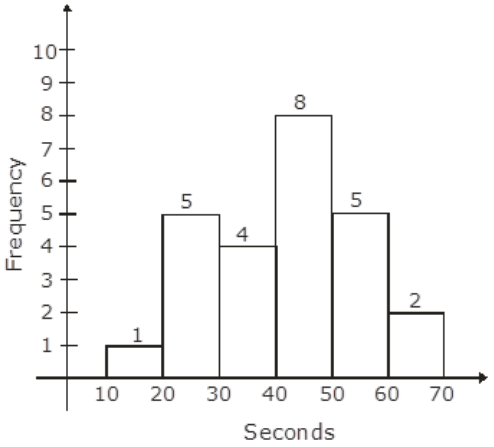
16, 20, 26, 27, 28, 30, 33, 37, 38, 40, 42, 43, 46, 46, 46, 48, 49, 50, 53, 58, 59, 60, 64, 52, 20

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

(b) Draw a histogram to represent the frequency distribution.

Answer

Seconds	Frequency
10-20	1
20-30	5
30-40	4
40-50	8
50-60	5
60-70	2

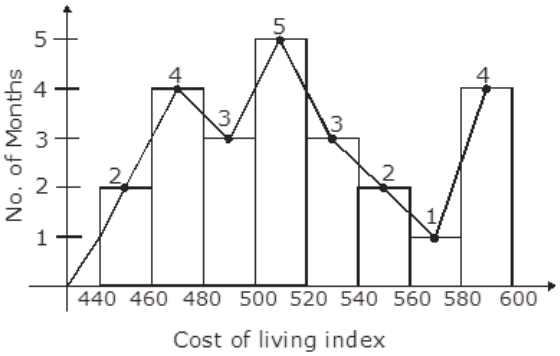


4. Question

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

Cost of living index	440-460	460-480	489-500	500-520	520-540	540-560	560-580	580-600
No. of months:	2	4	3	5	3	2	1	4

Answer



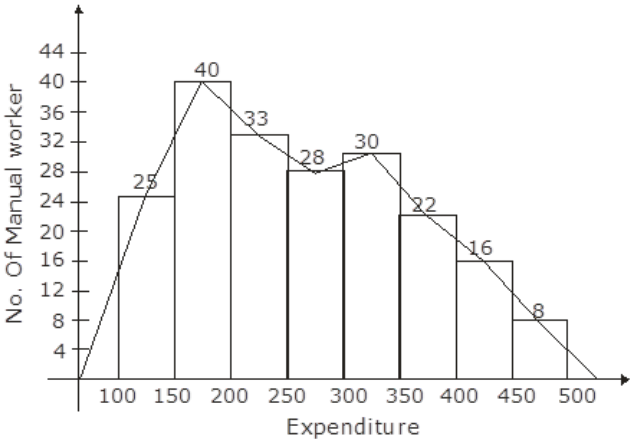
5. Question

The following is the distribution of total household expenditure (in Rs.) of manual worker in a city:

Expenditure (in Rs.)	100-150	150-200	200-250	250-300	300-350	350-400	400-450	450-500
No. of manual worker	25	40	33	28	30	22	16	8

Draw a histogram and a frequency polygon representing the above data.

Answer



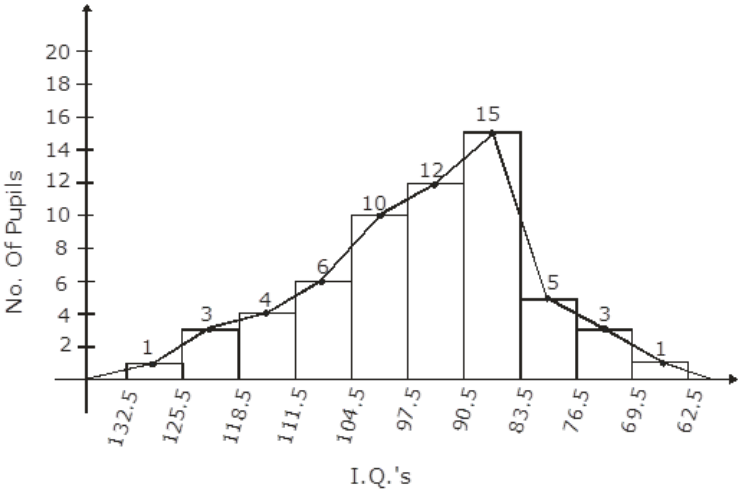
6. Question

The following table gives the distribution of IQ's (intelligence quotients) of 60 pupils of class V in a school.

IQ's	125.5 To 132.5	118.5 To 125.5	111.5 To 118.5	104.5 To 111.5	97.5 To 104.5	90.5 To 97.5	83.5 To 90.5	76.5 To 83.5	69.5 To 76.5	62.5 To 69.5
No. of pupils	1	3	4	6	10	12	15	5	3	1

Draw a frequency polygon for the above data.

Answer

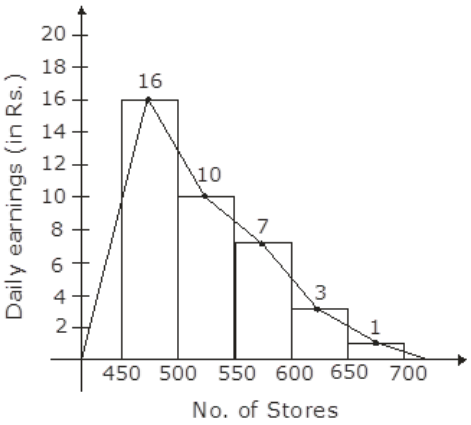


7. Question

Draw a histogram for the daily earnings of 30 drug stores in the following table:

Daily earnings (in Rs.)	450-500	500-550	550-600	600-650	650-700
Number of stores:	16	10	7	3	1

Answer



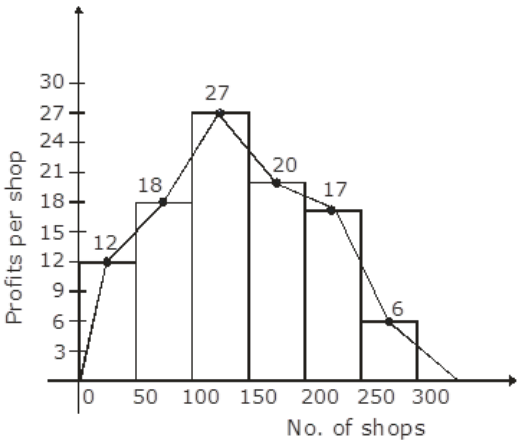
8. Question

The monthly profits (in Rs.) of 100 shops are distributed as follows:

Profits per shop:	0-50	50-100	100-150	150-200	200-250	250-300
No. of Shops:	12	18	27	20	17	6

Draw a histogram for the data and show the frequency polygon for it.

Answer



CCE - Formative Assessment

1. Question

Which one of the following is not the graphical representation of statistical data:

A. Bar graph

B. Histogram

C. Frequency polygon

D. Cumulative frequency distribution

Answer

Technically, a cumulative frequency distribution is the sum of the class and all classes below it in a frequency distribution.

2. Question

In a frequency distribution, gives are graphical representations of

A. Frequency

B. Relative frequency

C. Cumulative frequency

D. Raw data

Answer

An o-give (oh-jive), sometimes called a cumulative frequency polygon, is a type of frequency polygon that shows cumulative frequencies. An o-give graph plots cumulative frequency on the y-axis and class boundaries along the x-axis.

3. Question

A frequency polygon is constructed by lotting frequency of the class interval and the

A. Upper limit of the class

B. Lower limit of the class

C. Mid value of the class

D. Any values of the class

Answer

A frequency polygon is a type of line graph that shows the frequency of a mutually exclusive event occurring. Seeing the data in this format helps us visualize and understand it better. All frequency polygons must have a title, x-axis, y-axis, and data points with a line connecting them.

4. Question

In a histogram the area of each rectangle is proportional to

A. The class mark of the corresponding class interval

B. The class size of the corresponding class interval

C. Frequency of the corresponding class interval

D. Cumulative frequency of the corresponding class interval

Answer

A histogram is a display of statistical information that uses rectangles to show the frequency of data items in successive numerical intervals of equal size. In the most common form of histogram, the independent variable is plotted along the horizontal axis and the dependent variable is plotted along the vertical axis.

5. Question

In the ‘less than’ type of give the cumulative frequency is plotted against

A. The lower limit of the concerned class interval

B. The upper limit of the concerned class interval

C. The mid-value of the concerned class interval

D. Any value of the concerned class interval

Answer

In a less than o-give we plot the points with the upper limits of the class as abscissae and the corresponding less than cumulative frequency as ordinates. It is a rising curve.

6. Question

In a histogram the class intervals or the groups are taken along

A. Y-axis

B. X-axis

C. Both of X-axis and Y-axis

D. In between X and Y axis

Answer

Histogram states that a two dimensional frequency density diagram is called as a histogram. The histograms are diagrams which represent the class interval and the frequency in the form of a rectangle. There will be as many adjoining rectangles as there are class intervals.

7. Question

A histogram is a pictorial representation of the grouped data in which class intervals and frequency are respectively taken along

A. Vertical axis and horizontal axis

B. Vertical axis only

C. Horizontal axis only

D. Horizontal axis and vertical axis

Answer

In a histogram the class limits are marked on the horizontal axis and the frequency is marked on the vertical axis. Thus, a rectangle is constructed on each class interval.

8. Question

In a histogram, each class rectangle is constructed with base as

A. Frequency

B. Class-intervals

C. Range

D. Size of the class

Answer

In a histogram the class limits are marked on the horizontal axis that constitutes as a base of the so formed rectangle.