Chapter 7 Statistics

Very Short Answer Type Questions

Q1. Mean of 20 observations is 17. If in the observations, observation 40 is replaced by 12, find the new mean. [CBSE-14-ERFKZ8H]

Answer. Since mean of 20 observations is 17
Sum of the 20 observations = 17 x 20 = 340
New sum of 20 observations = 340 – 40 + 12 = 312
Newmean=312 / 20 =15.6

Q2. If the mean of the data $x_1, x_2, x_3 \ldots\ldots\ldots\ldots x_n$ is $\bar{x}$,then find the mean of αx_1, αx_2, $\alpha x_3 \ldots\ldots\ldots\ldots \alpha x_n$.

Answer.

$$\text{Mean of } \alpha x_1,\ \alpha x_2,\ \alpha x_3,\ \ldots,\ \alpha x_n = \frac{\alpha x_1 + \alpha x_2 + \alpha x_3 + \ldots + \alpha x_n}{n}$$

$$= \frac{\alpha(x_1 + x_2 + x_3 + \ldots + x_n)}{n} = \alpha \bar{x}$$

Q3. Mean of 36 observations is 12. One observation 47 was misread as 74. Find the correct mean. [CBSE-14-17DIG1U]

Answer. Mean of 36 observations = 12
Total of 36 observations = 36 x 12 = 432
Correct sum of 36 observations = 432 – 74 + 47 = 405
Correct mean of 36 observations = 405/ 36 =11.25

Q4. If the mean of five observations x, x + 2, x + 4, x + 6, x + 8 is 11, then write the value of x.

Answer.

$$\frac{x + x + 2 + x + 4 + x + 6 + x + 8}{5} = 11$$

$$5x + 20 = 55$$

$$5x = 35 \Rightarrow x = 7$$

Q5. Determine the mean of first 10 natural numbers.

Answer. First ten natural numbers are 1, 2, 3. 4, 5, 6, 7, 8, 9 and 10

$$\text{Mean} = \frac{1+2+3+4+5+6+7+8+9+10}{10} = \frac{55}{10} = 5.5$$

Q6. Find the mean of x, x + 2, x + 4, x + 6, x + 8.

Answer.

$$\text{Mean} = \frac{x + x + 2 + x + 4 + x + 6 + x + 8}{5} = \frac{5x + 20}{5} = x + 4$$

Q7. Write the class mark of an interval 90 – 120.

Answer. Classmark= (90+120)/ 2 = 210 / 2 =105

Q8. The mean of 8 observations is 40. If 5 is added to each observation, then what will be the new mean ?

Answer.

Let the 8 observations are $x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8$

$\therefore x_1 + x_2 + x_3 + x_4 + x_5 + x_6 + x_7 + x_8 = 40 \times 8 = 320$

$$\text{New mean} = \frac{320 + 5 \times 8}{8} = \frac{360}{8} = 45$$

Q9. Find the range of the given data : 25, 18, 20, 22, 16, 6, 17, 15, 12, 30, 32, 10, 19, 8, 11, 20

Answer. Here, the minimum and maximum values of given data are 6 and 32 respectively.
Range = 32 – 6 = 26

Q10. There are 50 numbers. Each number is subtracted from 53 and the mean of the numbers so obtained is found to be – 3.5. Find the mean of the given numbers.

Answer.

Let x be the mean of 50 numbers.

$\therefore$ Sum of 50 numbers $= 50x$

Since each number is subtracted from 53.

According to question, we have

$$\frac{53 \times 50 - 50x}{50} = -3.5$$

$$\Rightarrow \quad 2650 - 50x = -175 \Rightarrow 50x = 2825$$

$$\Rightarrow \quad x = \frac{2825}{50} = 56.5$$

Q11. Find the median of the values 37, 31, 42, 43, 46, 25, 39, 45, 32.

Answer. Arranging the data in ascending order, we have 25, 31, 32, 37, 39, 42, 43, 45, 46 Here, number of observations = 9 (odd)

$$\text{Median} = \text{Value of } \left(\frac{9+1}{2}\right)^{\text{th}} \text{ observation}$$

$$= \text{Value of } 5^{\text{th}} \text{ observation} = 39$$

Q12. If the median of data (arranged in ascending order) 31, 33, 35, x, x+10, 48, 48, 50 is 40, then find value of x.

Answer.

Given data is 31, 33, 35, x, $x + 10$, 48, 48, 50

Number of observations = 8 (even)

$$\text{Median} = \frac{\text{Value of } \left(\frac{8}{2}\right)^{\text{th}} \text{ observation} + \text{Value of } \left(\frac{8}{2}+1\right)^{\text{th}} \text{ observation}}{2}$$

$$= \frac{\text{Value of } 4^{\text{th}} \text{observation} + \text{Value of } 5^{\text{th}} \text{ observation}}{2}$$

$$= \frac{x+x+10}{2} = x + 5$$

$\therefore \quad x + 5 = 40 \Rightarrow x = 35$

Q13. Find the mode of the following scores : 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, 18

Answer. 14 repeat maximum number of times (4 times) in the given data.
Mode = 14

Q14.To draw a histogram to represent the following frequency distribution :

Class interval	***5-10***	***10-15***	***15-25***	***25-45***	***45-75***
Frequency	***6***	***12***	***10***	***8***	***15***

Find the adjusted frequency for the class 25-45.

Answer.

Adjusted frequency of a class

$$= \frac{\text{Minimum class size of frequency distribution} \times \text{Frequency of given class}}{\text{Class size of given class}}$$

$\therefore$ Adjusted frequency for the class 25-45 $= \frac{5 \times 8}{20} = 2$

Q15. The median of the data 26,56,32,33,60,17,34,29,45 is 33. If 26 is replaced by 62, then find the new median.

Answer. Here, the given data in ascending order is 17, 29, 32, 33, 34, 45, 56, 60, 62

Now, median is $\left(\frac{9+1}{2}\right)^{\text{th}}$ term *i.e.*, 5^{th} term.

Hence, new median is 34.

Short Answer Questions Type-I

Q16. For a particular year, following is the distribution of ages (in years) of primary school teachers in a district:

Age (in years)	***15 - 20***	***20 - 25***	***25 - 30***	***30 - 35***	***35 - 40***	***40 - 45***	***45 - 50***
No. of Teachers	***10***	***30***	***50***	***50***	***30***	***6***	***4***

1. **Write the lower limit of first class interval.**
2. **Determine the class limits of the fourth class interval.**
3. **Find the class mark of the class 45 – 50.**

4. **Determine the class size. [CBSE March 2012]**

Answer.

1. First class interval is 15 – 20 and its lower limit is 15.
2. Fourth class interval is 30 – 35 Lower limit is 30 and upper limit is 35.
3. Class mark of the class 45 – 50 =(45+50)/ 2 =95 / 2 =47.5
4. Class size = Upper limit of each class interval – Lower limit of each class interval
   .•. Here, class size = 20 – 15 = 5

Q17. The class marks of a frequency distribution are 104, 114, 124, 134, 144, 154, 164. Find the class size and class intervals. [CBSE March 2012]

Answer. Since the class marks are equally spaced.
.•. Class size = 114 – 104 = 10

If a is a class mark and h is size of class interval, then lower limit and upper limit of the class interval are $a - \frac{h}{2}$ and $a + \frac{h}{2}$ respectively.

$\therefore$ We have $h = 10$

$\therefore$ Lower limit of first class interval $= 104 - \frac{10}{2} = 99$

Upper limit of first class interval $= 104 + \frac{10}{2} = 109$

$\therefore$ First class interval is 99 – 109

Hence, the class intervals are 99 – 109, 109 – 119, 119 – 129, 129 – 139, 139 – 149, 149 – 159, 159 – 169.

Q18. Find the mean of the following distribution : [CBSE-14-GDQNI3W]

x	5	10	15	20	25
f	4	12	20	28	36

Answer.

x	f	fx
5	4	20
10	12	120
15	20	300
20	28	560
25	36	900
Total	$\Sigma f = 100$	$\Sigma fx = 1900$

Now, mean $(\bar{x}) = \frac{\Sigma fx}{\Sigma f}$

$= \frac{1900}{100} = 19$

Q19. The mean weight per student in a group of 7 students is 55 kg. The individual weights of 6 of them in kg are 52, 54, 55, 53, 56, 54. Find the weight of the seventh student. [CBSE March 2012]

Answer.

$$\bar{x} = \frac{1}{n}(\Sigma x_i) \Rightarrow 55 = \frac{x_1 + x_2 + \ldots + x_7}{7}$$

$$\Rightarrow \quad x_1 + x_2 + \ldots + x_7 = 55 \times 7 = 385$$

$$x_1 + x_2 + \ldots + x_6 = 52 + 54 + 55 + 53 + 56 + 54 = 324$$

$$\therefore \quad x_7 = 385 - 324 = 61 \text{ kg}$$

$\therefore$ Weight of the seventh student is 61 kg.

Q20. Ten observations 6, 14, 15, 17, x + 1, 2x – 13, 30, 32, 34, 43 are written in ascending order. The median of the data is 24. Find the value of x. [NCERT Exemplar Problem]

Answer. Here, the arranged data is 6, 14, 15, 17, x + 1, 2x – 13, 30, 32, 34, 43
Total number of observations = 10

Here, 10 is an even number, therefore, median will be the mean of $\left(\frac{10}{2}\right)$th and $\left(\frac{10}{2}+1\right)$th observation.

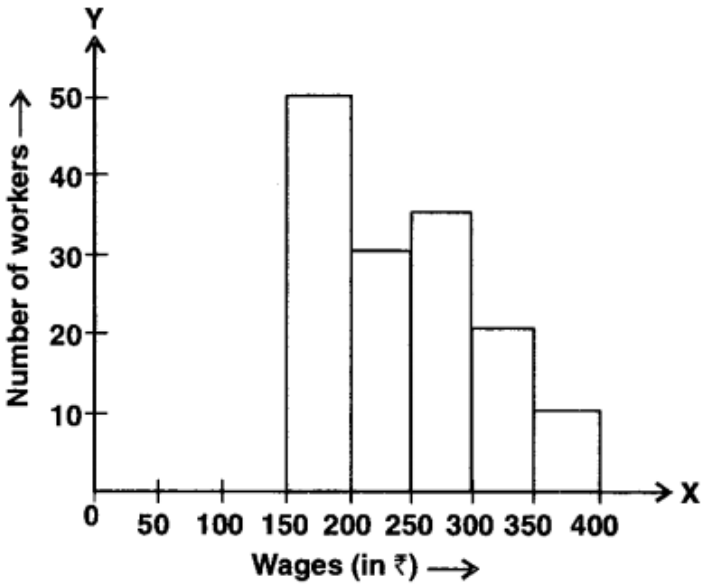
$$\therefore \quad \text{Median} = \frac{5\text{th observation} + 6\text{th observation}}{2} = \frac{x+1+2x-13}{2} = \frac{3x-12}{2}$$

But median of data is 24 (given)

$$\Rightarrow \quad \frac{3x-12}{2} = 24 \Rightarrow 3x - 12 = 48 \Rightarrow 3x = 60 \Rightarrow x = 20$$

$\therefore$ The value of $x = 20$

Q21. In figure, there is a histogram depicting daily wages of workers in d factory. Construct the frequency distribution table. (CBSE March 2013)



Answer.

Class interval	Frequency
150-200	50
200-250	30
250-300	35
300-350	20
350-400	10
Total	145

Q22. Thirty children were asked about the number of hours they watched TV programmes in the previous week. The results were found as follows :
1 6 2 3 5 12 5 8 4 8 10 3 4 12 2
8 15 1 17 6 3 2 5 9 6 8 7 14 12
(i) Make a frequency distribution table for this data, taking class width 5 and one of the class as 5-10.
(ii) How many children watched television for 15 or more than 15 hours a week? [CBSE March 2012]

Answer. (i) Frequency distribution table :

No. of Hours (in a week)	*Tally Marks*	*Frequency*
0 – 5	𝍸 𝍸	10
5 – 10	𝍸 𝍸 |||	13
10 – 15	𝍸	5
15 – 20	||	2
Total		30

(ii) From the above frequency distribution table, we observe that number of children in the class- interval 15 – 20 is 2.
So, 2 children view television for 15 hours or more than 15 hours a week.

Short Answer Questions Type-II

Q23. Given are the scores (out of 25) of 9 students in a Monday test :
14, 25, 17, 22, 20, 19, 10, 8 and 23
Find the mean score and median score of the data. [CBSE-14-GDQNI3W]

Answer.

Ascending order of scores is :

8, 10, 14, 17, 19, 20, 22, 23, 25

$$\text{Now, mean score} = \frac{8+10+14+17+19+20+22+23+25}{9}$$

$$= \frac{158}{9} = 17.5 \text{ marks}$$

$$\text{Median} = \left(\frac{n+1}{2}\right)^{th} \text{ observation because } n \text{ is odd}$$

$$= \left(\frac{9+1}{2}\right)^{th} \text{ observation}$$

$$= 5^{th} \text{ observation}$$

$$= 19 \text{ marks}$$

Q24. The scores of an English test out of 100 of 20 students are given below : 75, 69, 88, 55, 95, 88, 73, 64, 75, 98, 88, 95, 90, 95, 88, 44, 59, 67, 88, 99. Find the median and mode of the data [CBSE-14-17DIG1U]

Answer. Ascending order of given data is as given below :

44, 55, 59, 64, 67, 69, 73, 75, 75, 88, 88, 88, 88, 88, 90, 95, 95, 95, 98, 99

$$\text{Median} = \text{Mean of } \left(\frac{n}{2}\right)^{th} \text{ and } \left(\frac{n}{2}+1\right)^{th} \text{ observations}$$

$$= \text{Mean of } \left(\frac{20}{2}\right)^{th} \text{ and } \left(\frac{20}{2}+1\right)^{th} \text{ observations}$$

$$= \text{Mean of } (10)^{th} \text{ and } (11)^{th} \text{ observations}$$

$$= \text{Mean of 88 and 88}$$

$$= 88 \text{ marks}$$

Since frequency of 88 marks is maximum *i.e.*, 5

Hence, mode of the data is 88.

Q25. Obtain the mean of the following distribution and also find the mode. [CBSE-14-ERFKZ8H]

Marks obtained (out of 60)	***5***	***15***	***20***	***35***	***40***	***45***	***50***	***60***
No. of students	***7***	***10***	***6***	***8***	***12***	***3***	***5***	***4***

Answer.

Marks obtained (out of 60) (x_i)	No. of Students (f_i)	f_ix_i
5	7	35
15	10	150
20	6	120
35	8	280
40	12	480
45	3	135
50	5	250
60	4	240
Total	$\Sigma f_i = 55$	$\Sigma f_ix_i = 1690$

$$\text{Mean } (\bar{x}) = \frac{\Sigma f_i x_i}{\Sigma f_i}$$

$$= \frac{1690}{55} = 30.73 \text{ marks}$$

Marks obtained by maximum students (12) is 40. Hence, the mode of the data is 40 marks.

Long Answer Type Questions

Q26. A random survey of the number of children of various age groups playing in a park was found as follows :

Age(in years)	*Number of Children*
1 – 2	*5*
2 – 3	*3*
3 – 5	*6*
5 – 7	*12*
7 – 10	*9*
10 – 15	*10*
15 – 17	*4*

Draw a histogram to represent the data above.

Answer. In this question, the class sizes are different. So, calculate the adjusted frequency for each class by using the following formula :

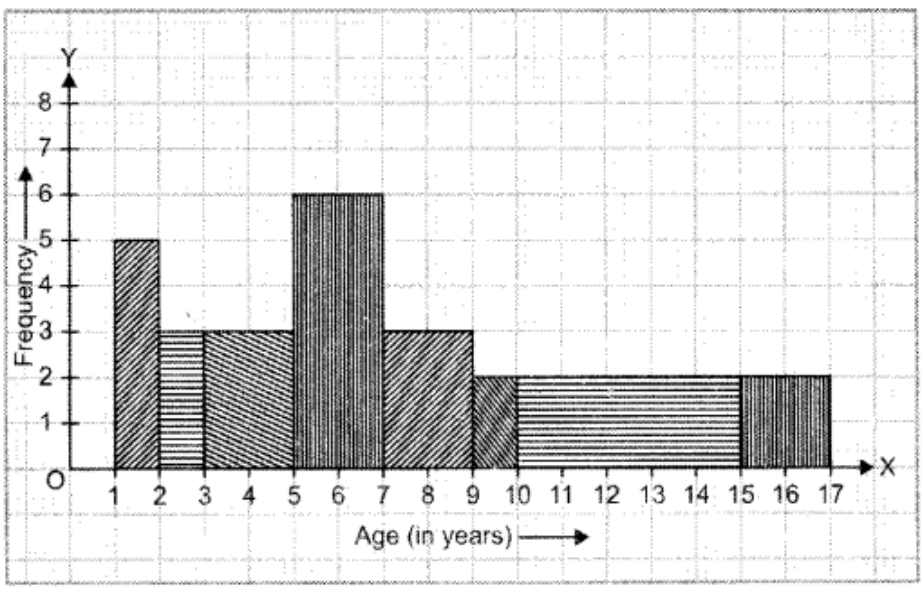
Frequency density or adjusted frequency for a class $= \frac{\text{Minimum class size}}{\text{Class size of this class}} \times \text{Its frequency}$

Here, the minimum class size is $2 - 1 = 1$

$\therefore$ The table of the adjusted frequency is as under :

Age (in years)	*Frequency*	*Adjusted frequency*
1 – 2	5	$\frac{1}{1} \times 5 = 5$
2 – 3	3	$\frac{1}{1} \times 3 = 3$
3 – 5	6	$\frac{1}{2} \times 6 = 3$
5 – 7	12	$\frac{1}{2} \times 12 = 6$
7 – 10	9	$\frac{1}{3} \times 9 = 3$
10 – 15	10	$\frac{1}{5} \times 10 = 2$
15 – 17	4	$\frac{1}{2} \times 4 = 2$

Let us represent the class intervals along X-axis and corresponding adjusted frequencies on Y-axis on a suitable scale.
Now, draw rectangles with the class intervals as bases and the corresponding adjusted frequencies as the heights.
Therefore, the required histogram is as given below :



Q27. In a mathematics test given to 15 students, the following marks (out of 100) are recorded :
41, 39, 48, 52, 46, 62, 54, 40, 96, 52, 98, 40, 42, 52, 60.
Find the mean, median and mode of this data. [CBSE March 2013]

Answer.

For Mean : As we know that

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$$

$$\Rightarrow \quad \bar{x} = \frac{41+39+48+52+46+62+54+40+96+52+98+40+42+52+60}{15}$$

$$\bar{x} = \frac{822}{15} = 54.8 \quad \Rightarrow \quad \bar{x} = 54.8$$

For Median :

First of all arrange the data in the ascending order :

39, 40, 40, 41, 42, 46, 48, 52, 52, 52, 54, 60, 62, 96, 98

Here, $n = 15$, an odd number

$\therefore$ Median is the $\left(\frac{n+1}{2}\right)^{th}$ observation

or the $\left(\frac{15+1}{2}\right)^{th}$ observation or the 8th observation.

$\therefore$ Median $= 52$.

For Mode :

Make a frequency table for given data :

Marks	39	40	41	42	46	48	52	54	60	62	96	98
No. of Students (frequency)	1	2	1	1	1	1	3	1	1	1	1	1

Here, the marks 52 has the maximum frequency '3'.

$\therefore$ Mode $= 52$

Q28. The following two tables gives the distribution of students of two sections according to the marks obtained by them : [CBSE March 2011, 2013]

Section-A		***Section-B***	
Marks	***Frequency***	***Marks***	***Frequency***
0 – 10	***3***	***0 – 10***	***5***
10 – 20	***9***	***10 – 20***	***19***
20 – 30	***17***	***20 – 30***	***15***
30 – 40	***12***	***30 – 40***	***10***
40 – 50	***9***	***40 – 50***	***1***

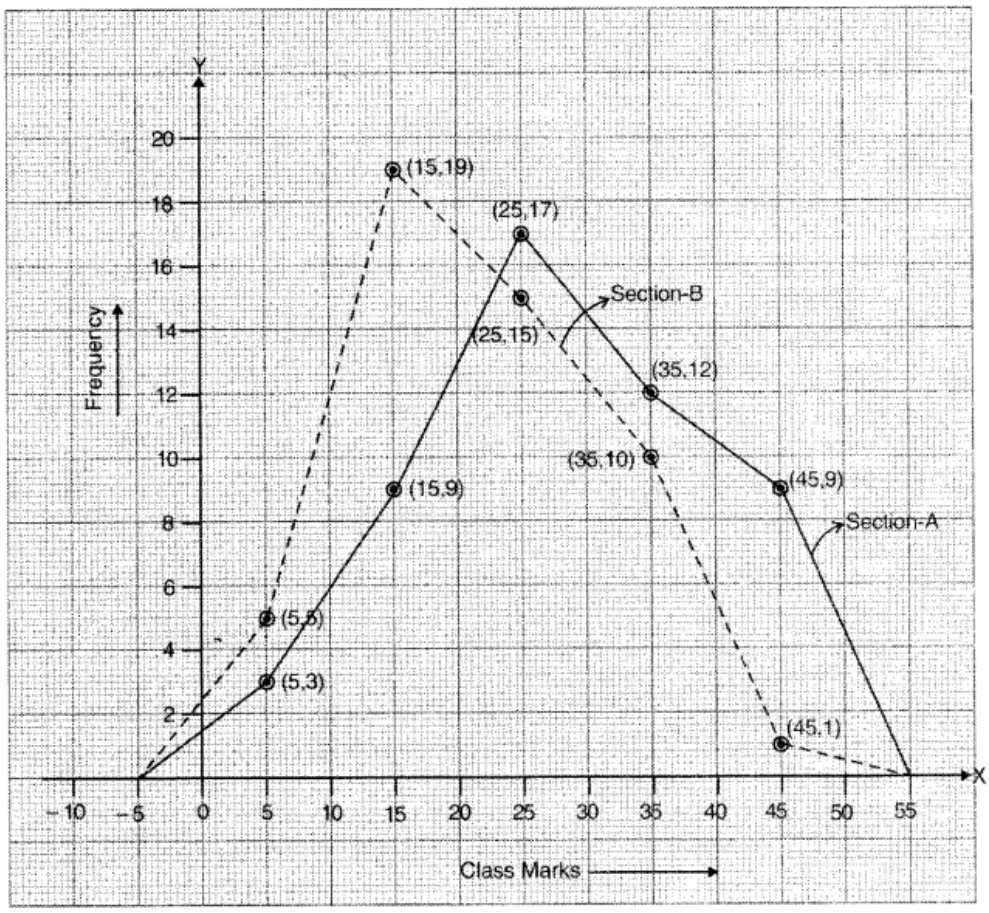
Represent the marks of the students of both the sections on the same graph by two frequency

polygons. From the two polygons compare the performance of the two sections.

Answer. The class marks are as under :

Marks	Class Marks	Section-A Frequency	Section-B Frequency
0 – 10	5	3	5
10 – 20	15	9	19
20 – 30	25	17	15
30 – 40	35	12	10
40 – 50	45	9	1

Let us take class marks on X-axis and frequencies on Y-axis.
To plot frequency polygon of Section-A, we plot the points (5, 3), (15,9), (25,17), (35,12), (45,9) and join these points by line segments.



To plot frequency polygon of Section-B, we plot the points (5,5), (15,19), (25,15), (35,10), (45,1) on the same scale and join these points by dotted line segments.
From the above two polygons, clearly the performance of Section-A is better.

Q29. The following data given the weight (in grams) of 30 oranges picked from a basket:
106 107 76 109 187 95 125 92 70
139 128 100 88 84 99 113 204 141
136 123 90 115 110 97 90 107 75
80 118 82
Construct a grouped frequency distribution table taking class width equal to 20 in such a way that the mid-value of first class in 70.
From the frequency table, find the number of oranges

(i) weighing more than 180 g.
(ii) less than 100 g. [CBSE-14-GDQNI3W]

Answer. Here , class width = 20
class mark = 70
Half of the class width =20 /2 =10
Upper limit of first class interval = 70 + 10 = 80
Lower limit of first class interval = 70 – 10 = 60
Thus, class interval becomes 60 – 80
So, frequency distribution table becomes :

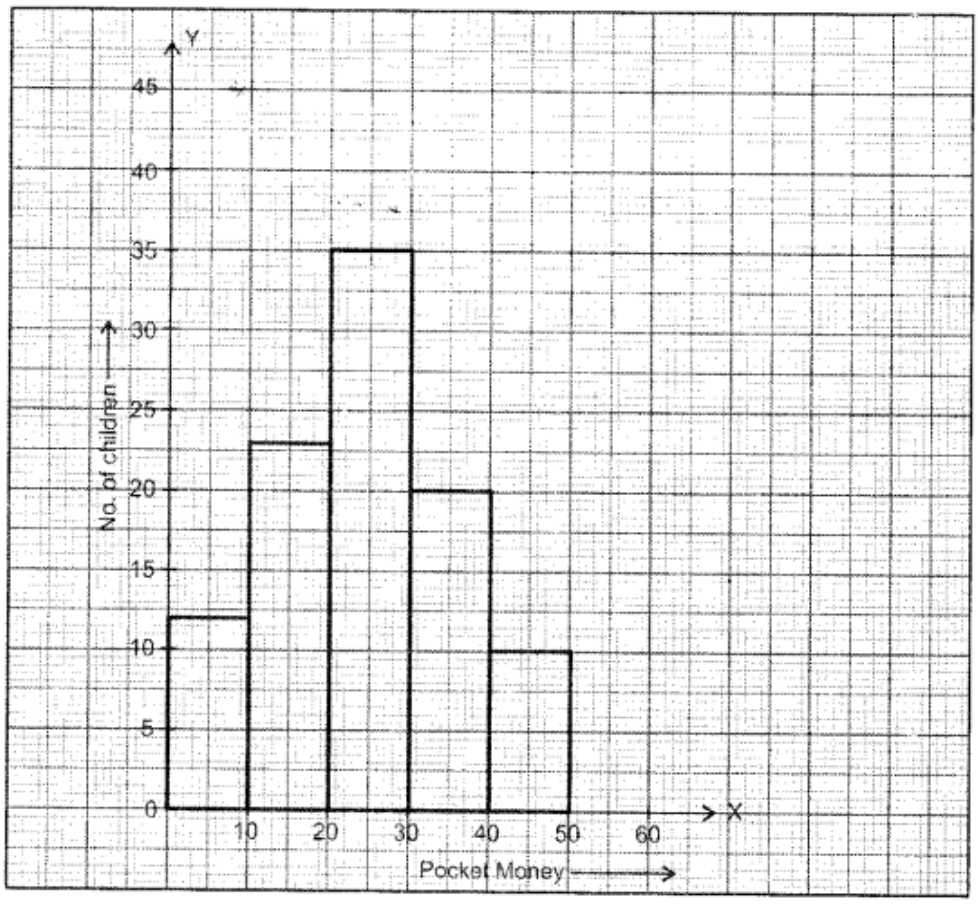
Class Interval	Tally marks	Frequency
60 – 80	|||	3
80 – 100	𝍸 𝍸	10
100 – 120	𝍸 ||||	9
120 – 140	𝍸	5
140 – 160	|	1
160 – 180	—	0
180 – 200	1	1
200 – 220	1	1
Total	30	30

(a) Number of oranges weights more than 180 g = 1 + 1 = 2
(b) Number of oranges weights less than 100 g = 3 + 10 = 13

Q30. The following table gives the pocket money (in Rs) given to children per day by their parents : Represent the data in the form of a histogram. [CBSE-14-ERFKZ8H]

Pocket Money	*0-10*	*10-20*	*20-30*	*30-40*	*40-50*
No. of Children	*12*	*23*	*35*	*20*	*10*

Answer. The required histogram is as below :



Q31. In a school marks obtained by 80 students are given in the table. Draw a histogram. Also, make frequency polygon. [CBSE-14-17DIG1U]

Marks obtained (Mid Value)	*Number of students*
305	*12*
315	*18*
325	*28*
335	*15*
345	*5*
355	*2*

Answer.

Here, class size = 315 – 305 = 10

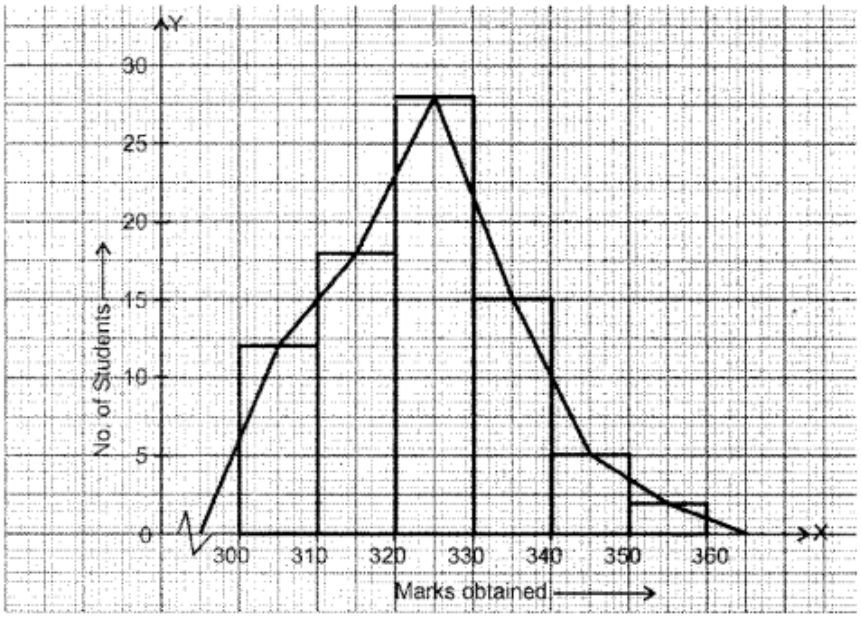
$\therefore$ Lower limit of first class interval is $305 - \frac{10}{2} = 300$

Upper limit of first class interval is $305 + \frac{10}{2} = 310$

Thus, first class interval is 300 – 310

Marks obtained	*Number of students*
300 – 310	12
310 – 320	18
320 – 330	28
330 – 340	15
340 – 350	5
350 – 360	2

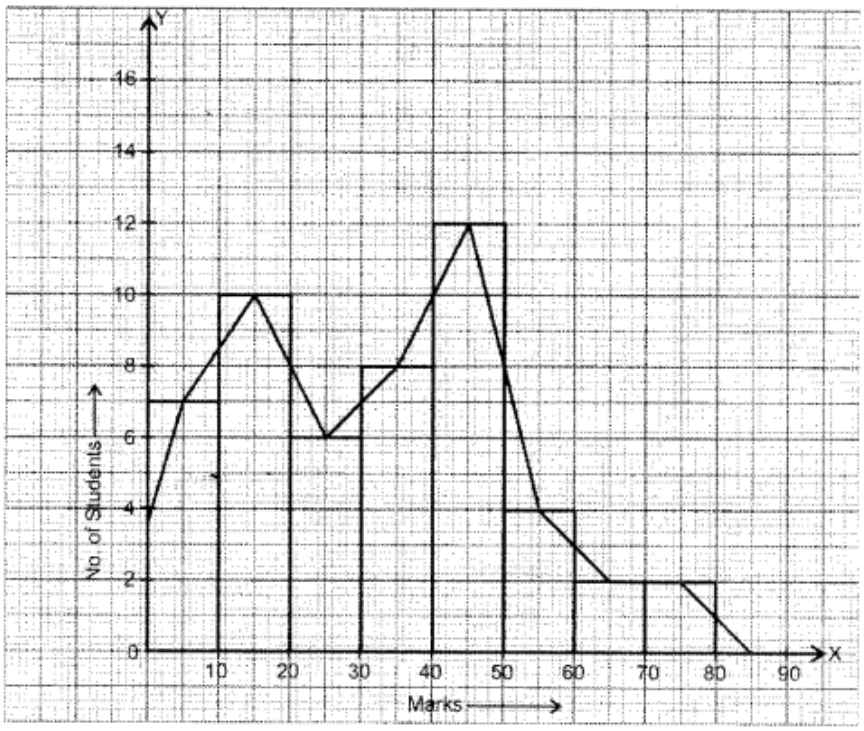
Required histogram and frequency polygon is given on the graph paper.



Q32. Draw a histogram and frequency polygon for the following distribution :

Marks Obtained	*0–10*	*10–20*	*20–30*	*30–40*	*40–50*	*50–60*	*60–70*	*70–80*
No. of Students	*7*	*10*	*6*	*8*	*12*	*3*	*2*	*2*

Answer. We represent class limits along x-axis and number of students along y-axis on a suitable Scale.



Q33. Following is the frequency distribution of total marks obtained by the students of different section of class-IX.

Marks	*100–150*	*150–200*	*200–300*	*300–500*	*500–800*
No. of Students	*60*	*100*	*100*	*80*	*180*

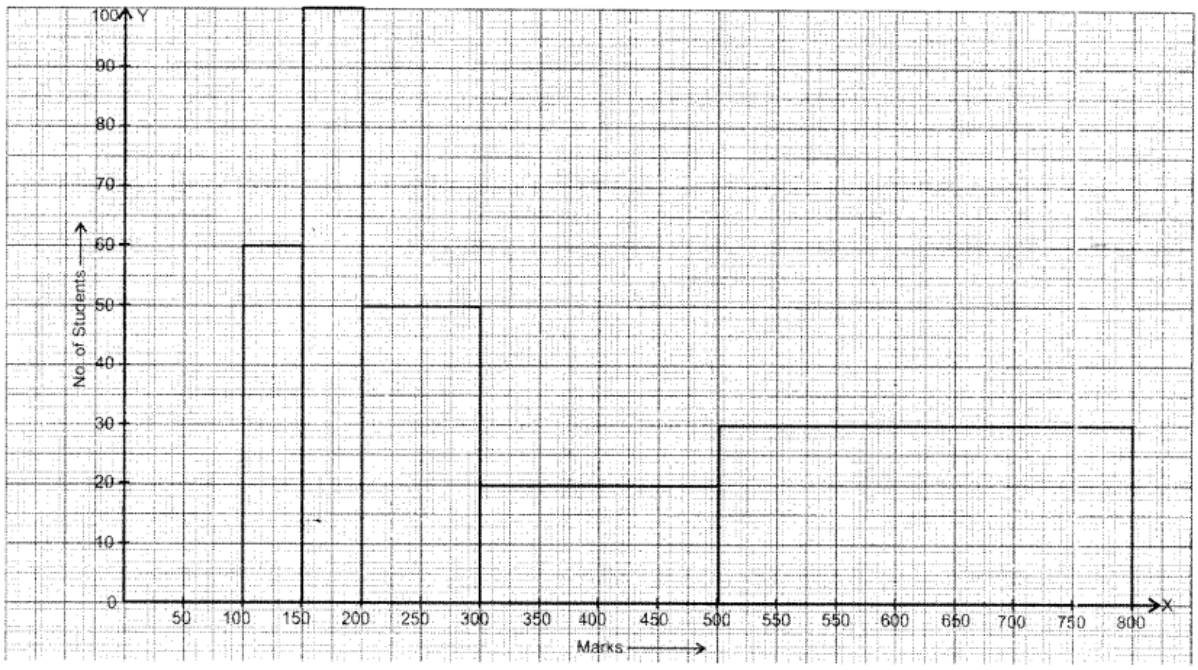
Draw a histogram for the distribution.

Answer. Since class intervals of the given frequency distribution are not of equal width.
We would make modifications in the lengths of the rectangles in the histogram, so that the areas of rectangles are proportional to the frequencies.

$$\text{Adjusted frequency of a class} = \frac{\text{Minimum class size}}{\text{Class size of that class}} \times \text{Frequency of the class}$$

Marks	Frequency	Width of Class	Length of Rectangle
100–150	60	50	$\frac{50}{50} \times 60 = 60$
150–200	100	50	$\frac{50}{50} \times 100 = 100$
200–300	100	100	$\frac{50}{100} \times 100 = 50$
300–500	80	200	$\frac{50}{200} \times 80 = 20$
500–800	180	300	$\frac{50}{300} \times 180 = 30$

Now, we draw rectangles with lengths as given in the last column. The histogram of the data is given below :



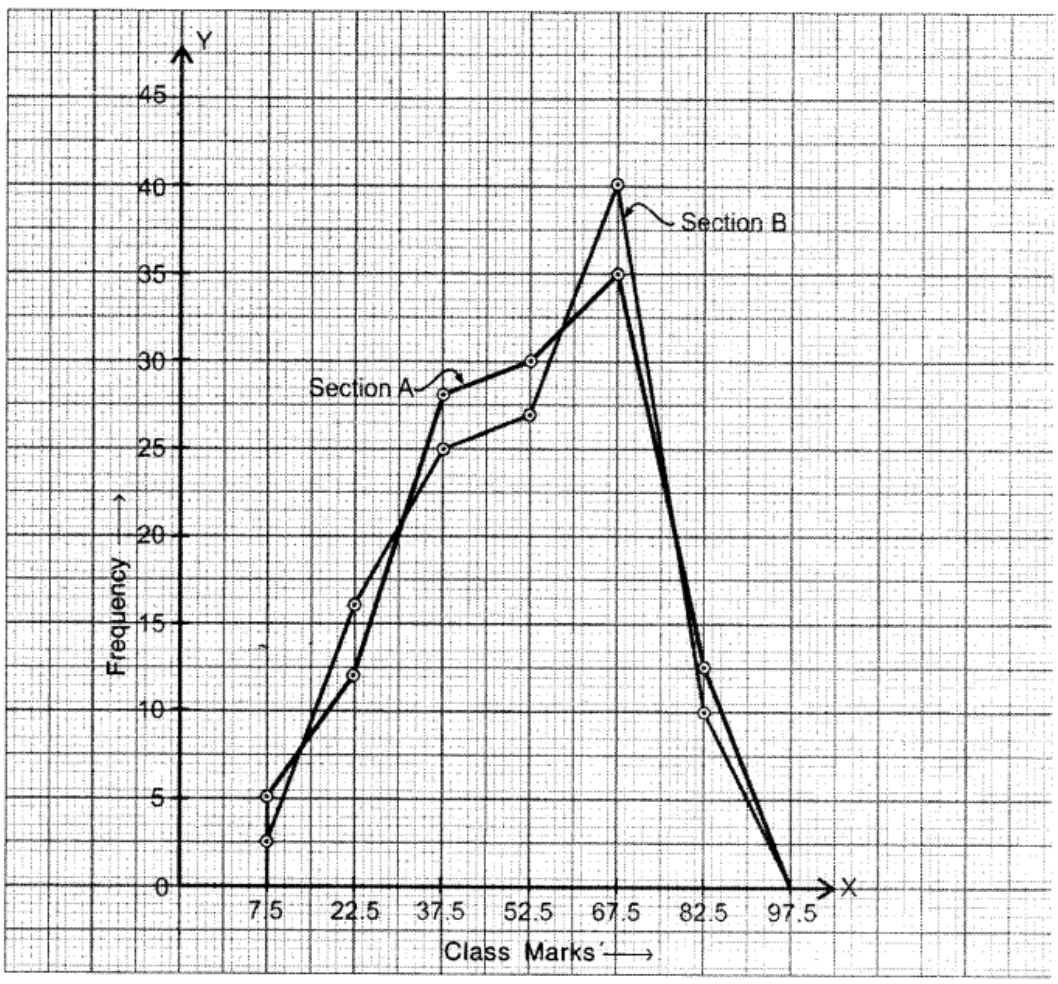
Q34. Following table gives the distribution of students of sections A and B of a class according to the marks obtained by them.

Marks	*Frequency (Section A)*	*Frequency (Section B)*
0 – 15	*5*	*3*
15 – 30	*12*	*16*
30 – 45	*28*	*25*
45 – 60	*30*	*27*
60 – 75	*35*	*40*
75 – 90	*13*	*10*

Represent the marks of the students of both the sections on the same graph by two frequency polygons. What do you observe ?

Answer.

Marks	Class Marks	Frequency (Section A)	Frequency (Section B)
0 – 15	7.5	5	3
15 – 30	22.5	12	16
30 – 45	37.5	28	25
45 – 60	52.5	30	27
60 – 75	67.5	35	40
75 – 90	82.5	13	10



Clearly, the mean score of two sections A and B is same.

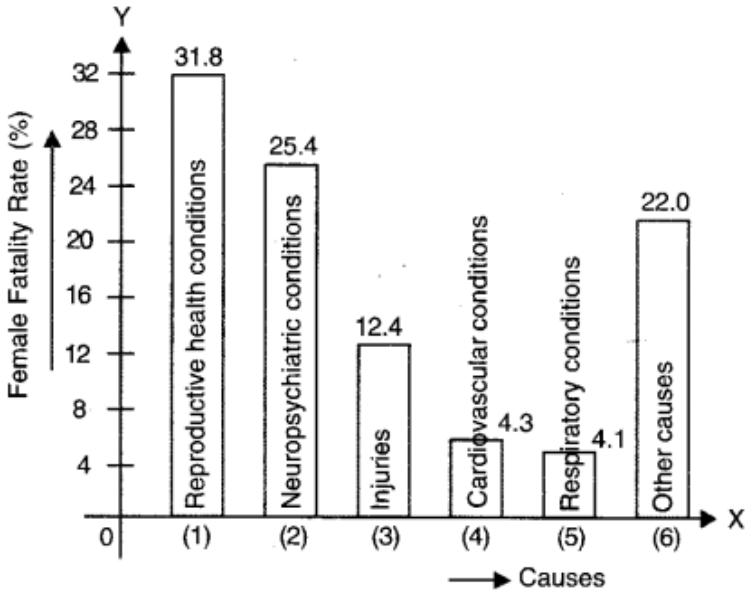
Value Based Questions

Q1. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15-44 (in years) worldwide, found the following figures (in %) :

S.No.	Causes	Female Fatality Rate (%)
1.	Reproductive health conditions	31.8
2.	Neuropsychiatric conditions	25.4
3.	Injuries	12.4
4.	Cardiovascular conditions	4.3
5.	Respiratory conditions	4.1
6.	Other causes	22.0

(i) Represent the information given above graphically.
(ii) Which condition is the major cause of women's ill health and death worldwide?
(iii) Try to find out , with the help of your teacher, any two factors which play a major role in the cause in (ii) above being the major cause.

Answer. (i) The bar graph of the data is as given below :
In the graph, drawn causes of illness and death among women between the ages 15-44 (in years) worldwide is denoted on X-axis and female fatality rate (%) is denoted on the Y-axis.
(ii) The major cause of women's ill health and death worldwide is reproductive health condition.
(iii) Two other factors which play a major role in the cause in (ii) above are neuro-psychiatric conditions and other causes.

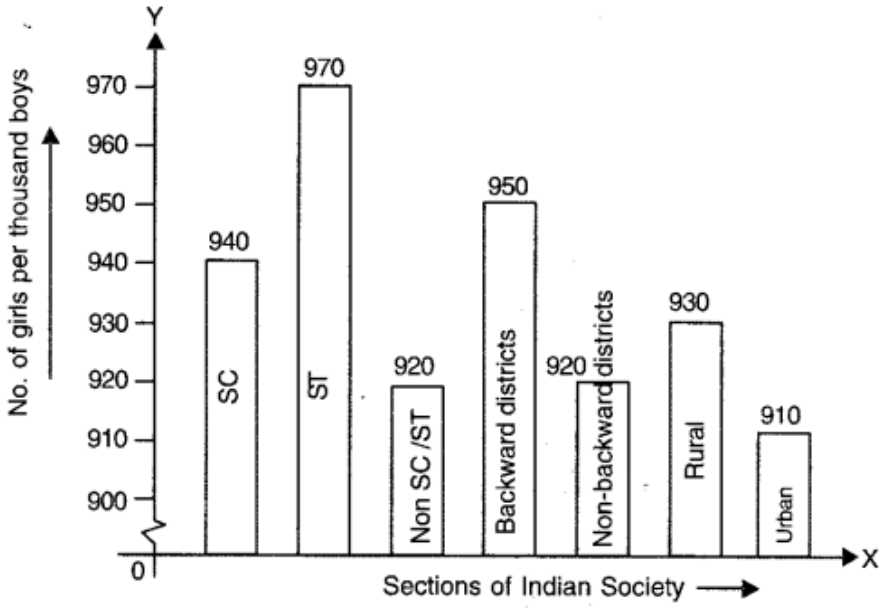


Q2. The following data on the number of girls (to the nearest ten) per thousand boys in different sections of the Indian society is given below :

Sections of Indian Society	No. of Girls per thousand Boys
Scheduled Caste (SC)	940
Scheduled Tribe (ST)	970
Non-SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930
Urban	910

(i) Represent the information above by a bar graph.
(ii) In the classroom, discuss what conclusions can be arrived at from the graph.
(iii) What steps should be taken to improve the situation ?

Answer. (i) The required graph is given alongside :
In the graph, different sections of the society is taken on X-axis and number of girls per thousand boys is I taken on the Y-axis. [Scale : 1 cm = 10 girls.]
(ii) From the graph, the number of girls to the nearest ten per i thousand boys are maximum in scheduled tribes whereas they are minimum in urban.
(iii) Prenatal sex determination should strictly banned in urban.

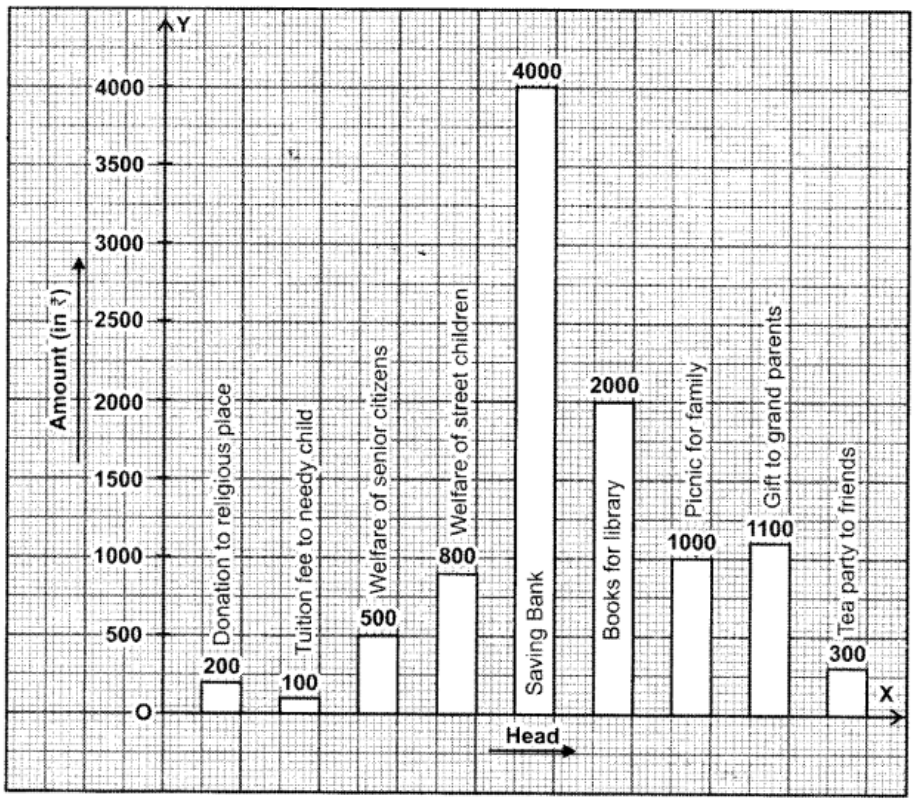


Q3. Shimpi, a class IX student received cash award of Rs 10000 (Ten thousand) in the singing competition. Her father advised her to make a budget plan for spending this amount. She made the following plan :

S. No.	Head	Amount
1.	Donation to religious place	200
2.	Tuition fee to needy child	100
3.	Welfare of senior citizens	500
4.	Welfare of street children	800
5.	Saving in bank	4000
6.	Books for library	2000
7.	Picnic for family	1000
8.	Gift to grand parents	1100
9.	Tea party to friends	300
	Total	10000

Make a bar graph for the above data.
From above answer the following questions :
(i) Which mathematical concepts have been covered in this ?
(ii) How will you rate her budget plan ? In your opinion which head has been given (a) more than deserved and (b) less than it deserved ?
(iii) Which values are depicted in her plan ?

Answer. The bar graph of given data is given below :



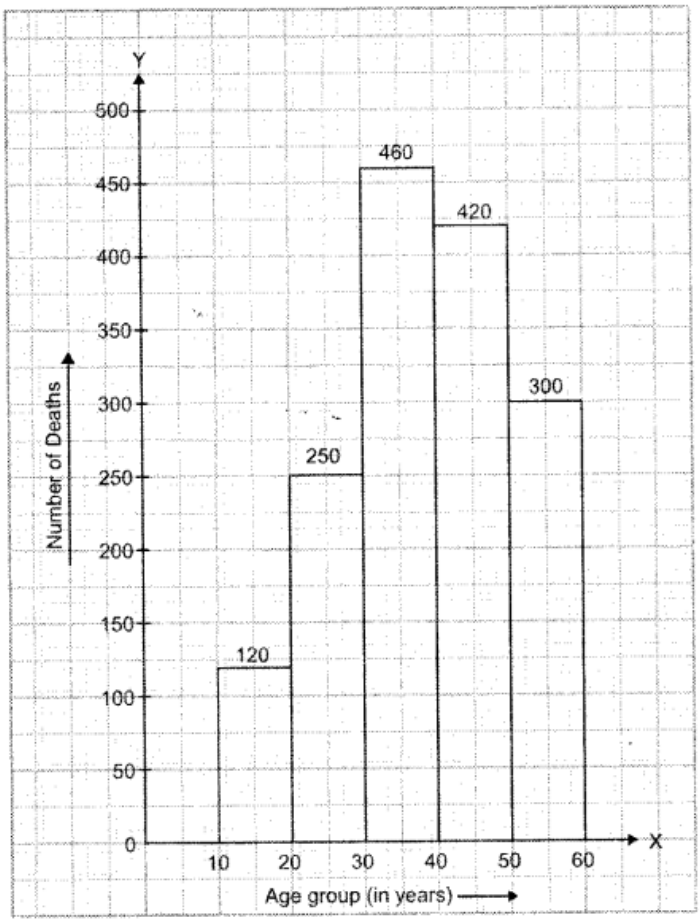
In the graph, head is taken on X-axis and amount is taken on Y-axis.
(i) Representation of data using bar graph.
(ii) Very good
(a) Picnic for family
(b) Tuition fee for needy child
(iii) Help the needy people and respect the elders.

Q4. In a year, the number of deaths due to habit of smoking for different age group is given below :

Age group	*Number of Deaths*
10 – 20	*120*
20 – 30	*250*
30 – 40	*460*
40 – 50	*420*
50 – 60	*300*

(i) Represent the given information with the help of a histogram.
(ii) What lesson do you learn from this information ?

Answer. (i) The histogram of given information is as given below :



(ii) Smoking is injurious to health

Q5. Find the mean of children per family from the data given below :

Number of Children	Number of Families
0	5
1	11
2	25
3	12
4	5
5	2

What values are depicted from this data?

Answer.

(*i*) We have

No. of Children (x_i)	***No. of Families*** (f_i)	$f_i x_i$
0	5	0
1	11	11
2	25	50
3	12	36
4	5	20
5	2	10
Total	60	127

$\therefore$ Mean $= \frac{\Sigma f_i x_i}{\Sigma f_i} = \frac{127}{60} = 2.12$ (approx.)

(*ii*) Small family, happy family.