

## NCERT solutions for class 9 maths chapter 14 Statistics

### Exercise: 14.1

**Q1** Give five examples of data that you can collect from your day-to-day life.

**Answer:**

Five examples of data that we can collect in our daily life are

- (i) Number of students in a class.
- (ii) The number of books in a library.
- (iii) Toys sold on a particular day at a shop.
- (iv) People who voted for a particular candidate.
- (v) Runs scored by a batsman on each ball in a particular evening.

**Q2** Classify the data in Q.1 above as primary or secondary data.

**Answer:**

- (i) The number of students in a class.
- (ii) The number of books in a library.
- (iii) Toys sold on a particular day at a shop.
- (iv) People who voted for a particular candidate.
- (v) Runs scored by a batsman on each ball on a particular evening.

All of the data in Q.1 is primary data.

### NCERT solutions for class 9 maths chapter 14 Statistics Exercise: 14.2

**Q1** The blood groups of 30 students of Class VIII are recorded as follows:

A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O,

A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O.

Represent this data in the form of a frequency distribution table. Which is the most common, and which is the rarest, blood group among these students?

**Answer:**

The representation of the given data in the form of a frequency distribution table is as follows.

Blood groups	Tally marks	Number of students
A		9
B		6
O		12
AB		3
Total		30

From the table we can see that O is the most common and AB is the rarest blood group.

**Q2** The distance (in km) of 40 engineers from their residence to their place of work were found as follows:

5 3 10 20 25 11 13 7 12 31

19 10 12 17 18 11 32 17 16 2

7 9 7 8 3 5 12 15 18 3

12 14 2 9 6 15 15 7 6 12

Construct a grouped frequency distribution table with class size 5 for the data given above taking the first interval as  $0 - 5$  (5 not included). What main features do you observe from this tabular representation?

**Answer:**

As the minimum and maximum distances of an engineer from his place of work is 2 and 32 respectively the class intervals with class size 5 would be the following.

0 - 5, 5 - 10, 10 - 15, 15 - 20, 20 - 25, 25 - 30, 30 - 35

The representation of the given data in the form of a grouped frequency distribution table is as follows

Distance (in km)	Tally marks	Number of engineers
0 - 5	≡	5
5 - 10	≡ ≡	11
10 - 15	≡ ≡	11
15 - 20	≡	9
20 - 25		1
25 - 30		1
30 - 35		2
<b>Total</b>		<b>40</b>

Frequencies of the class intervals 5 - 10 and 10 - 15 are maximum and equal to 11 each and frequencies of the class intervals 20 - 25 and 25 - 30 are minimum and equal to 1 each.

**Q3 (i)** The relative humidity (in %) of a certain city for a month of 30 days was as follows:

98.1 98.6 99.2 90.3 86.5 95.3 92.9 96.3 94.2 95.1

89.2 92.3 97.1 93.5 92.7 95.1 97.2 93.3 95.2 97.3

96.2 92.1 84.9 90.2 95.7 98.3 97.3 96.1 92.1 89

Construct a grouped frequency distribution table with classes 84 - 86, 86 - 88, etc.

**Answer:**

Relative humidity (in %)	Tally marks	Frequency
84 - 86		1
86 - 88		1
88 - 90		2
90 - 92	.	2
92 - 94	≡	7
94 - 96	≡	6
96 - 98	≡	7
98 - 100		4
Total		30

**Q3 (ii)** The relative humidity (in  $^{\circ}/_{o}$ ) of a certain city for a month of 30 days was as follows:

98.1 98.6 99.2 90.3 86.5 95.3 92.9 96.3 94.2 95.1

89.2 92.3 97.1 93.5 92.7 95.1 97.2 93.3 95.2 97.3

96.2 92.1 84.9 90.2 95.7 98.3 97.3 96.1 92.1 89

Which month or season do you think this data is about?

**Answer:**

As from the table we can see relative humidity in most of the days is above 92% we can conclude the data is from a month of the rainy season. The least humidity recorded is 84.9% which also is pretty high.

**Q3 (iii)** The relative humidity (in  $^{\circ}/_{o}$ ) of a certain city for a month of 30 days was as follows:

98.1 98.6 99.2 90.3 86.5 95.3 92.9 96.3 94.2 95.1

89.2 92.3 97.1 93.5 92.7 95.1 97.2 93.3 95.2 97.3

96.2 92.1 84.9 90.2 95.7 98.3 97.3 96.1 92.1 89

What is the range of this data?

**Answer:**

Range of a given data = Highest observation - Lowest Observation

Highest recorded humidity = 99.2%

Lowest recorded humidity = 84.9%

Therefore range of the given data =  $99.2 - 84.9 = 14.3\%$

**Q4 (i)** The heights of 50 students, measured to the nearest centimetres, have been found to be as follows:

161 150 154 165 168 161 154 162 150 151

162 164 171 165 158 154 156 172 160 170

153 159 161 170 162 165 166 168 165 164

154 152 153 156 158 162 160 161 173 166

161 159 162 167 168 159 158 153 154 159

Represent the data given above by a grouped frequency distribution table, taking the class intervals as 160 - 165, 165 - 170, etc.

**Answer:**

The highest recorded height of a student is 173 cm.

The lowest recorded height of a student is 150 cm.

The class intervals would therefore be 150 -155, 155 - 160, 160 - 165, 165 - 170, 170 - 175

The representation of the given data in the form of a grouped frequency distribution table is as follows.

Heights	Tally marks	Number of students
150 - 155	Ʒ Ʒ Ʒ	12
155 - 160	Ʒ	9
160 - 165	Ʒ Ʒ Ʒ	14
165 - 170	Ʒ Ʒ	10
170 - 175	Ʒ	5
Total		50

**Q4 (ii)** The heights of 50 students, measured to the nearest centimetres, have been found to be as follows:

161 150 154 165 168 161 154 162 150 151

162 164 171 165 158 154 156 172 160 170

153 159 161 170 162 165 166 168 165 164

154 152 153 156 158 162 160 161 173 166

161 159 162 167 168 159 158 153 154 159

What can you conclude about their heights from the table?

**Answer:**

From the table we can conclude that maximum students have height in the range 160 - 165 cm and more than half of the students are shorter than 165 cm.

**Q5 (i)** A study was conducted to find out the concentration of sulphur dioxide in the air in parts per million (ppm) of a certain city. The data obtained for 30 days is as follows:

0.03 0.08 0.08 0.09 0.04 0.17

0.16 0.05 0.02 0.06 0.18 0.20

0.11 0.08 0.12 0.13 0.22 0.07

0.08 0.01 0.10 0.06 0.09 0.18

0.11 0.07 0.05 0.07 0.01 0.04

Make a grouped frequency distribution table for this data with class intervals as 0.00 - 0.04, 0.04 - 0.08, and so on.

**Answer:**

The lowest value of the concentration of sulphur dioxide in the air is 0.01 ppm

The highest value of the concentration of sulphur dioxide in the air is 0.22 ppm

The representation of the given data in the form of a frequency distribution table is as follows.

Concentration of sulphur dioxide (in ppm)	Tally marks	Number of days
0.00 - 0.04		4
0.04 - 0.08	≡	9
0.08 - 0.12	≡	9
0.12 - 0.16		2
0.16 - 0.20		4
0.20 - 0.24		2
Total		30

**Q5 (ii)** A study was conducted to find out the concentration of sulphur dioxide in the air in parts per million (ppm) of a certain city. The data obtained for 30 days is as follows:

0.03 0.08 0.08 0.09 0.04 0.17

0.16 0.05 0.02 0.06 0.18 0.20

0.11 0.08 0.12 0.13 0.22 0.07

0.08 0.01 0.10 0.06 0.09 0.18

0.11 0.07 0.05 0.07 0.01 0.04

For how many days, was the concentration of sulphur dioxide more than 0.11 parts per million?

**Answer:**

From the frequency distribution table, we can see the concentration of sulphur dioxide was more than 0.11 ppm for 8 days.

It was in the range 0.12 - 0.16 for 2 days, 0.16 - 0.20 for 4 days and 0.20 - 0.24 for 2 days.

**Q6** Three coins were tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows:

0 1 2 2 1 2 3 1 3 0

1 3 1 1 2 2 0 1 2 1

3 0 0 1 1 2 3 2 2 0

Prepare a frequency distribution table for the data given above

**Answer:**

A frequency distribution table for the data given above is as follows.

Number of heads occurring	Tally marks	Frequency
0		6
1		10
2		9
3		5
Total		30

**Q7 (i)** The value of  $\pi$  upto 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510

Make a frequency distribution of the digits from 0 to 9 after the decimal point.

**Answer:**

The representation of the given data in the form of a frequency distribution table is as follows.

Digits	Tally marks	Frequency
0		2
1		5
2		5
3		8
4		4
5		5
6		4
7		4
8		5
9		8
Total		50

**Q7 (ii)** The value of  $\pi$  up to 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510

What are the most and the least frequently occurring digits?

**Answer:**

The most frequently occurring digits are 3 and 9 with a frequency of 8.

**Q8 (i)** 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 8 5 9 6 8 7 14 12

Make a grouped frequency distribution table for this data, taking class width 5 and one of the class intervals as 5 - 10.

**Answer:**

The highest number of hours for which a child watched TV = 17

The lowest number of hours for which a child watched TV = 1

The class intervals with class width 5 would, therefore, be 1 - 5, 5 - 10, 10 - 15, 15 - 20

The representation of the given data in the form of a frequency distribution table is as follows.

Number of hours	Tally marks	Number of children
0 - 5		10
5 - 10		13
10 - 15		5
15 - 20		2
Total		30

**Q8 (ii)** 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 8 5 9 6 8 7 14 12

How many children watched television for 15 or more hours a week?

**Answer:**

2 children watched television for 15 or more hours a week as we can see from the frequency distribution table. Frequency of the class interval 15 - 20 is 2.

**Q9** A company manufactures car batteries of a particular type. The lives (in years) of 40 such batteries were recorded as follows:

2.6 3.0 3.7 3.2 2.2 4.1 3.5 4.5

3.5 2.3 3.2 3.4 3.8 3.2 4.6 3.7

2.5 4.4 3.4 3.3 2.9 3.0 4.3 2.8

3.5 3.2 3.9 3.2 3.2 3.1 3.7 3.4

4.6 3.8 3.2 2.6 3.5 4.2 2.9 3.6

Construct a grouped frequency distribution table for this data, using class intervals of size 0.5 starting from the interval 2 - 2.5.

**Answer:**

The least value of life of a battery recorded = 2.2

The highest value of life of a battery recorded = 4.6

The class intervals with interval size 0.5 would therefore be 2.0 - 2.5, 2.5 - 3.0, 3.0 - 3.5, 3.5 - 4.0, 4.0 - 4.5, 4.5 - 5.0

The representation of the given data in the form of a frequency distribution table is as follows.

Life of batteries (in years)	Tally marks	Number of batteries
2.0 - 2.5		2
2.5 - 3.0		6
3.0 - 3.5	 	14
3.5 - 4.0	 	11
4.0 - 4.5		4
4.5 - 5.0		3
<b>Total</b>		<b>40</b>

### NCERT solutions for class 9 maths chapter 14 Statistics Exercise: 14.3

**Q1 (i)** 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 %):

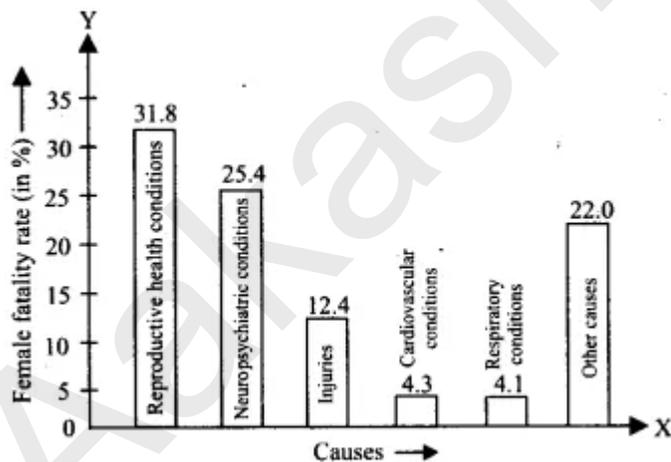
Serial Number	Causes	Female fatality rate (%)
1.	Reproductive health conditions	31.8

2.	Neuropsychiatric conditions	25.4
3.	Injuries	12.4
4.	Cardiovascular conditions	4.3
5.	Respiratory conditions	4.1
6.	Other causes	22.0

Represent the information given above graphically

**Answer:**

The graphical representation of the given data is as follows



**Q1 (ii)** 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 %):

Serial Number	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

Which condition is the major cause of women's ill health and death worldwide?

**Answer:**

From the graph we can see reproductive health conditions is the major cause of women's ill health and death worldwide. The female fatality rate is 31.8% due to reproductive health conditions.

**Q1 (iii)** 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 %):

Serial Number	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

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:**

Due to poor financial conditions and failure of the government to provide necessary healthcare condition to women, reproductive health conditions is the major cause of ill health and death of women worldwide.

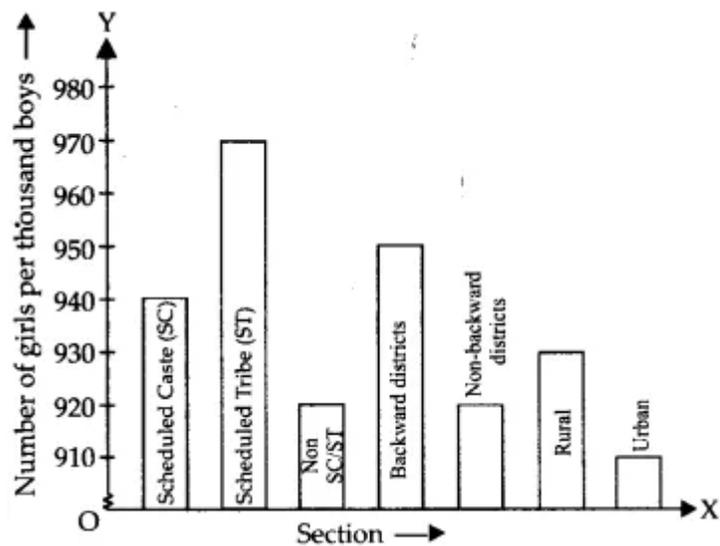
**Q2 (i)** The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian society is given below.

Section	Number of girls per thousand boys
Schedule Caste (SC)	940
Schedule Tribe (ST)	970
Non SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930
Urban	910

Represent the information above by a bar graph.

**Answer:**

The graphical representation of the given information is as follows



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

Section	Number of girls per thousand boys
Schedule Caste (SC)	940
Schedule Tribe (ST)	970
Non SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930

Urban	910
-------	-----

In the classroom discuss what conclusions can be arrived at from the graph

**Answer:**

From the graph, we can see that the number of girls per thousand boys is the least in urban society and the highest in the Scheduled Tribes.

910 in case of urban society and 970 in that of Scheduled Tribes.

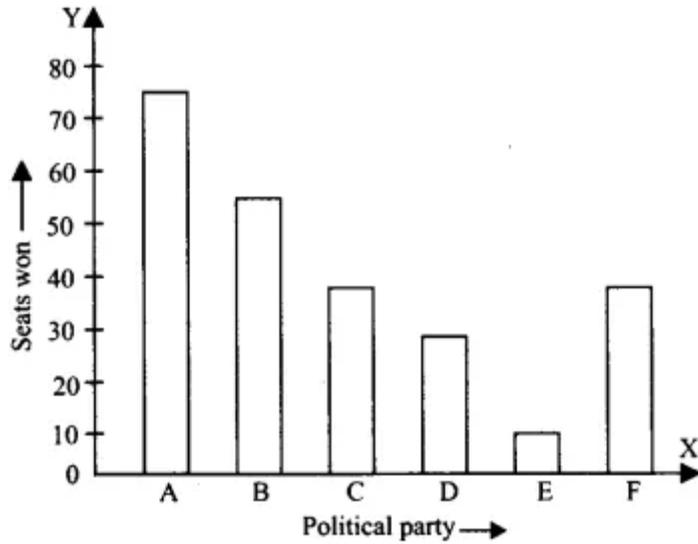
**Q3 (i)** Given below are the seats won by different political parties in the polling outcome of a state assembly elections:

Political Party	A	B	C	D	E	F
Seats Won	75	55	37	29	10	37

Draw a bar graph to represent the polling results.

**Answer:**

The representation of the given data in the form of a bar graph is as follows.



**Q3 (ii)** Given below are the seats won by different political parties in the polling outcome of state assembly elections:

Political Party	A	B	C	D	E	F
Seats Won	75	55	37	29	10	37

Which political party won the maximum number of seats?

**Answer:**

Party A has won the maximum number of seats. Party A has won 75 seats.

**Q4 (i)** The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table:

Length (in mm)	Number of leaves

118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

Draw a histogram to represent the given data. [Hint: First make the class intervals continuous]

**Answer:**

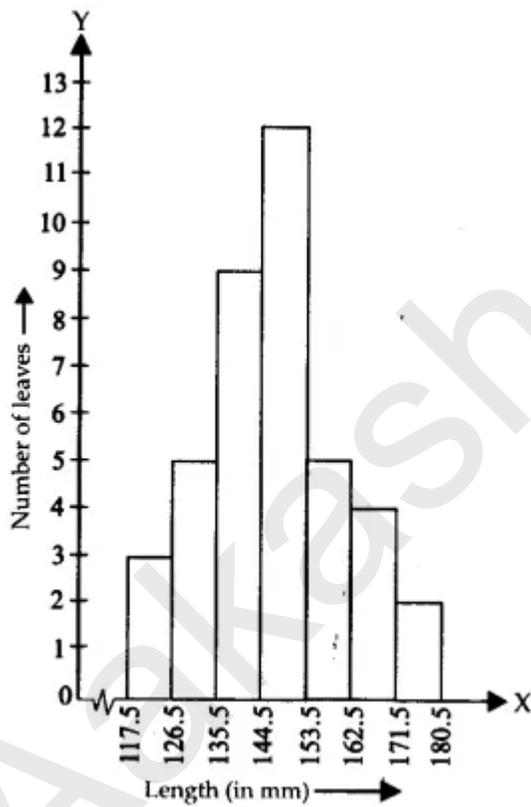
As we can see from the given table that the data is discontinuous and the difference between the upper limit of a class and the lower limit of the next class is 1 and therefore we change both of them by a value  $1/2$ .

e.g 127 - 135 would become 126.5 - 135.5

The modified table therefore is

Length (in mm)	Number of leaves
117.5 - 126.5	3
126.5 - 135.5	5
135.5 - 144.5	9
144.5 - 153.5	12
153.5 - 162.5	5
162.5 - 171.5	4
171.5 - 180.5	2

The representation of the above data through a histogram is as follows



**Q4 (ii)** The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table:

Length (in mm)	Number of leaves
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

Is there any other suitable graphical representation for the same data?

**Answer:**

A frequency polygon could be another suitable graphical representation for the same data.

**Q4 (iii)** The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table:

Length (in mm)	Number of leaves
----------------	------------------

118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

Is it correct to conclude that the maximum number of leaves are 153 mm long? Why?

**Answer:**

No it is certainly not correct to conclude that the maximum number of leaves are 153 mm long because the given data does not tell us about the exact length of the leaves. It only tells us about the range in which their lengths lie. We can only conclude that the maximum number of leaves (12) have their lengths in the region 145 - 153.

**Q5 (i)** The following table gives the life times of 400 neon lamps:

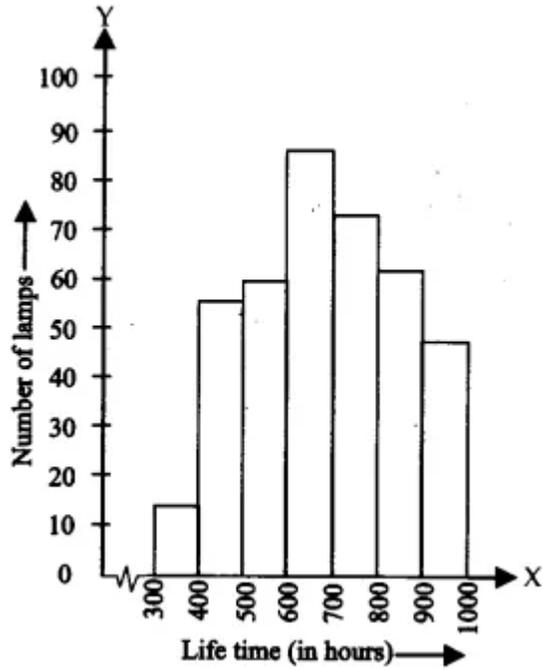
Life time (in hours)	Number of lamps
----------------------	-----------------

300-400	14
400-500	56
500-600	60
600-700	86
700-800	74
800-900	62
900-1000	48

Represent the given information with the help of a histogram.

**Answer:**

The representation of the given information in the form of a histogram is as follows.



**Q5 (ii)** The following table gives the life times of 400 neon lamps:

Life time (in hours)	Number of lamps
300-400	14
400-500	56
500-600	60
600-700	86
700-800	74
800-900	62

900-1000	48
----------	----

How many lamps have a life time of more than 700 hours?

**Answer:**

Lamps having life time in the range 700 - 800 = 74

Lamps having life time in the range 800 - 900 = 62

Lamps having life time in the range 900 - 1000 = 48

Lamps having a life time of more than 700 hours =  $74 + 62 + 48 = 184$ .

**Q6** The following table gives the distribution of students of two sections according to the marks obtained by them:

<b>Section A</b>		<b>Section B</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:**

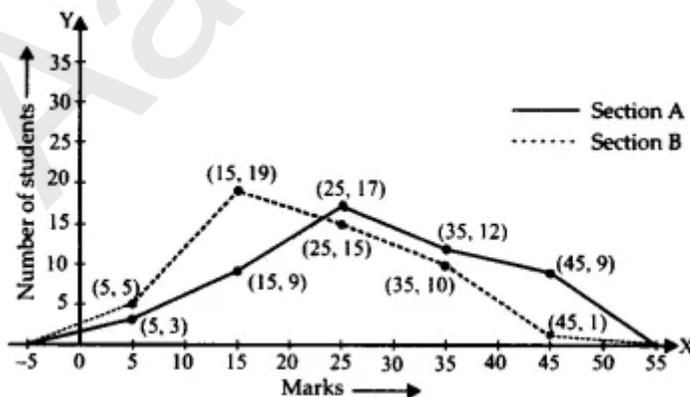
To make the frequency polygon we first modify the table as follows

$$\text{Class marks} = \frac{\text{Upper limit of class interval} + \text{Lower limit of class interval}}{2}$$

Marks	Class marks	Frequency Section A	Frequency Section B
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

To make the frequency polygon we mark the marks on the x-axis and the number of students on the y-axis.

The representation of the given information in the form of frequency polygon is as follows.



From the frequency polygon we can see that the performance of section A is better.

**Q7** The runs scored by two teams A and B on the first 60 balls in a cricket match are given below:

Number of balls	Team A	Team B
1-6	2	5
7-12	1	6
13-18	8	2
19-24	9	10
25-30	4	5
31-36	5	6
37-42	6	3
43-48	10	4
49-54	6	8
55-60	2	10

Represent the data of both the teams on the same graph by frequency polygons. [ **Hint** : First make the class intervals continuous.]

**Answer:**

The given data is not continuous we therefore modify the limits of the class intervals as well to make the class intervals continuous.

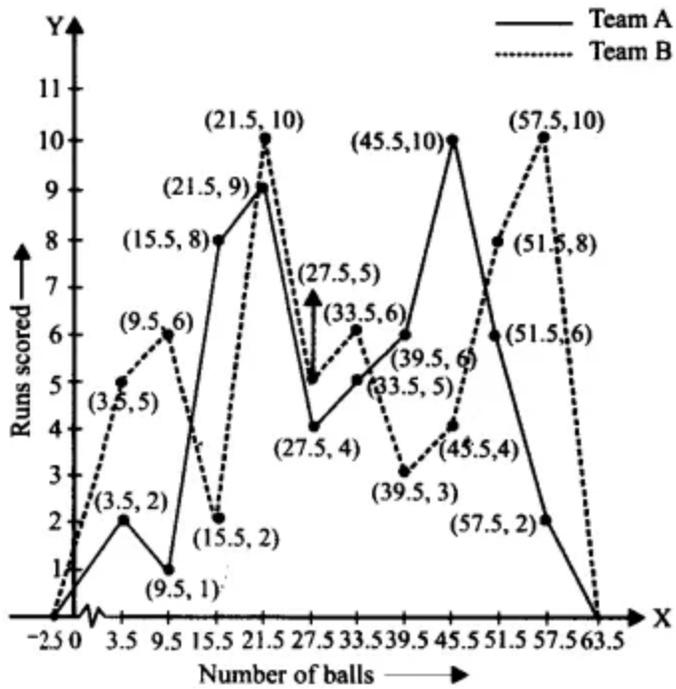
To make the frequency polygon we first modify the table as follows

$$\text{Class marks} = \frac{\text{Upper limit of class interval} + \text{Lower limit of class interval}}{2}$$

Number of balls	Class marks	Frequency Team A	Frequency Team B
0.5 - 6.5	3.5	2	5
6.5 - 12.5	9.5	1	6
12.5 - 18.5	15.5	8	2
18.5 - 24.5	21.5	9	10
24.5 - 30.5	27.5	4	5
30.5 - 36.5	33.5	5	6
36.5 - 42.5	39.5	6	3
42.5 - 48.5	45.5	10	4
48.5 - 54.5	51.5	6	8
54.5 - 60.5	57.5	2	10

To make the frequency polygon we mark the number of balls on the x-axis and the runs scored on the y-axis.

The representation of the given information in the form of frequency polygon is as follows.



Q8 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:**

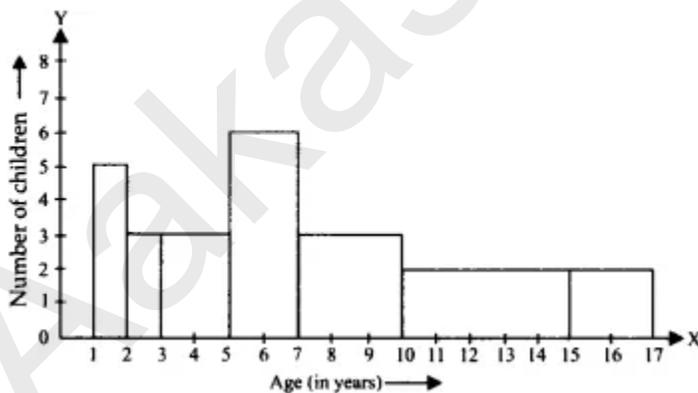
Since the class sizes vary to make the histogram we have to calculate the weighted frequency for each rectangle as per its width

Minimum class size =  $2 - 1 = 1$

The modified table showing the weighted frequency as per the size of the class intervals is as follows.

Age (in years)	Frequency	Width of the class	Length of the rectangle
1 - 2	5	1	$\frac{1}{1} \times 5 = 5$
2 - 3	3	1	$\frac{1}{1} \times 3 = 3$
3 - 5	6	2	$\frac{1}{2} \times 6 = 3$
5 - 7	12	2	$\frac{1}{2} \times 12 = 6$
7 - 10	9	3	$\frac{1}{3} \times 9 = 3$
10 - 15	10	5	$\frac{1}{5} \times 10 = 2$
15 - 17	4	2	$\frac{1}{2} \times 4 = 2$

The histogram representing the information given in the above table is as follows.



**Q9 (i)** 100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows:

Number of letters	Number of surnames
1-4	6
4-6	30
6-8	44
8-12	16
12-20	4

**Answer:**

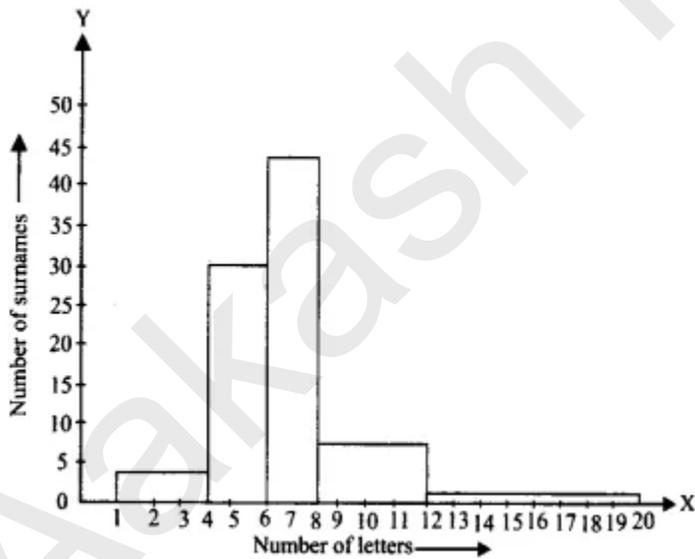
Since the class sizes vary to make the histogram we have to calculate the weighted frequency for each rectangle as per its width

Minimum class size =  $6 - 4 = 2$

The modified table showing the weighted frequency as per the size of the class intervals is as follows.

Number of letters	Frequency	Width of the class	Length of the rectangle
1 - 4	6	3	$\frac{2}{3} \times 6 = 4$
4 - 6	30	2	$\frac{2}{2} \times 30 = 30$
6 - 8	44	2	$\frac{2}{2} \times 44 = 44$
8 - 12	16	4	$\frac{2}{4} \times 16 = 8$
12 - 20	4	8	$\frac{2}{8} \times 4 = 1$

The histogram representing the information given in the above table is as follows.



**Q9 (ii)** 100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows:

Number of letters	Number of surnames
1-4	6
4-6	30
6-8	44
8-12	16
12-20	4

Write the class interval in which the maximum number of surnames lie.

**Answer:**

The class interval in which the maximum number of surnames lie is 6 - 8

The weighted frequency of this class interval (taking 2 as the minimum class size) is 44.

**NCERT solutions for class 9 maths chapter 14 Statistics Exercise: 14.4**

**Q1** The following number of goals were scored by a team in a series of 10 matches:

2, 3, 4, 5, 0, 1, 3, 3, 4, 3

Find the mean, median and mode of these scores.

**Answer:**

$$\text{Mean} = \frac{\text{Sum of observations}}{\text{Number of observations}}$$

Number of observations,  $n = 10$

Mean is 2.8

To find the median we have to arrange the given data in ascending order as follows:

0, 1, 2, 3, 3, 3, 3, 4, 4, 5

$n = 10$  (even)

In the given data 3 occurs the maximum number of times (4)

Therefore, Mode = 3

**Q2** 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.

**Answer:**

$$\text{Mean} = \frac{\text{Sum of observations}}{\text{Number of observations}}$$

Number of observations,  $n = 15$

Mean is 54.8

To find the median we have to arrange the given data in ascending order as follows:

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

$n = 15$  (odd)

$$\text{Median} = \left(\frac{n+1}{2}\right)^{\text{th}} \text{ term}$$

$$\text{Median} = \left(\frac{15+1}{2}\right)^{\text{th}} \text{ term}$$

$$\text{Median} = 8^{\text{th}} \text{ term}$$

$$\text{Median} = 52$$

In the given data 52 occurs the maximum number of times ()

Therefore, Mode = 52

**Q3** The following observations have been arranged in ascending order. If the median of the data is 63, find the value of x.

29, 32, 48, 50, x, x + 2, 72, 78, 84, 95

**Answer:**

The given data is already in ascending order

Number of observations,  $n = 10$  (even)

$$x + 1 = 63$$

$$x = 62$$

**Q4** Find the mode of 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, 18.

**Answer:**

In the given data 14 is occurring the maximum number of times (4)

Mode of the given data is therefore 14.

**Q5** Find the mean salary of 60 workers of a factory from the following table:

Salary (in Rs)	Number of workers
3000	16
4000	12
5000	10
6000	8
7000	6
8000	4
9000	3

10000	1
<b>Total</b>	60

**Answer:**

Salary ( in Rs)( $x_i$ )	Number of workers( $f_i$ )	$f_i x_i$
3000	16	48000
4000	12	48000
5000	10	50000
6000	8	48000
7000	6	42000
8000	4	32000
9000	3	27000
10000	1	10000
<b>Total</b>	$\sum_{i=1}^8 f_i = 60$	$\sum_{i=1}^8 f_i x_i = 305000$

The mean of the above data is given by

The mean salary of the workers working in the factory is Rs 5083.33

**Q6 (i)** Give one example of a situation in which the mean is an appropriate measure of central tendency.

**Answer:**

The mean is an appropriate measure of central tendency in case the observations are close to each other. An example of such a case is height of the students in a class.