Statistics

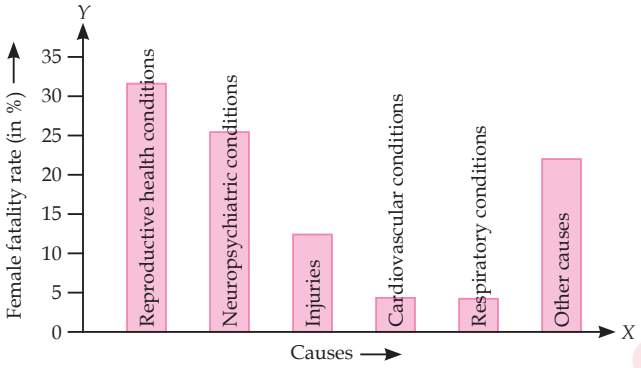
CHAPTER 14

NCERT FOCUS

SOLUTIONS

EXERCISE - 14.3

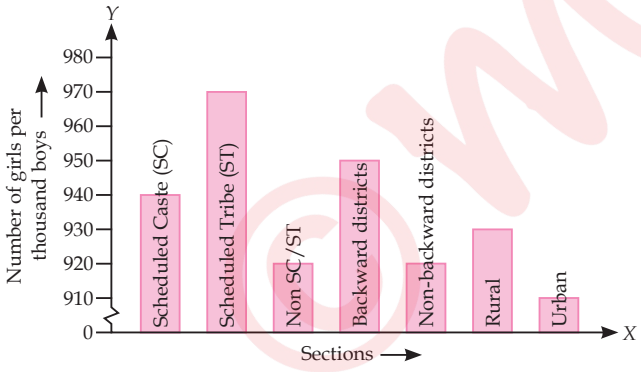
1. (i) The required graphical representation is given below :



(ii) The major cause of women's ill health and death worldwide is 'reproductive health conditions'.

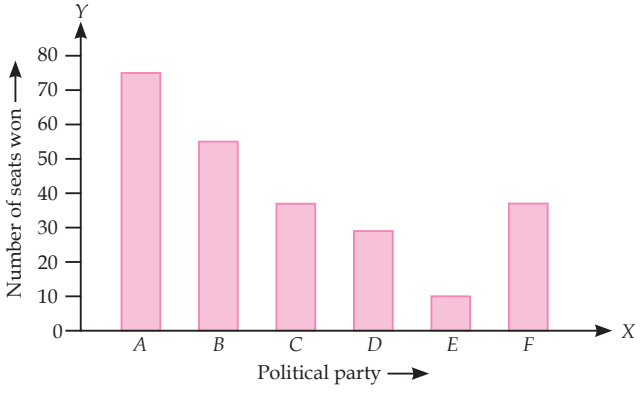
(iii) Two factors may be uneducation and poor background.

2. (i) **:** The required bar graph is :



(ii) Number of girls (per thousand boys) are maximum in scheduled tribes whereas minimum in urban section.

3. (i) The required bar graph is given below :



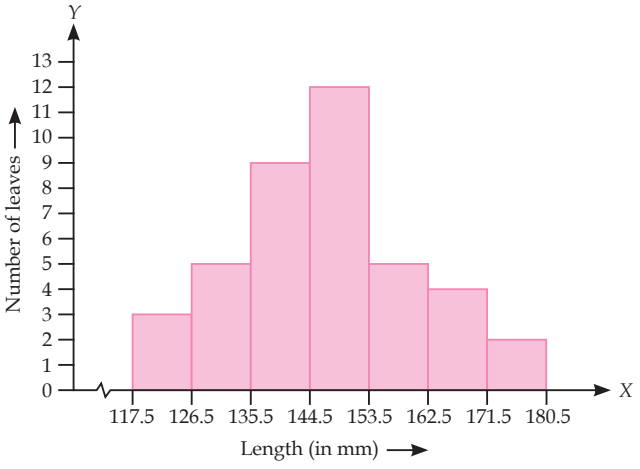
(ii) The political party A won the maximum number of seats.

4. (i) The given frequency distribution is not continuous. Therefore, first we have to modify it to be continuous distribution.

Thus, the modified frequency distribution 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

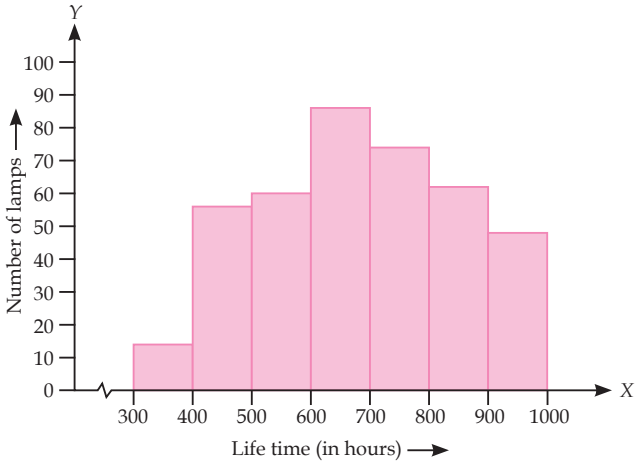
Now, the required histogram of the above frequency distribution is :



(ii) Yes, other suitable graphical representation is a 'frequency polygon'.

(iii) No, it is not a correct statement. The maximum number of leaves are not 153 mm long rather they are from 145 mm to 153 mm long.

5. (i) The required histogram is shown as:

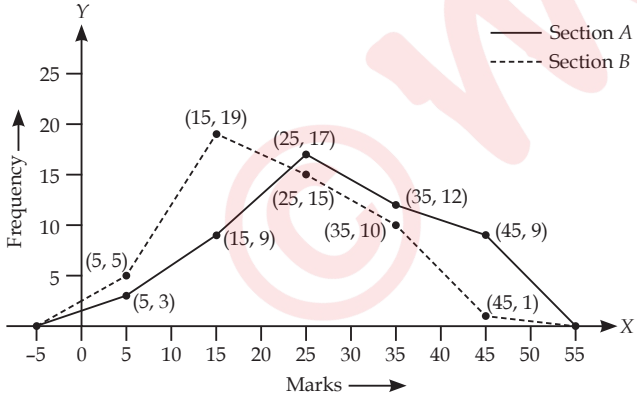


(ii) Number of lamps having life time more than 700 hours = 74 + 62 + 48 = 184.

6. To draw a frequency polygon we mark the class marks along x-axis. Therefore, the modified table is :

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

So, the two frequency polygons are as shown below :

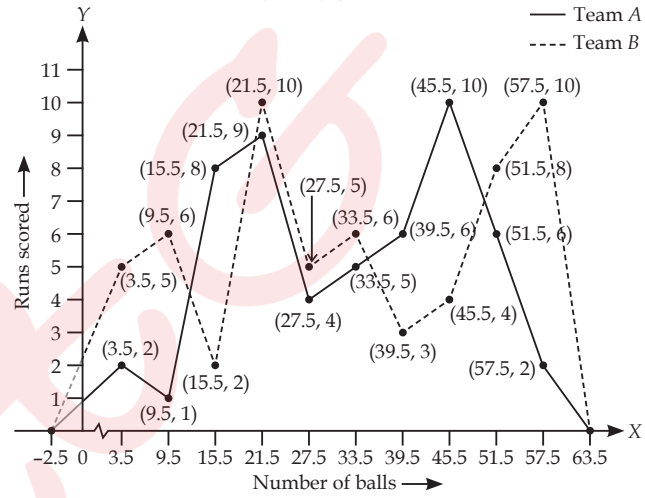


More students of section A have secured good marks than students of section B.

7. The given class intervals are not continuous. Therefore, we first modify the distribution as continuous.

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

The required frequency polygons are as follows :



8. Here, the class sizes are different therefore, we calculate the adjusted frequencies so that area of rectangles become proportional to the frequencies :

Adjusted frequency

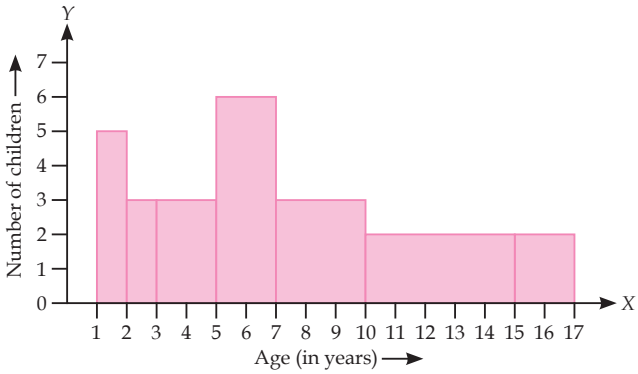
$$= \left[\frac{\text{Minimum class size}}{\text{Class size of corresponding class}}\right] \times \text{Frequency of corresponding class}$$

Here, the minimum class size = 2 – 1 = 1

Thus, we have :

Age (in years)	Frequency	Width of class	Adjusted Frequency
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	$\frac{1}{2}\times 4 = 2$

So, the required histogram is :

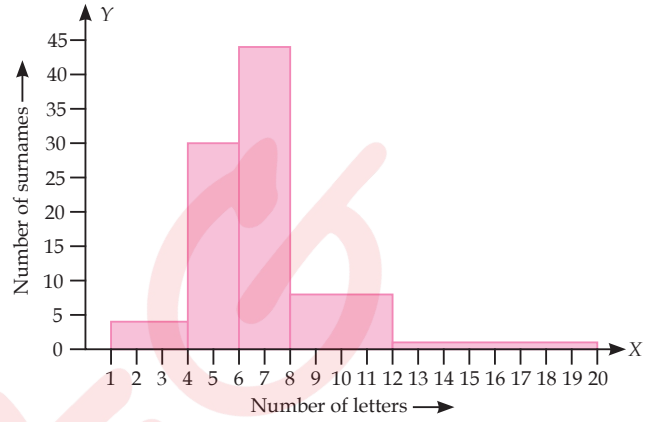


9. (i) Since, class sizes of the given frequency distribution are unequal and the minimum class-size = 6 – 4 = 2.

Thus, we have

Number of letters	Frequency	Width of class	Adjusted Frequency
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	$\frac{2}{8}\times 4 = 1$

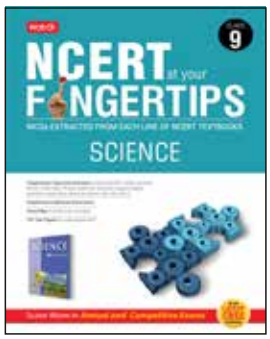
The required histogram is:

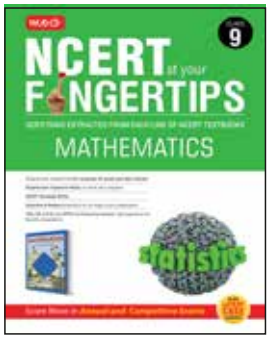


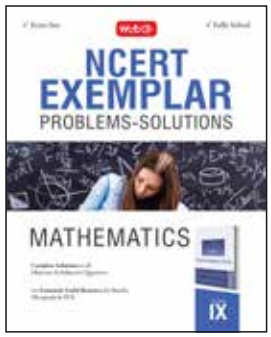
(ii) The maximum frequency is 44, which is corresponding to the class interval 6 - 8.

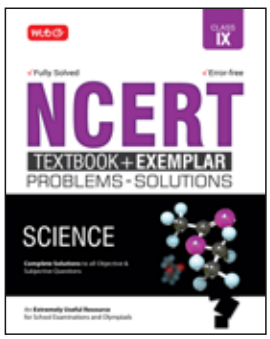
∴ Maximum surnames lie in the class interval 6 - 8.

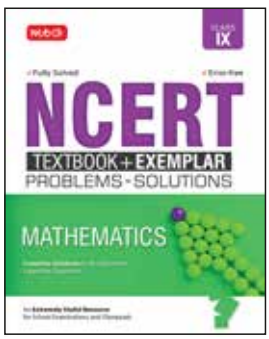
BEST SELLING BOOKS FOR CLASS 9

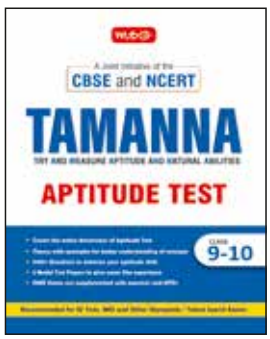


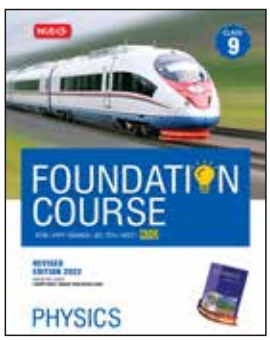


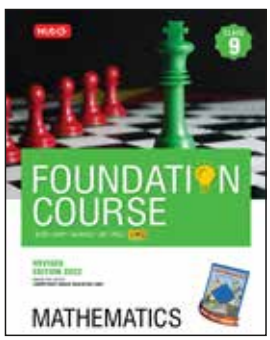


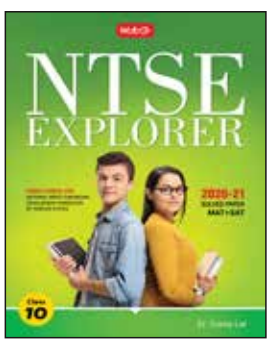


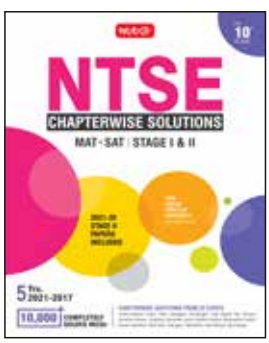


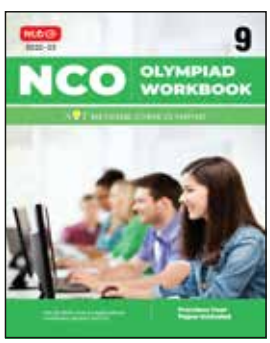


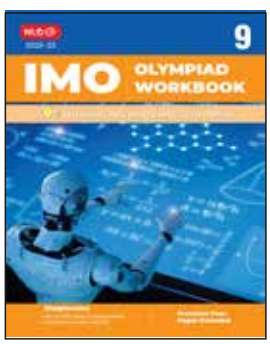


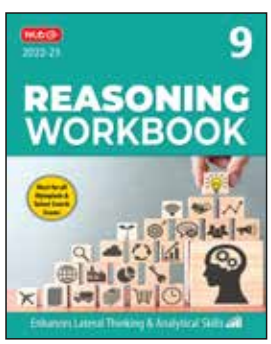












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