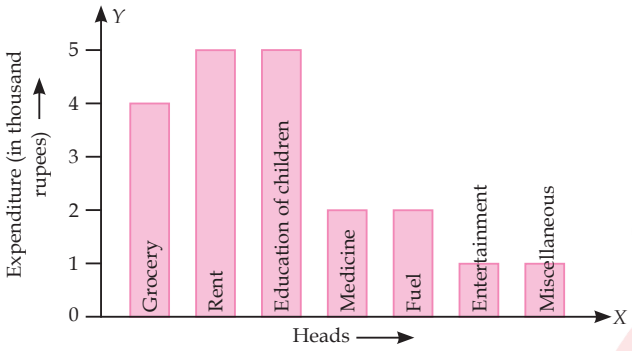
Statistics

CHAPTER 14

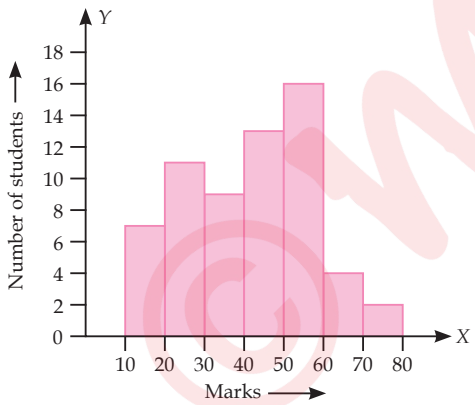
TRY YOURSELF SOLUTIONS

1. (i) 4 students were born in the month of November.
(ii) The maximum number of students were born in the month of August.

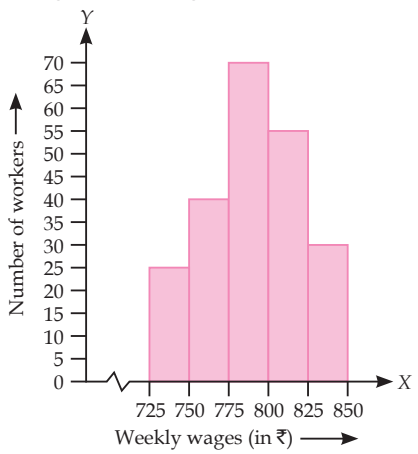
2. Let us represent the heads on horizontal axis using any fixed scale and represent the expenditure on vertical axis by using scale 1 unit = ₹ 1000 (∵ the expenditure is in thousand rupees).
Now, the required graph is :



3. The histogram of the given distribution is :



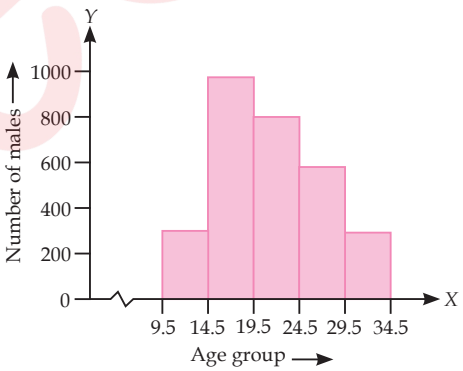
4. The histogram of the given distribution is :



5. The given frequency distribution is not continuous. So, we shall first convert it into a continuous frequency distribution.
So, the modified frequency distribution table is :

Age group	No. of males
9.5 - 14.5	300
14.5 - 19.5	980
19.5 - 24.5	800
24.5 - 29.5	580
29.5 - 34.5	290

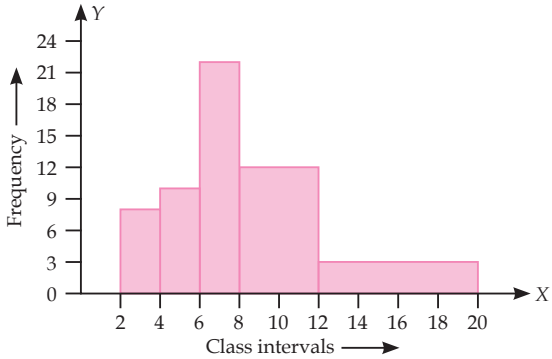
The histogram of the above frequency distribution is :



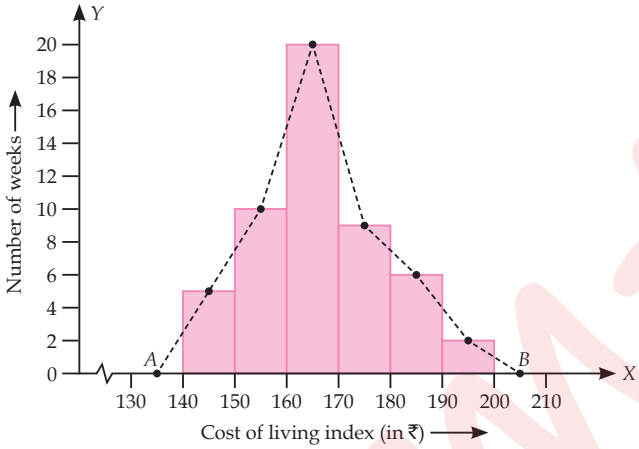
6. In the given distribution the class intervals are not of equal width.
So, we would make modifications in the heights of rectangles, so that the area of the rectangles are proportional to the frequencies. Thus, we have

Class interval	Frequency	Width of the class	Height of the rectangle
2 - 4	8	2	$\frac{2}{2} \times 8 = 8$
4 - 6	10	2	$\frac{2}{2} \times 10 = 10$
6 - 8	22	2	$\frac{2}{2} \times 22 = 22$
8 - 12	24	4	$\frac{2}{4} \times 24 = 12$
12 - 20	12	8	$\frac{2}{8} \times 12 = 3$

The histogram of the data is given below :



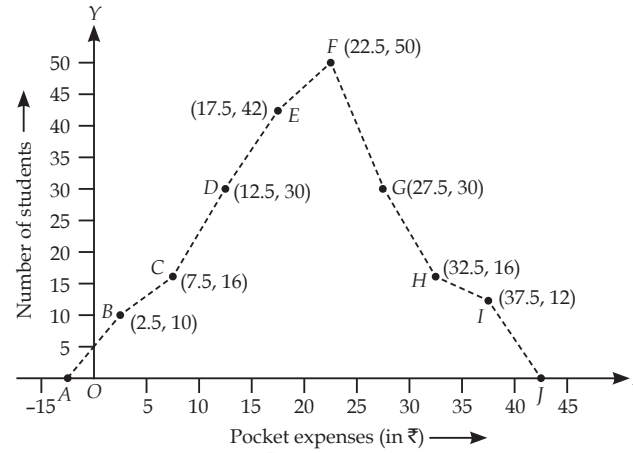
7. Let us first draw the histogram for this data.
Now, we join the mid-points of the tops of adjacent rectangles by line segments. Also, we take the imagined classes 130-140 and 200-210, each with frequency 0. The class marks of these classes are 135 and 205 respectively. Thus, we obtain a complete frequency polygon, shown below :



8. To draw frequency polygon, we find marks of given classes. So, the new frequency distribution table is:

Pocket expense (in ₹)	Class mark	Number of students
0 - 5	2.5	10
5 - 10	7.5	16
10 - 15	12.5	30
15 - 20	17.5	42
20 - 25	22.5	50
25 - 30	27.5	30
30 - 35	32.5	16
35 - 40	37.5	12

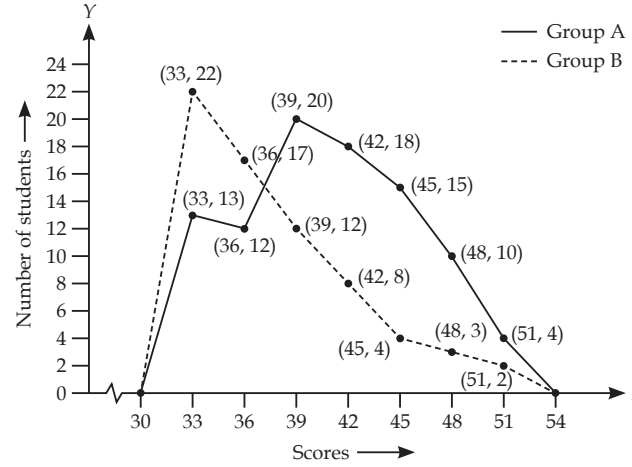
Thus, *OABCDEFGHIJ* is the required frequency polygon.



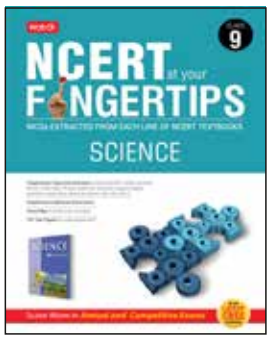
9. Here, the class intervals are not continuous. Therefore, we make them continuous and find the class marks of the classes.
So, the continuous table is as follows :

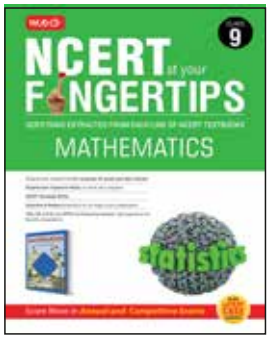
Scores	Class marks	Group *A*	Group *B*
31.5 - 34.5	33	13	22
34.5 - 37.5	36	12	17
37.5 - 40.5	39	20	12
40.5 - 43.5	42	18	8
43.5 - 46.5	45	15	4
46.5 - 49.5	48	10	3
49.5 - 52.5	51	4	2

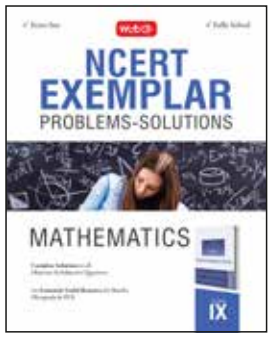
So, the two frequency polygons are shown as :

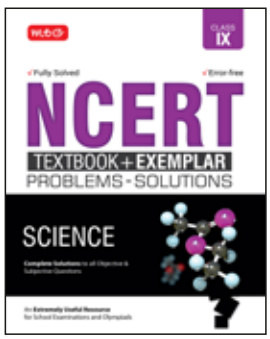


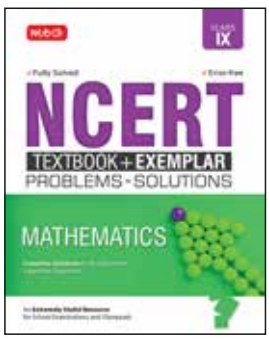
BEST SELLING BOOKS FOR CLASS 9

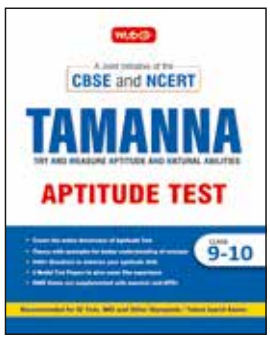


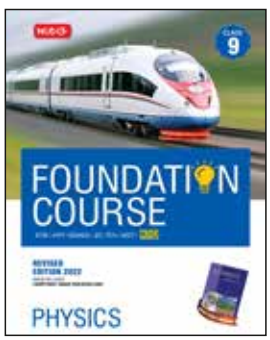


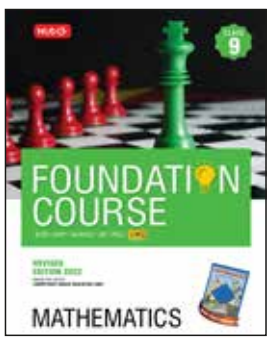


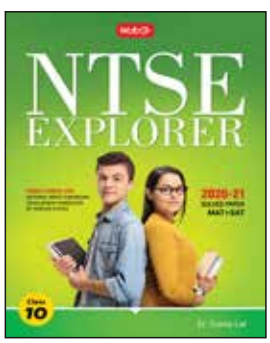


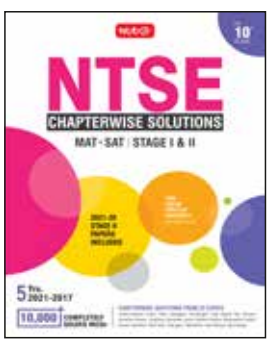


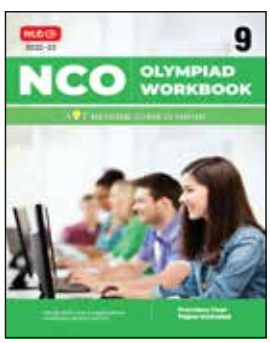


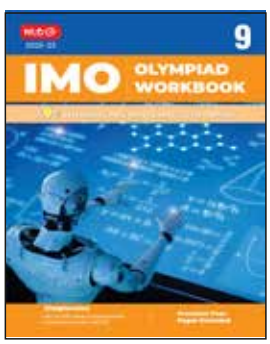


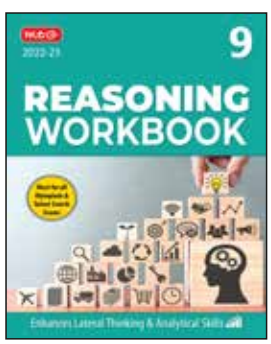












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