

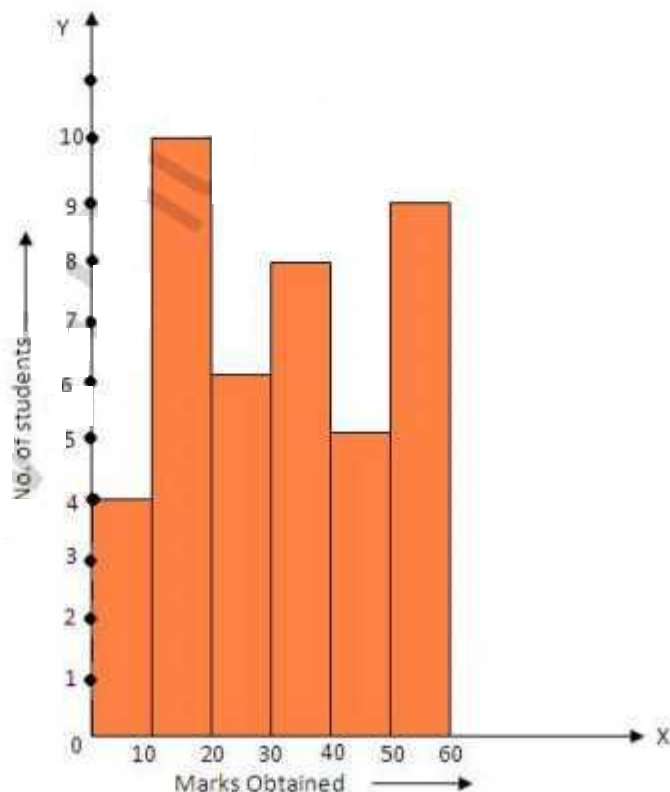
# Graphical Representation

## EXERCISE - 22.1

Q1. Draw a histogram to represent the following data:

Marks obtained	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	4	10	6	8	5	9

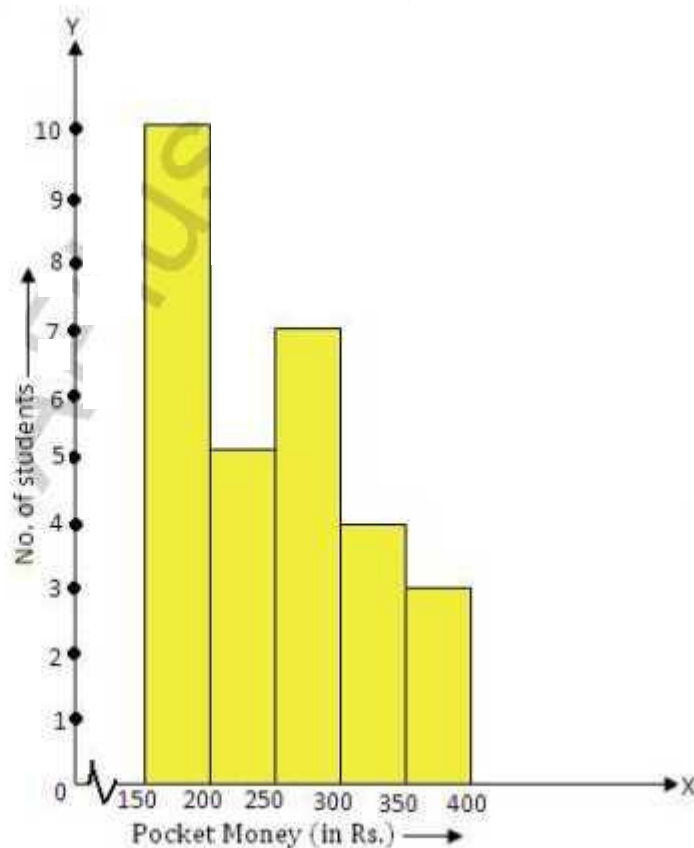
Sol. We take marks on x-axis and no. of students on y-axis and complete histogram as shown.



Q2. Draw a histogram to represent the following data:

Pocket money (in Rs)	150-200	200-250	250-300	300-350	350-400
No. of students	10	5	7	4	3

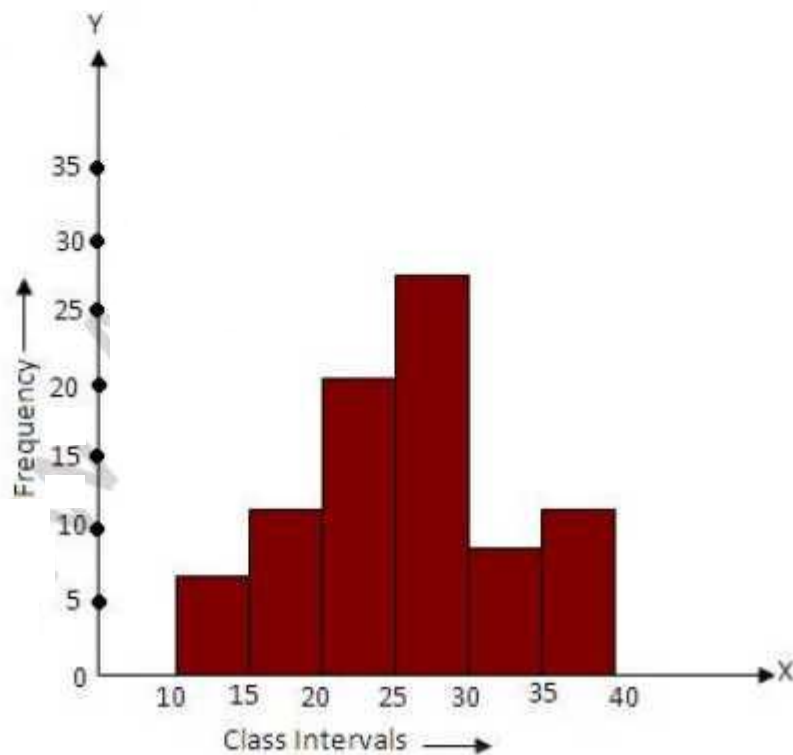
sol. We take pocket money on x-axis and no. of students on y-axis and complete the histogram.



Q3. Draw a histogram for the following data :

Class marks	12.5	17.5	22.5	27.5	32.5	37.5
Frequency	7	12	20	28	8	11

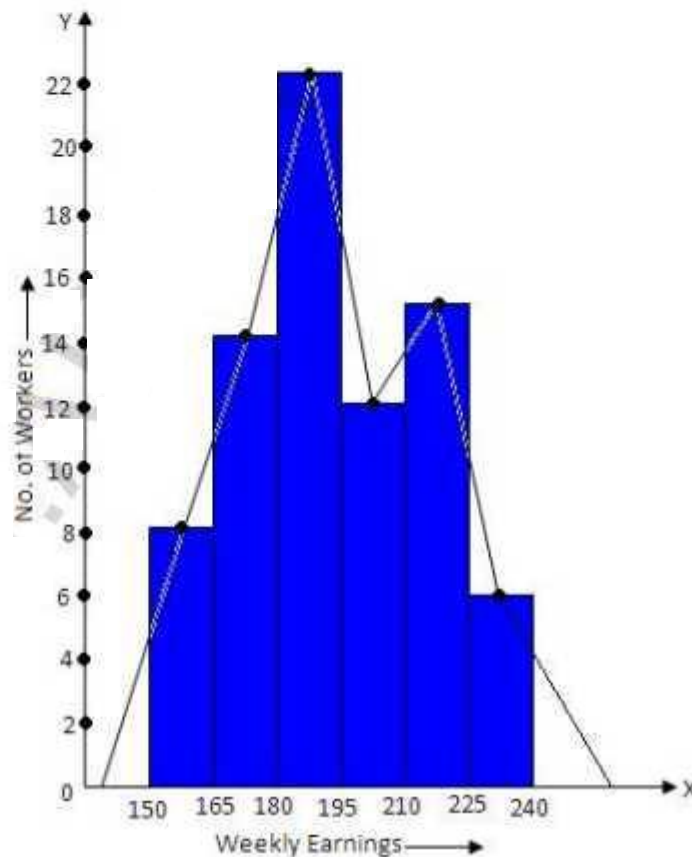
Sol. We are given mid-values (class mark) of each class interval. We represent them in class intervals as 10-15, 15-20, 20-25, 25-30, 30-35 and 35-40 respectively and then draw the histogram.



Q4. Construct a histogram for the following data:

Weekly earning (in rupees)	150-165	165-180	180-195	195-210	210-225	225-240
No. of workers	8	14	22	12	15	6

Sol. We take weekly earnings on x-axis and no. of workers on y-axis then draw the histogram and frequency polygon on the same graph as shown.

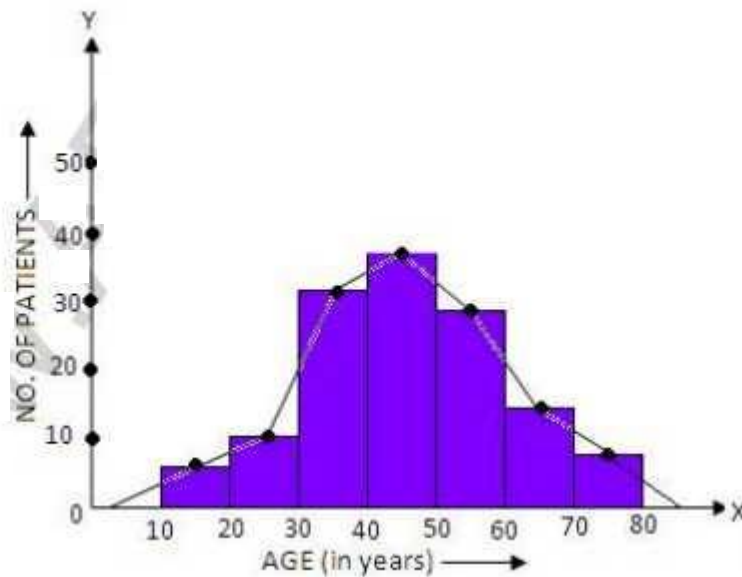


Q5. In a study of diabetic patients, the following data were obtained.

Age (in years)	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of patients	3	8	30	36	27	15	6

Represent the above data by a histogram.

sol. we take age (in years) on x-axis and no. of patients on y-axis and then draw the histogram and frequency polygon on the same graph as shown.

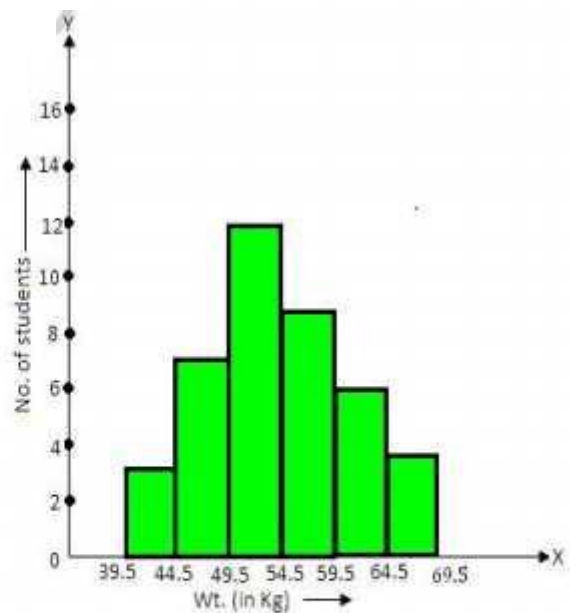


Q6. Draw a histogram for the following data:

Wt. In kg	40-44	45-49	50-54	55-59	60-64	65-69
No. of students	3	7	12	9	6	4

sol. We convert the class interval in continuous form such as 39.5-44.5, 44.5-49.5, 49.5-54.5, 54.5-59.5, 59.5-64.5, 64.5-69.5 and then draw the histogram as shown.

Class intervals	Frequency
39.5-44.5	3
44.5-49.5	7
49.5-54.5	12
54.5-59.5	9
59.5-64.5	6
64.5-69.5	4



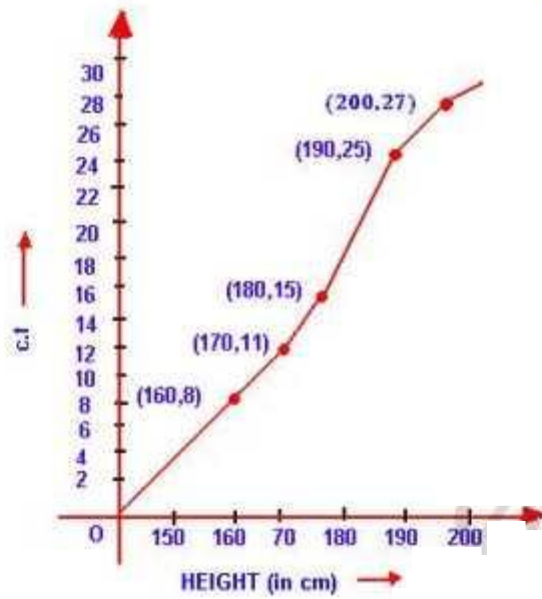
Q7. Draw an ogive for the following frequency distribution.

Height (in cm)	150-160	160-170	170-180	180-190	190-200
No. of students	8	3	4	10	2

Sol. writing in cumulative frequency table:

Height (in cm)	No. of students	c.f.
150-160	8	8
160-170	3	11
170-180	4	15
180-190	10	25
190-200	2	27

Now we take points  $(160, 8)$ ,  $(170, 11)$ ,  $(180, 15)$ ,  $(190, 25)$  and  $(200, 27)$  on the graph and join them with free hand form an ogive.



Q8. Draw an ogive for the following data :

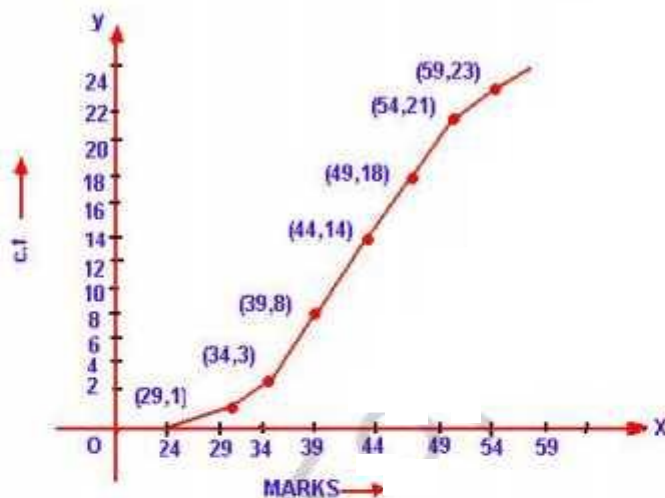
Marks obtained	24-29	29-34	34-39	39-44	44-49	49-54	54-59
No. of students	1	2	5	6	4	3	2

sd. Writing the given data in Cumulative frequency table :

Marks obtained	No. of students (f)	c.f.
24-29	1	1
29-34	2	3
34-39	5	8
39-44	6	14
44-49	4	18
49-54	3	21
54-59	2	23



Now take the points  $(29, 1)$ ,  $(34, 3)$ ,  $(39, 8)$ ,  $(44, 14)$ ,  $(49, 18)$ ,  $(54, 21)$ ,  $(59, 23)$  on the graph and join them in freehand to give the ogive.



Q9. Draw an ogive for the following data:

Class intervals	1-10	11-20	21-30	31-40	41-50	51-60
Frequency	3	5	8	7	6	2

Sol. Writing the given data in cumulative frequency table:

Class	No. of students	Frequency	c.f.
1-10	0.5-10.5	3	3
11-20	10.5-20.5	5	8
21-30	20.5-30.5	8	16
31-40	30.5-40.5	7	23
41-50	40.5-50.5	6	29
51-60	50.5-60.5	2	31

Now take the points  $(10.5, 3)$ ,  $(20.5, 8)$ ,  $(30.5, 16)$ ,  $(40.5, 23)$ ,  $(50.5, 29)$  and  $(60.5, 31)$  on the graph and join them with free hand to form an ogive.

