

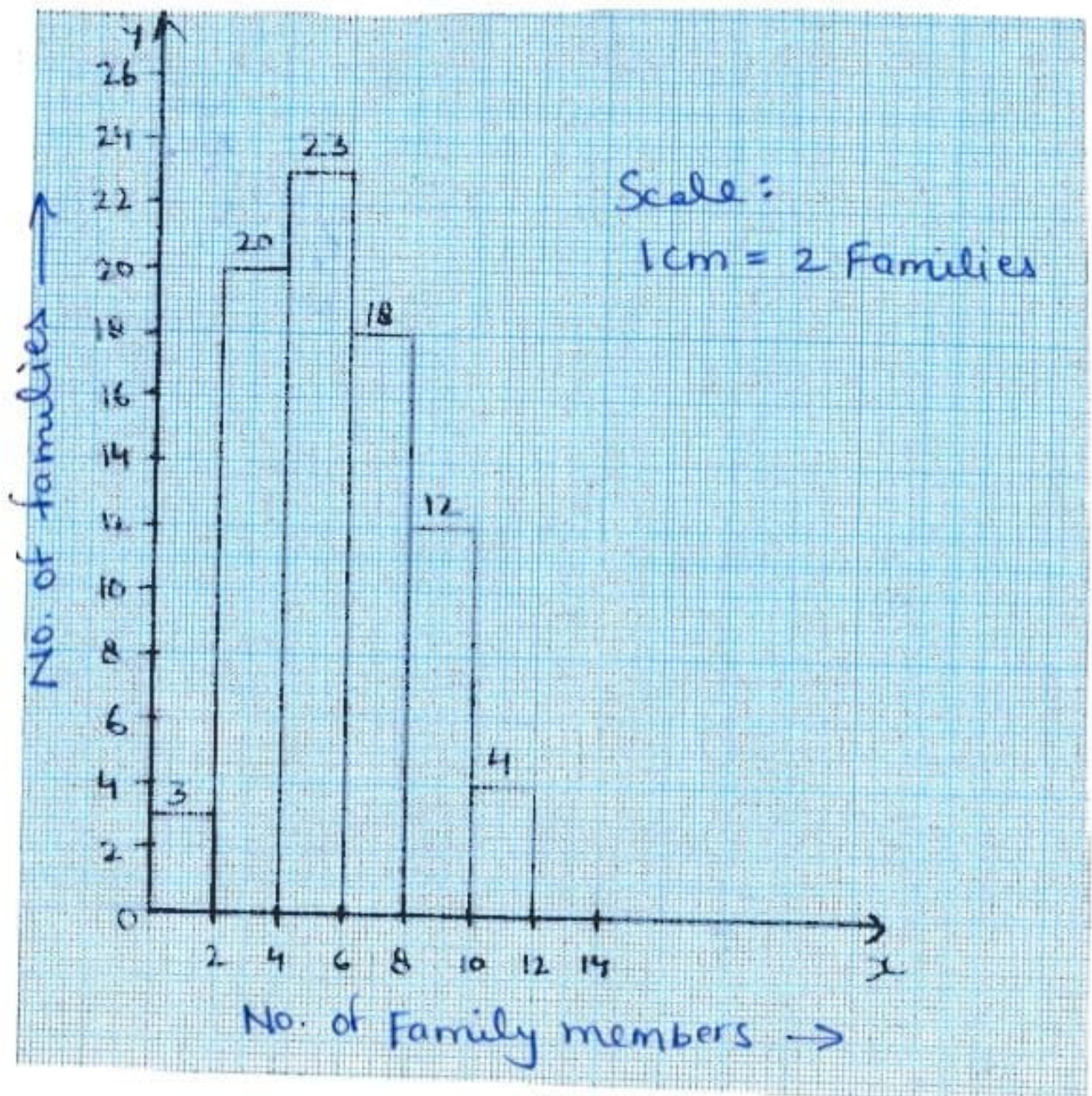
4. Number of members in a family were recorded in a locality. Members in each family are shown below. Arrange the data in a frequency distribution table. Show the data through a histogram.

7, 5, 2, 6, 3, 1, 4, 8, 5, 6, 9, 10, 4, 5, 3, 5, 6, 7, 2, 8, 7, 3, 2, 5, 12, 4, 6, 8, 5, 2, 6, 5, 8, 5, 6, 9, 5, 3, 10, 8, 7, 2, 5, 4, 3, 1, 4, 6, 8, 7, 3, 2, 8, 3, 5, 6, 8, 7, 5, 7, 3, 4, 1, 8, 5, 4, 7, 8, 10, 2, 4, 5, 3, 3, 2, 6, 7, 3, 5, 3.

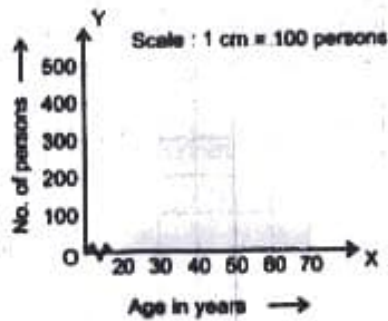
Solution: The frequency distribution table for the above data is given below:



Class Interval	Tally Marks	Frequency
0-2		3
2-4		20
4-6		23
6-8		18
8-10		12
10-12		4
Total		80



5. In a stadium, annual function of the school was being organised, where parents and grandparents of the participants were invited. Number of persons of different age groups who attended the function are shown in the histogram below.



- What was the age group of maximum number of parents who attended the function?
- How many senior citizens attended?
- What was the total number of persons in the function?
- What is the scale used along OY ?

Solution:

(i) The age group of maximum number of parents who attended the function was 30-40.

(ii) Senior citizens means whose age is more than 60 years. Thus, there were 100 senior citizens who attended the function.

(iii) Total number of persons =  $100 + 500 + 350 + 150 + 100 = 1200$

(iv) The scale is 1 cm = 100 persons.

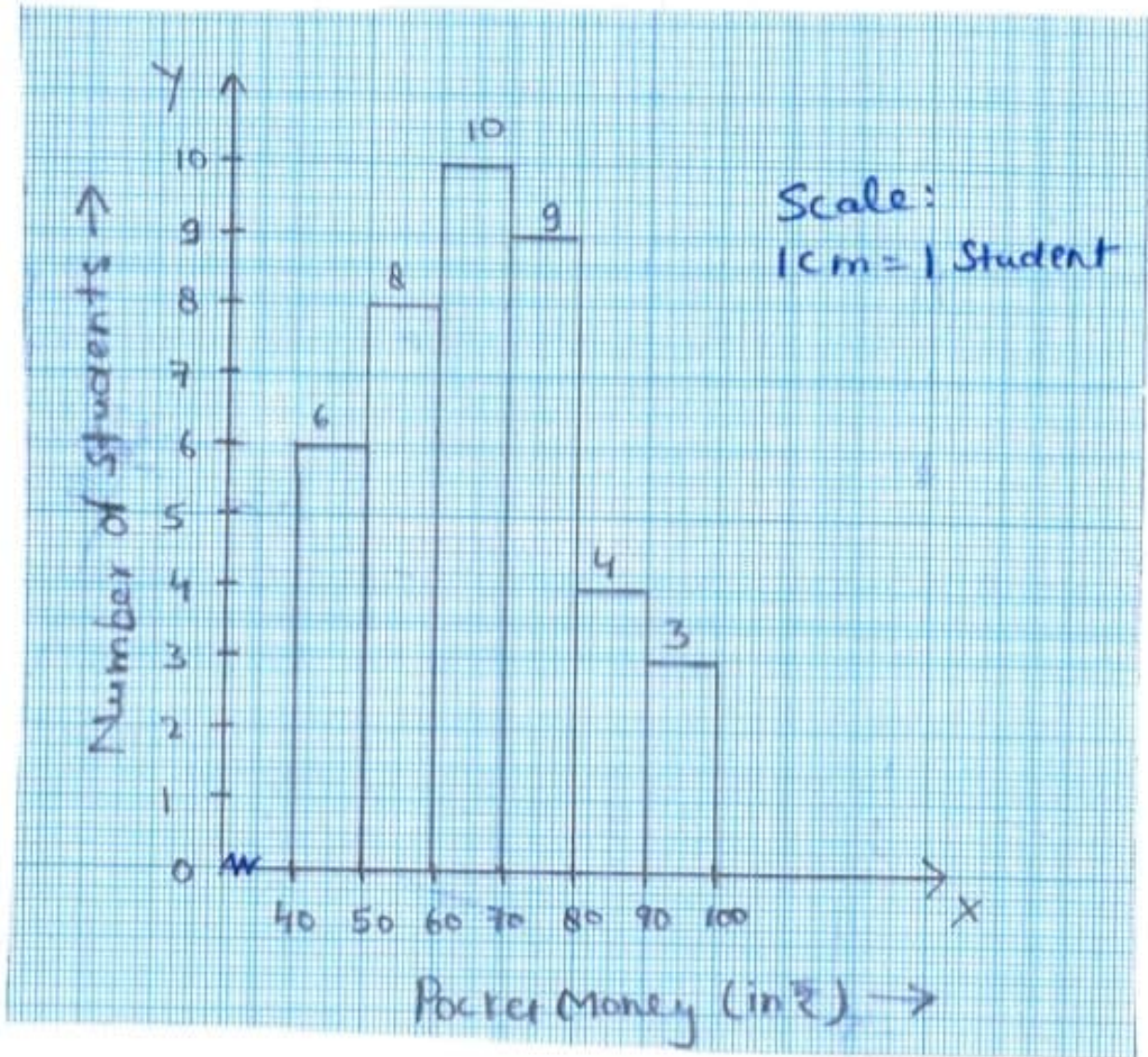


6. Weekly pocket money spent by the students of a class of 40 students is given in a table below. Draw a histogram.

Pocket money (in ₹)	40-50	50-60	60-70	70-80	80-90	90-100
No. of students	6	8	10	9	4	3

If the school is open on 5 days a week, how many students are spending equal to or more than ₹ 10 per day.

Solution: Histogram is shown below:



Number of students who are spending equal to or more than ₹ 10 per day =  $8 + 10 + 9 + 4 + 3$   
 $= 34$

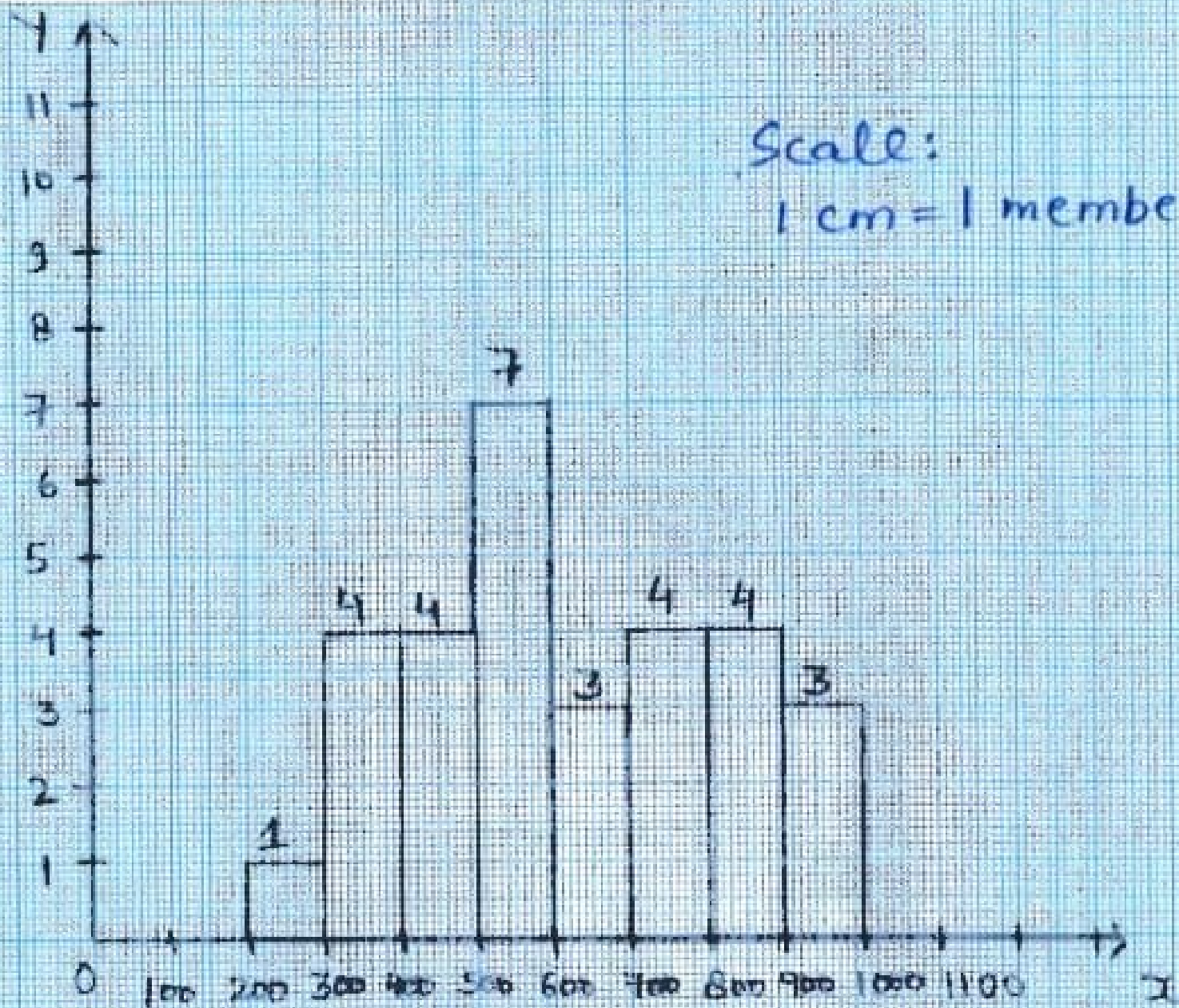
7. The donation for cancer patients were collected by an organisation and the amount (in ₹) collected was deposited in the account of Rajiv Gandhi Memorial Trust. 30 members of the organisation made the following collection. Draw a histogram for the data.  
 600, 500, 850, 725, 540, 350, 900, 1000, 400, 390, 850, 540, 550, 320, 800, 650, 450, 800, 300, 420, 740, 750, 680, 280, 450, 530, 750, 580, 900, 500.

Solution: Frequency distribution table of a given data is shown below:

Class Interval	Tally Marks	Frequency
200-300	I	1
300-400	IIII	4
400-500	I IIII	4
500-600	IIII II	7
600-700	III	3
700-800	IIII	4
800-900	IIII	4
900-1000	III	3
Total		30



No. of members →



Collection Amount (in ₹) →

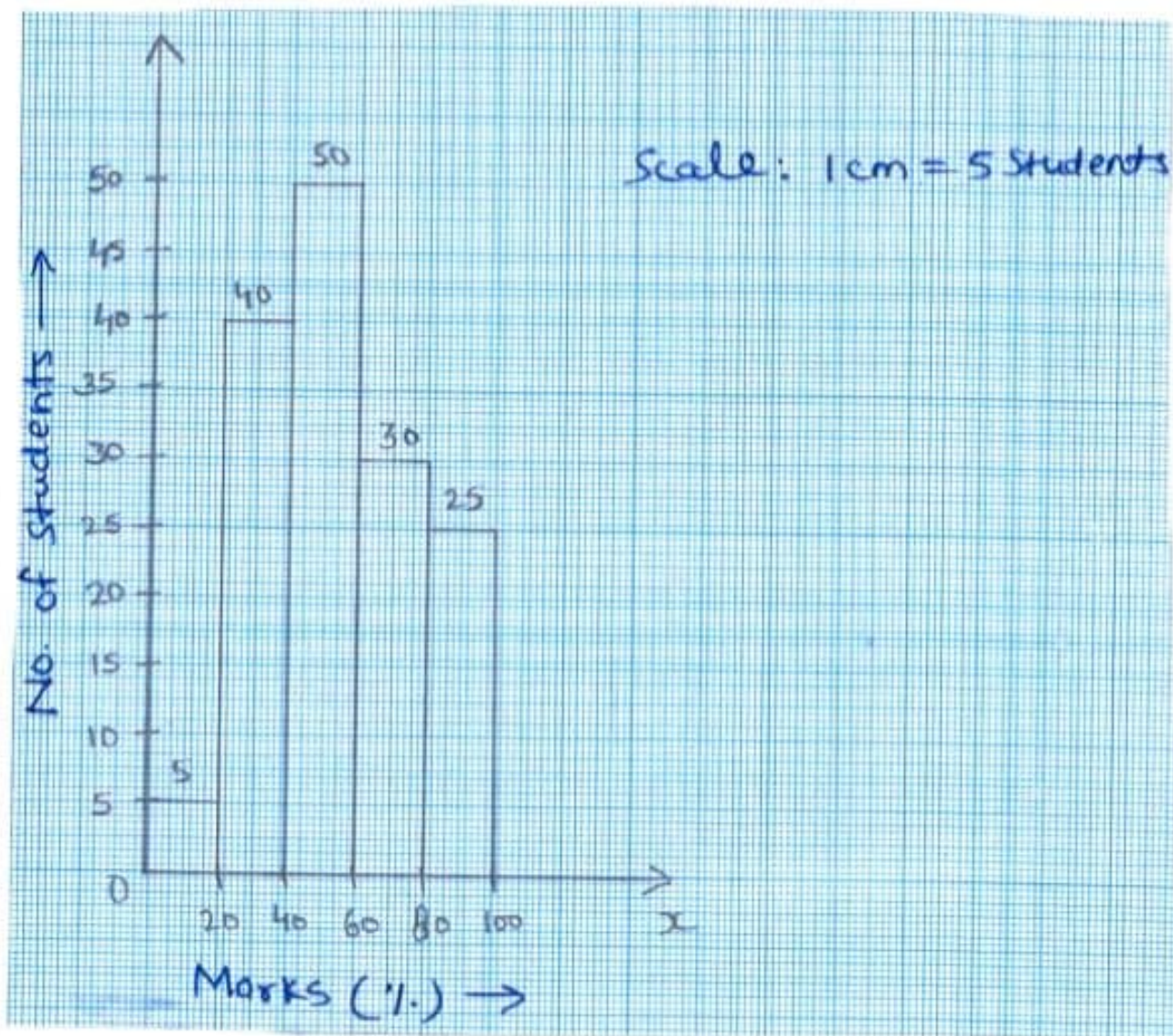
8. 150 students appeared for the CBSE examination of X<sup>th</sup> class. Number of students percentage wise is shown below. Show the result in a histogram.

Marks (per cent)	No. of students
0 - 20	5
20 - 40	40
40 - 60	50
60 - 80	30
80 - 100	25

(i) How many students secured 60% and above?

(ii) How many students secured less than 40%?

Solution: The histogram is shown below:



(i) Number of students who secured 60% and above =  $30 + 25 = 55$



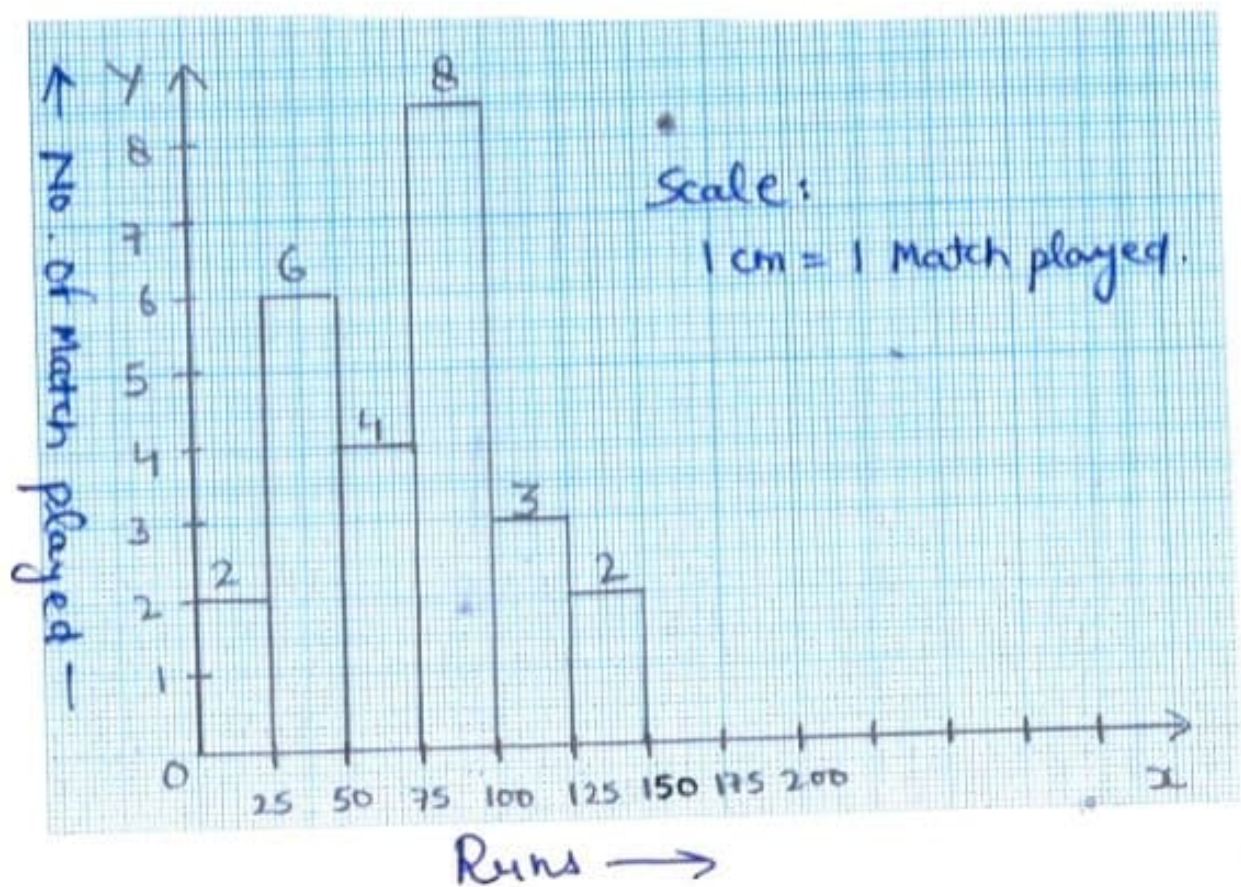
(ii) Number of students who secured less than 40%. =  $5 + 40 = 45$

9. Runs scored by a player during last 25 matches played by him are given in the table below. Show the data by a histogram.

Runs	No. of matches played
0 - 25	2
25 - 50	6
50 - 75	4
75 - 100	8
100 - 125	3
125 - 150	2

- (i) How many centuries were scored by him?  
(ii) In how many matches fifties were missed?

Solution: The histogram is shown below:



- (i) Centuries scored by him were =  $3 + 2 = 5$   
(ii) Number of matches in which fifties missed =  $2 + 6 = 8$

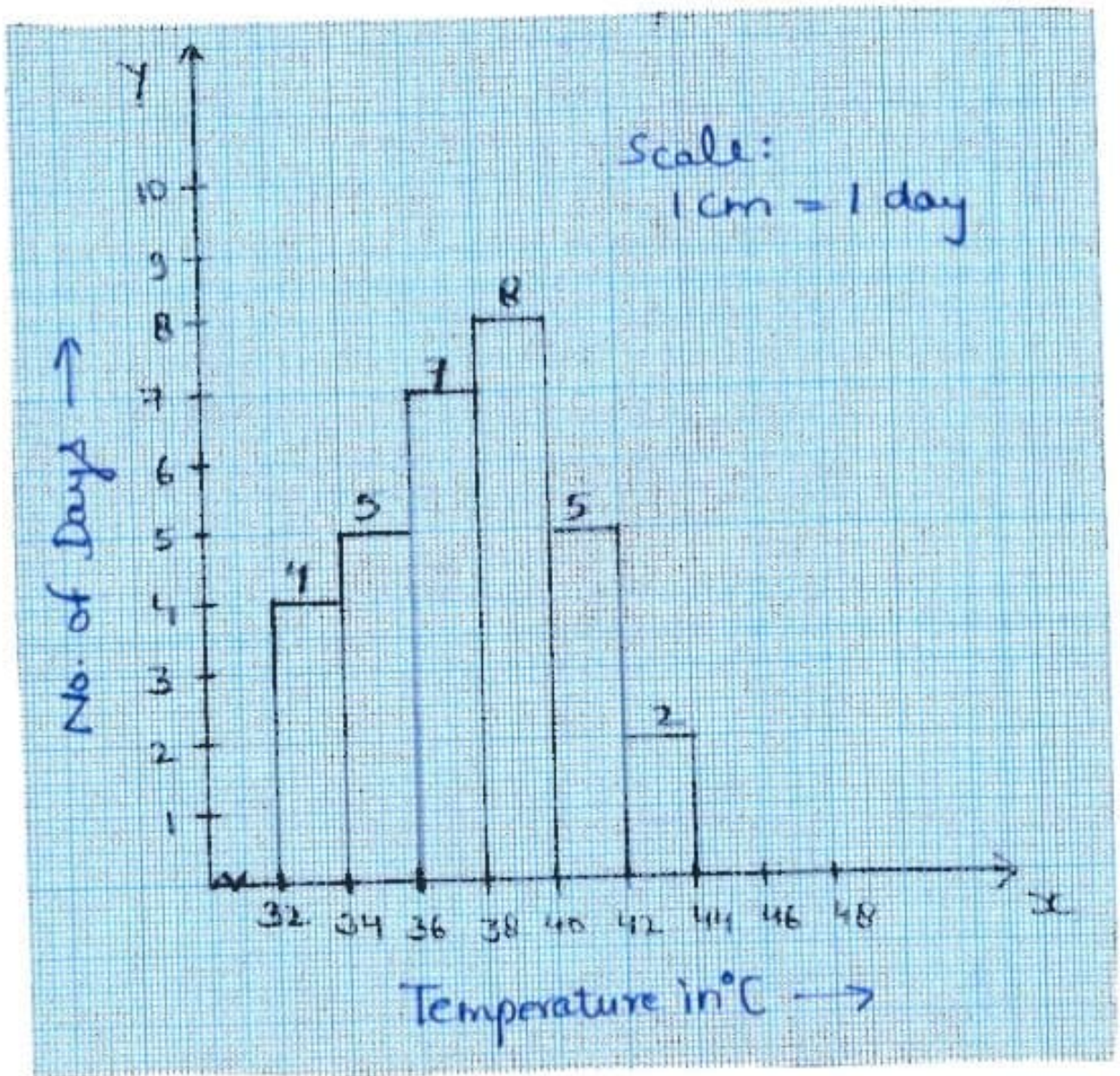


18. Temperatures recorded during the different days of May 2012 are given in the table below.

Temperature in °C	No. of days
32 - 34	4
34 - 36	5
36 - 38	7
38 - 40	8
40 - 42	5
42 - 44	2

Draw a histogram to represent the above data.

Solution: The histogram is shown below:



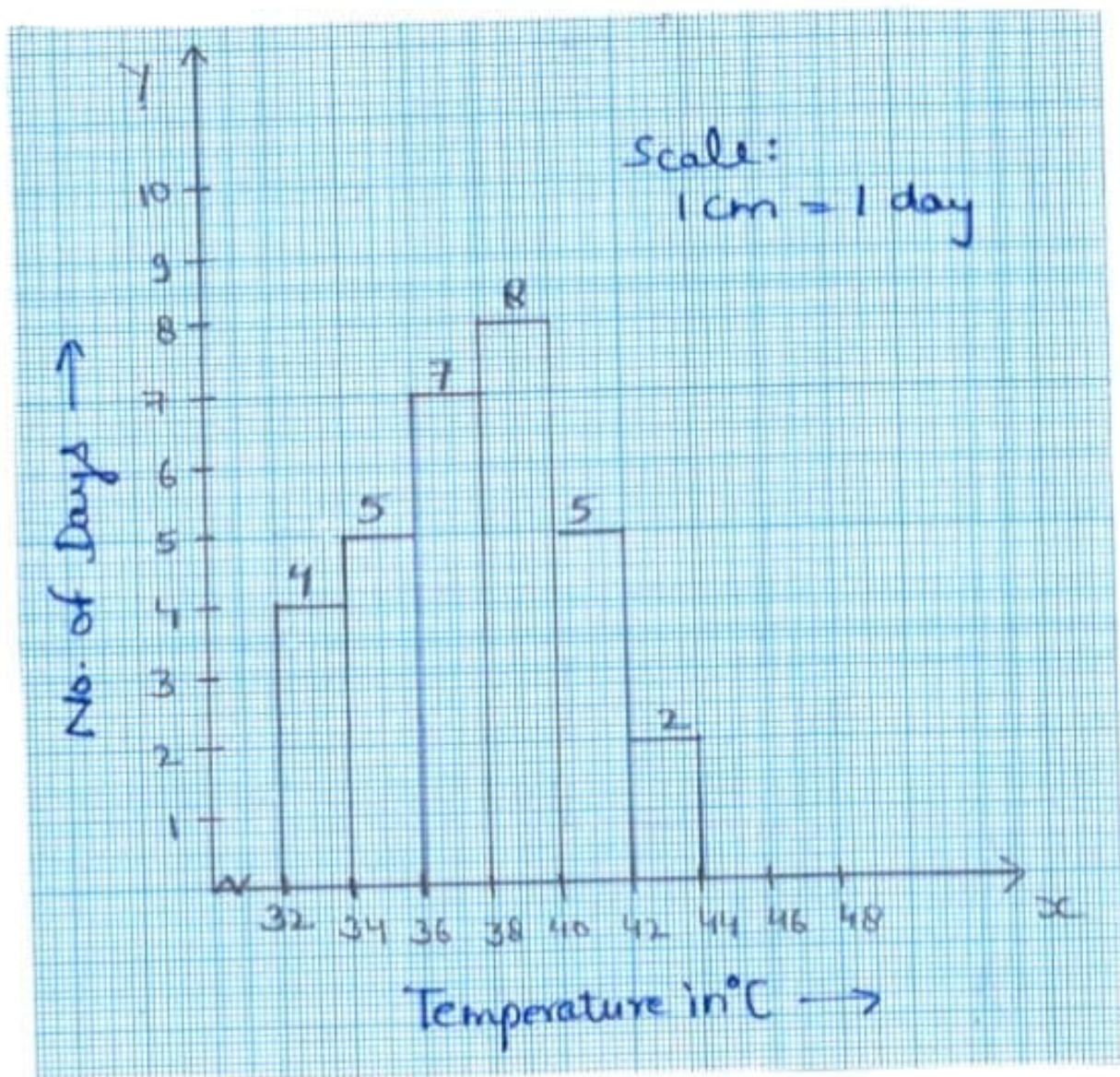


10. Temperatures recorded during the different days of May 2012 are given in the table below.

Temperature in °C	No. of days
32 - 34	4
34 - 36	5
36 - 38	7
38 - 40	8
40 - 42	5
42 - 44	2

Draw a histogram to represent the above data.

Solution: The histogram is shown below:





### EXERCISE 17.3

1. Average time devoted for each subject by a student is given below. Present it by a pie chart.

Subject	English	Maths	Hindi	General Sc.	Social Sc.	Computer Sc.
% of time	20	30	10	20	15	5

If the student studies for 3 hours daily, find :

- How much time does he devote for English ?
- How much time does he devote for Mathematics?

Solution:

Total % of time devoted for all subjects

$$= 20 + 30 + 10 + 20 + 15 + 5 = 100$$

Central angle for a subject

$$= \frac{\% \text{ of time spent on a particular subject}}{\text{Total \% of time}} \times 360^\circ$$

Therefore,

$$\text{Central angle for English} = \frac{20}{100} \times 360^\circ = 72^\circ$$

$$\text{Central angle for Maths} = \frac{30}{100} \times 360^\circ = 108^\circ$$

$$\text{Central angle for Hindi} = \frac{10}{100} \times 360^\circ = 36^\circ$$

Central angle for General science

$$= \frac{20}{100} \times 360^\circ = 72^\circ$$

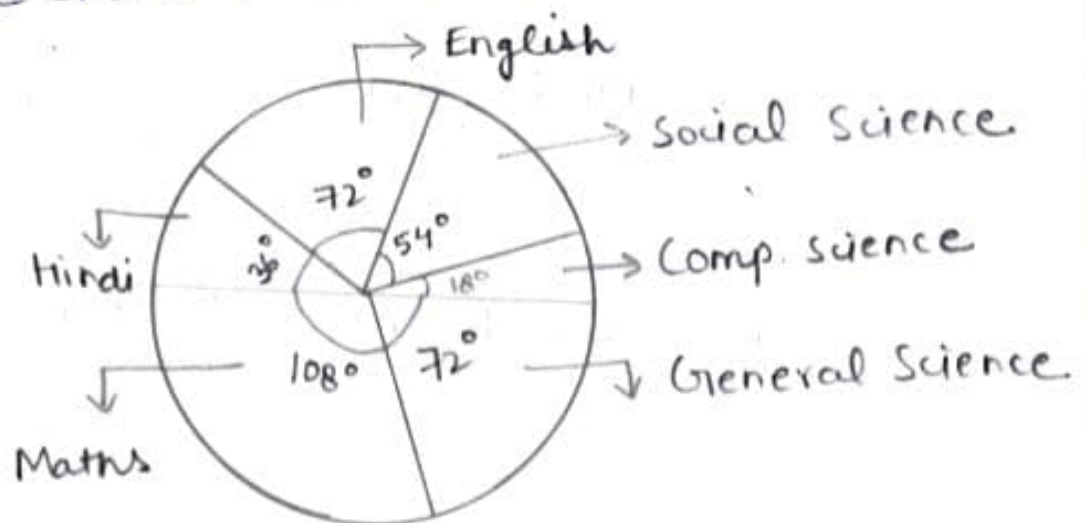
Central angle for social science

$$= \frac{15}{100} \times 360^\circ = 54^\circ$$

central angle for Computer science

$$= \frac{5}{100} \times 360^\circ = 18^\circ$$

The pie chart is shown below:





$$\begin{aligned}
 \text{(i) Time devoted for English} &= \frac{20}{100} \times 3 \text{ hrs} \\
 &= \frac{3}{5} \text{ hours} = \frac{3}{5} \times 60 \text{ min} \\
 &= 36 \text{ minutes.}
 \end{aligned}$$

(ii)

$$\begin{aligned}
 \text{Time devoted for Mathematics} &= \frac{30}{100} \times 3 \text{ hrs} \\
 &= \frac{30 \times 180 \text{ minutes}}{100} \\
 &= 54 \text{ minutes}
 \end{aligned}$$

2. Sameer purchased a plot and constructed his house. The amount spent by Sameer on different wards are given below.

Purchase of land	₹ 5 lakhs
Cement bricks etc.	₹ 14 lakhs
Labour charges	₹ 4 lakhs
Wood work	₹ 6 lakhs
Plumber	₹ 4 lakhs
Electricity	₹ 3 lakhs

Prepare a pie chart for the above data.

Solution: Complete central angle of  $360^\circ$  corresponds to total expenditure.

Total money spent:

$$= ₹(5 + 14 + 4 + 6 + 4 + 3) \text{ lakhs} = ₹ 36 \text{ lakhs}$$

Central angle for purchase of land

$$= \left( \frac{5}{36} \times 360 \right)^\circ = 50^\circ$$

Central angle for cement bricks

$$= \left( \frac{14}{36} \times 360 \right)^\circ = 140^\circ$$

Central angle for labour charges

$$= \left( \frac{4}{36} \times 360 \right)^\circ = 40^\circ$$

Central angle for Wood work

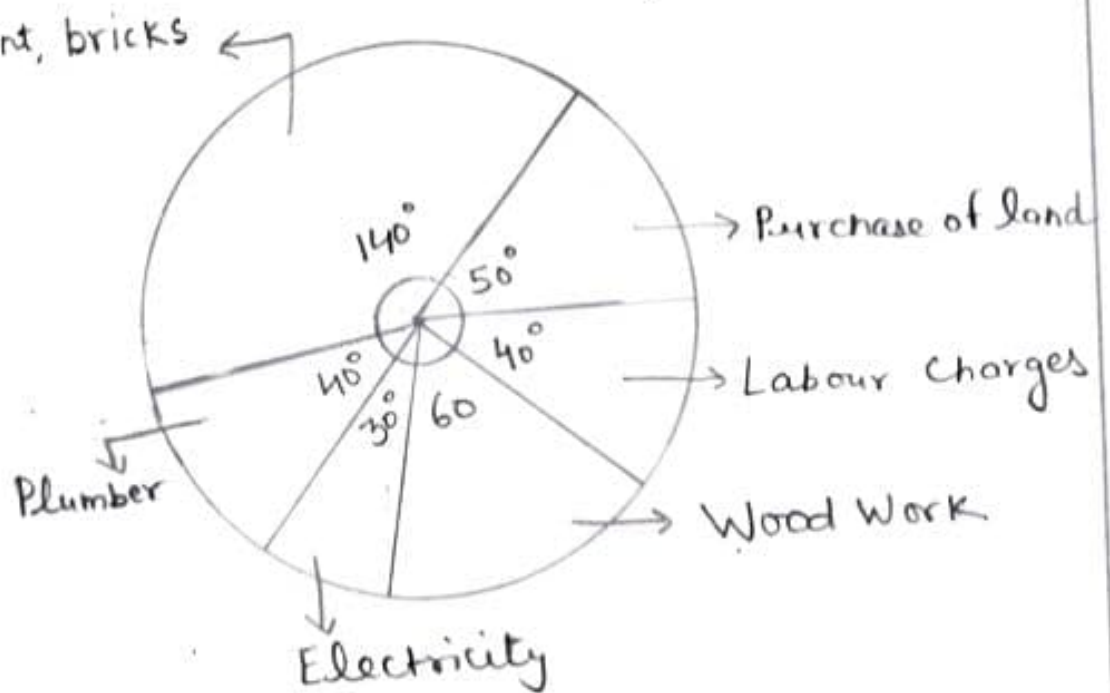
$$= \left( \frac{6}{36} \times 360 \right)^\circ = 60^\circ$$

$$\begin{aligned} \text{Central angle for plumber} &= \left( \frac{4}{36} \times 360 \right)^\circ \\ &= 40^\circ \end{aligned}$$



$$\text{Central angle for electricity} = \left(\frac{3}{36} \times 360\right)^\circ$$

The pie chart is shown below:  $= 30^\circ$



3. Draw a pie chart showing the number of different cars parked in a parking place :

Make of the car	No. of cars
Maruti	200
Accent	100
Esteem	120
Honda City	140
Optra	90
Corolla	70

Solution:

$$\begin{aligned} \text{Total number of cars} &= 200 + 100 + 120 + 140 + 90 \\ &\quad + 70 \\ &= 720 \end{aligned}$$

$$\begin{aligned}\text{Central angle for Maruti} &= \left(\frac{250}{720} \times 360\right)^\circ \\ &= 100^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for Accent} &= \left(\frac{100}{720} \times 360\right)^\circ \\ &= 50^\circ\end{aligned}$$

$$\begin{aligned}\text{Central Angle for Esteem} &= \left(\frac{120}{720} \times 360\right)^\circ \\ &= 60^\circ\end{aligned}$$

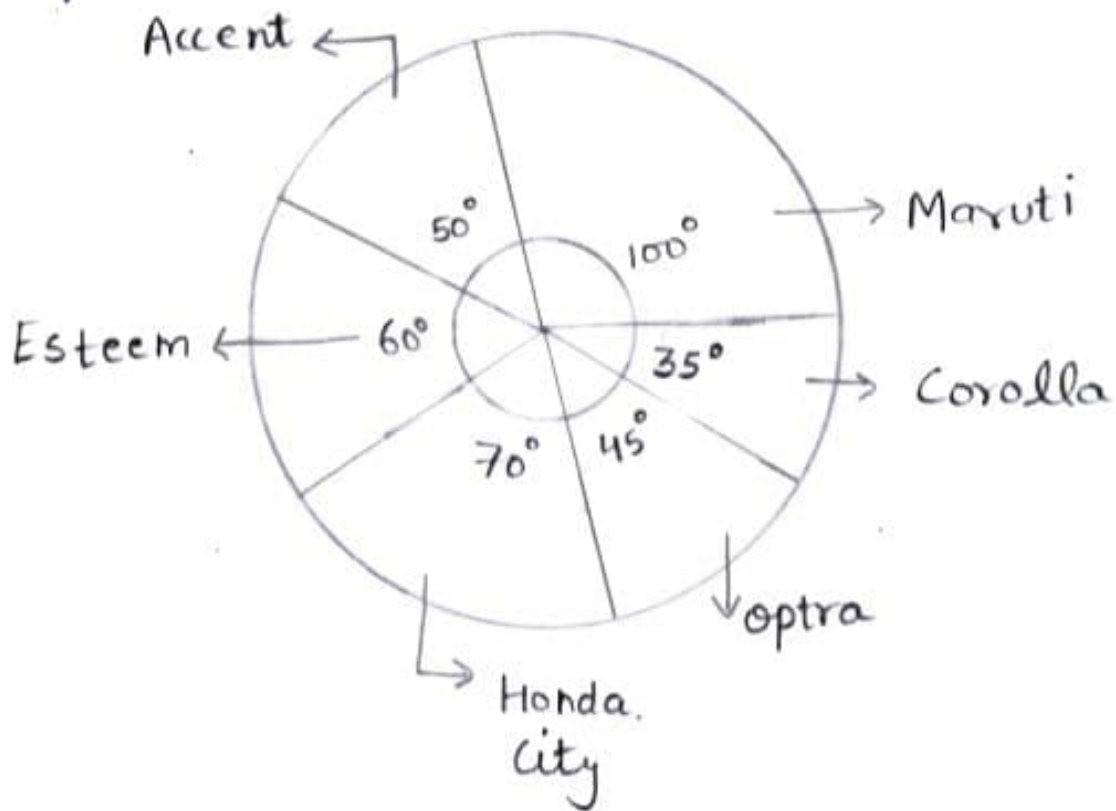
$$\begin{aligned}\text{Central angle for Honda city} &= \left(\frac{140 \times 360}{720}\right)^\circ \\ &= 70^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for optra} &= \left(\frac{90}{720} \times 360\right)^\circ \\ &= 45^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for corolla} &= \left(\frac{70}{720} \times 360\right)^\circ \\ &= 35^\circ\end{aligned}$$



The pie chart is shown below:



4. Cost of mobile phone hand set instrument of different brands is given below. Draw a pie chart to represent the data :

Brand	Cost (in ₹)
Nokia	12,000
Sony	14,000
Samsung	15,000
Reliance	6,000
Tata	7,000

Solution:

$$\begin{aligned} & \text{Total cost of all mobile handsets} \\ & = ₹ (12,000 + 14,000 + 15,000 + 6,000 + 7,000) \\ & = ₹ 54,000 \end{aligned}$$

$$\begin{aligned}\text{Central angle for Nokia} &= \left( \frac{12000}{54000} \times 360 \right)^\circ \\ &= 80^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for Sony} &= \left( \frac{14000}{54000} \times 360 \right)^\circ \\ &= 93.33^\circ\end{aligned}$$

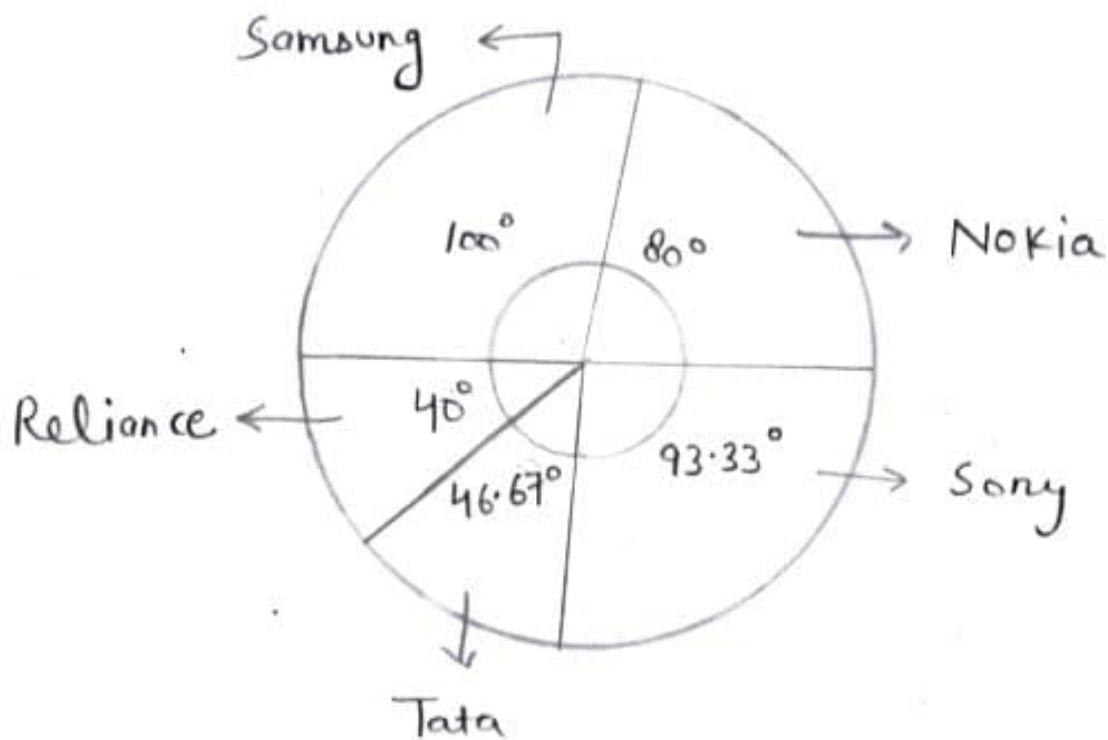
$$\begin{aligned}\text{Central angle for Samsung} &= \left( \frac{15000}{54000} \times 360 \right)^\circ \\ &= 100^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for Reliance} &= \left( \frac{6000}{54000} \times 360 \right)^\circ \\ &= 40^\circ\end{aligned}$$

$$\begin{aligned}\text{Central angle for Tata} &= \left( \frac{7000}{54000} \times 360 \right)^\circ \\ &= 46.67^\circ\end{aligned}$$

The pie chart is shown below.





5. Number of children visiting sports club for different activities has the following record :

Activities	No. of children
Gymnastics	120
Aerobics	100
Swimming	150
Skating	240
Table tennis	110

Draw a pie chart to represent the above data.

Solution:

$$\begin{aligned}
 \text{Total number of children} &= 120 + 100 + 150 + 240 + 110 \\
 &= 720
 \end{aligned}$$

$$\text{Central angle for Gymnastics} = \left(\frac{120}{720} \times 360\right)^\circ$$
$$= 60^\circ$$

$$\text{Central angle for Aerobics} = \left(\frac{100}{720} \times 360\right)^\circ$$
$$= 50^\circ$$

$$\text{Central angle for swimming} = \left(\frac{150}{720} \times 360\right)^\circ$$
$$= 75^\circ$$

$$\text{Central angle for Skating} = \left(\frac{240}{720} \times 360\right)^\circ$$
$$= 120^\circ$$

$$\text{Central angle for table tennis} = \left(\frac{110}{720} \times 360\right)^\circ$$
$$= 55^\circ$$

The pie-chart is shown below:

