

Chapter - 15

Statistics and Probability

WS-1

Q1:

Ages	Tally marks	Frequency
12		5
13		9
14		12
15		4
	Total	30

Q3:

Wages (₹)	Tally Marks	Frequency
150		3
200		5
250		4
300		2
350		1

- (i) Range of wages = ₹(350 - 150) = ₹200
 (ii) 2 workers
 (iii) 1 worker

Q4:

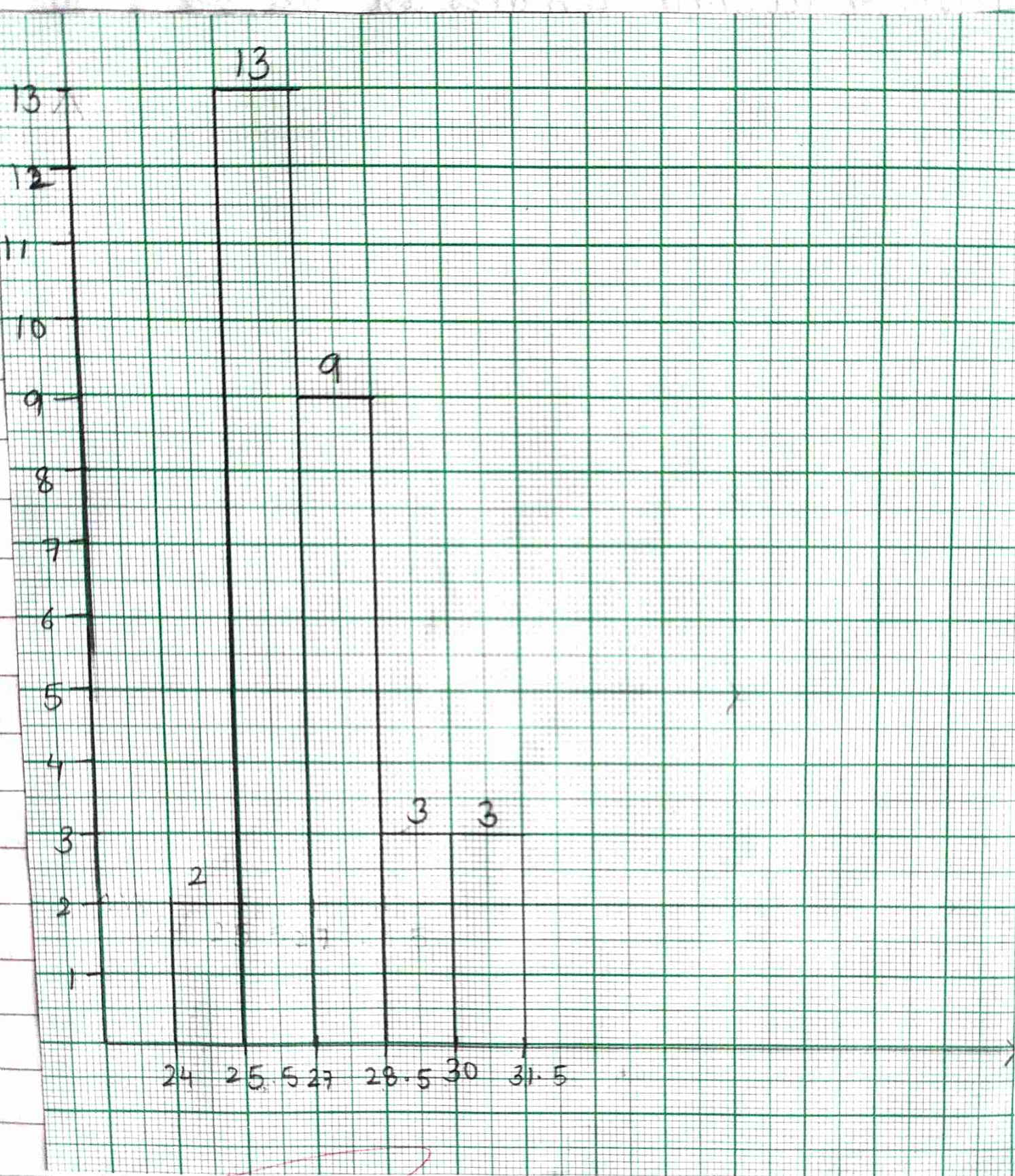
Class Intervals	Tally Marks	Frequency
24 - 25.5		2
25.5 - 27		13
27 - 28.5		9
28.5 - 30		3
30 - 31.5		3
	Total = 30	

(i) 25.5 - 27

$$\text{Class size} = 27 - 25.5 = 1.5$$

$$\text{Class mark} = \frac{25.5 + 27}{2}$$

$$= \frac{52.5}{2} = 26.25$$



Q 5: (i) No. of literate females in different age group

(ii) (20-25) yrs

(iii) (45-55) yrs

(iv) $300 + 900 + 1000 + 400 + 250 =$

Q 6: On book

Q 7:

Class Intervals	Tally marks	Frequency
60-65	 	5
65-70		3
70-75	 	12
75-80	 	7
80-85		3

(i) 75

(ii) Class marks are

$$\frac{60+65}{2} = \frac{125}{2} = 62.5$$

$$\frac{65+70}{2} = \frac{135}{2} = 67.5$$

$$\frac{70+75}{2} = \frac{145}{2} = 72.5$$

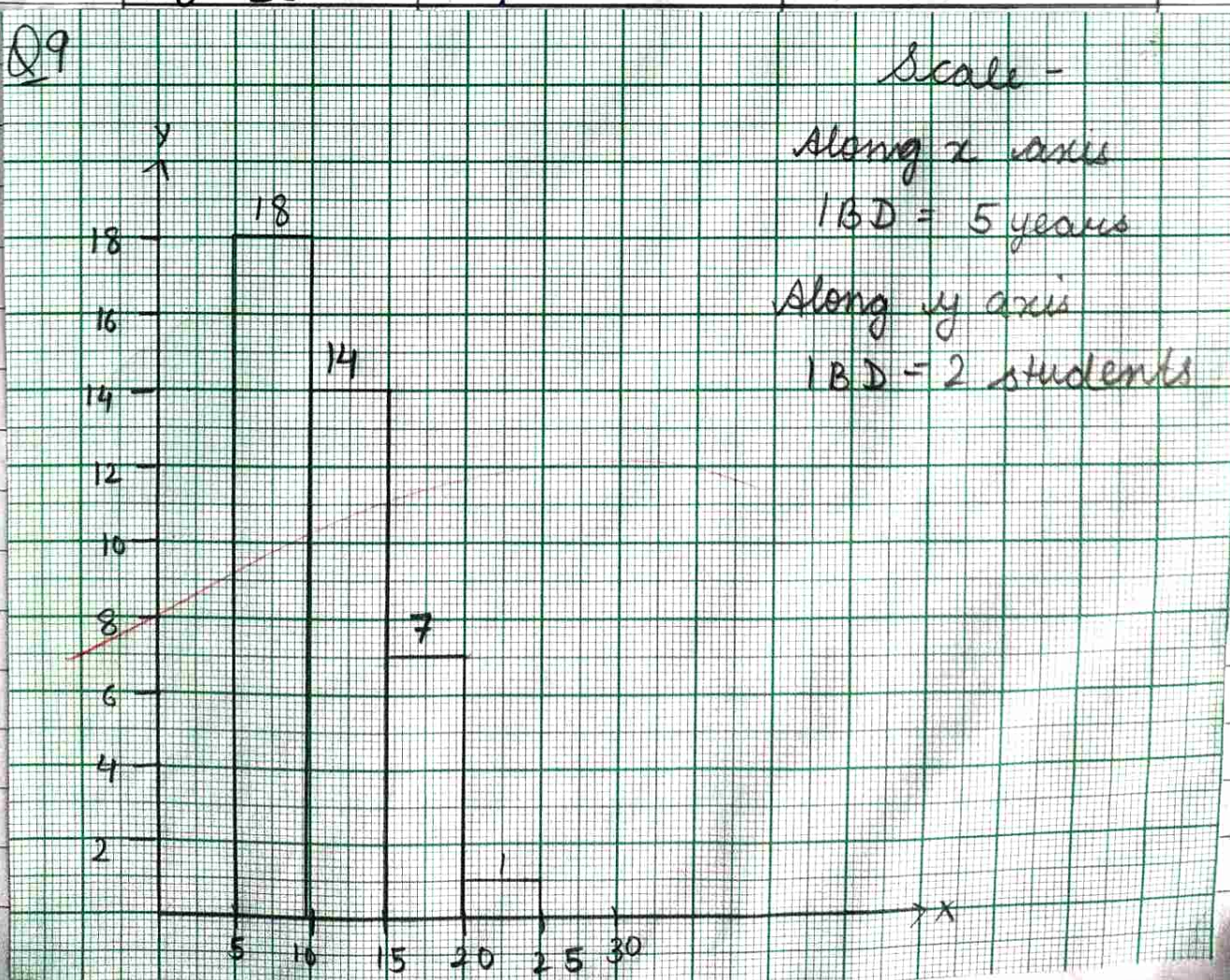
$$\frac{75+80}{2} = \frac{155}{2} = 77.2$$

$$\frac{80+85}{2} = \frac{165}{2} = 82.5$$

Q9:

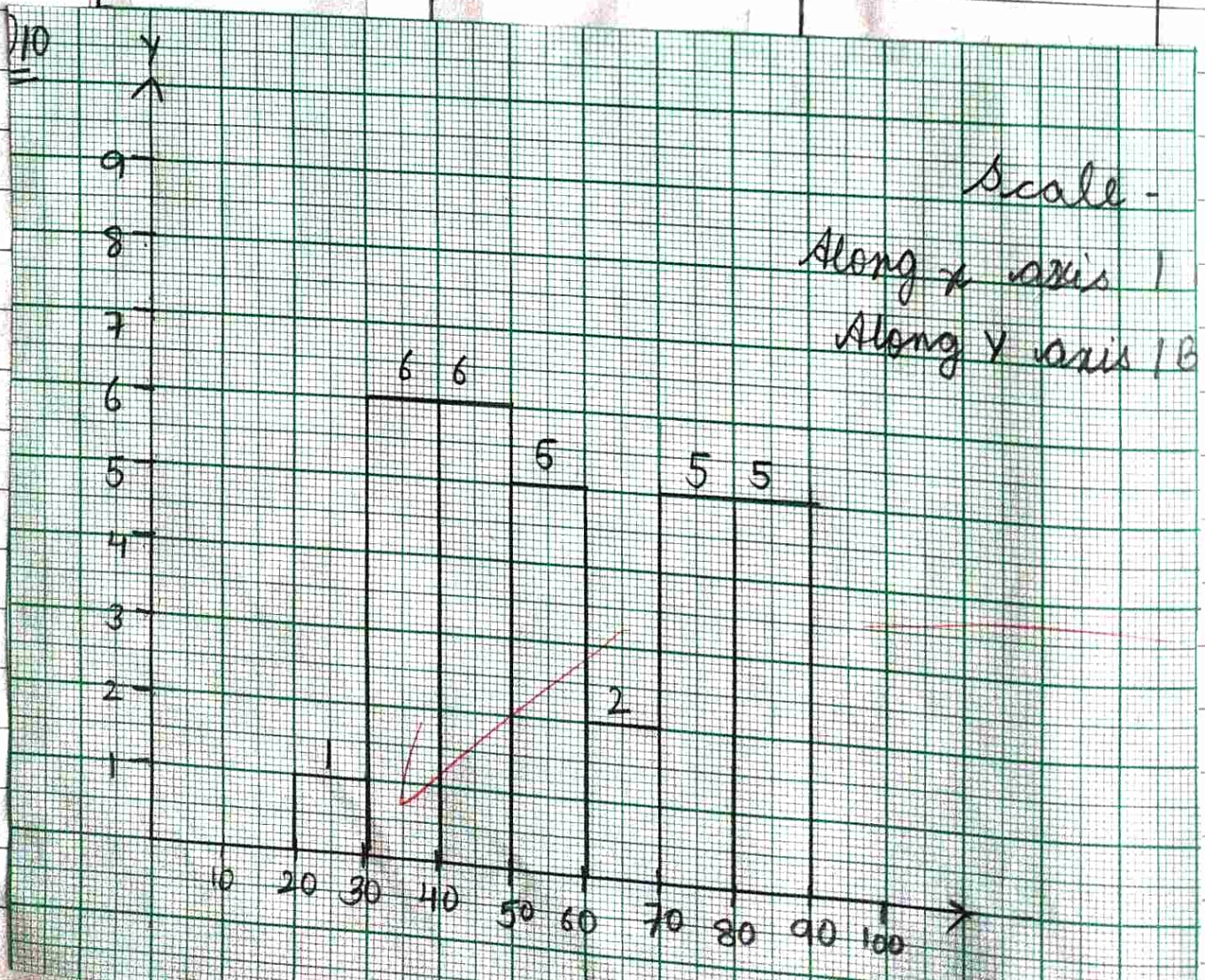
Ages	Tally marks	frequency
5-10		18
10-15		14
15-20		7
20-25		1

Q9

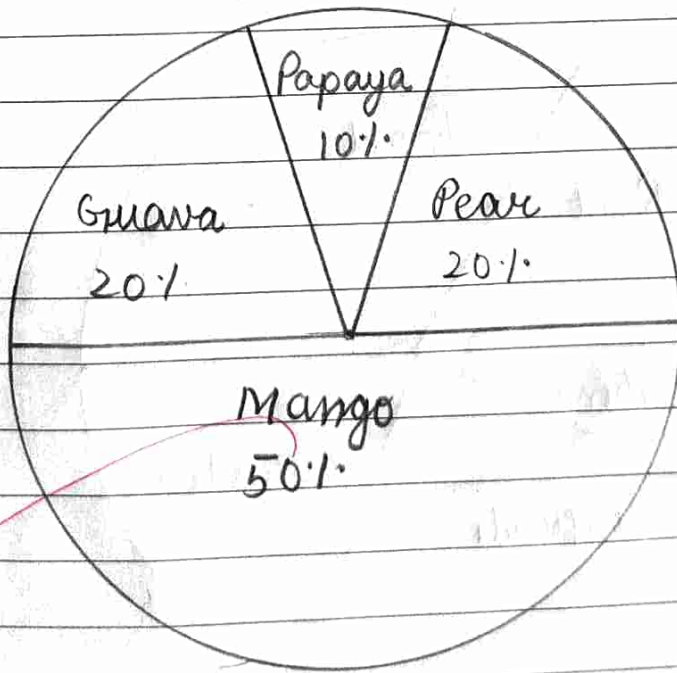


Q10:

Savings (₹)	Tally Marks	Frequency
20-30		1
30-40		6
40-50		6
50-60		5
60-70		2
70-80		5
80-90		5

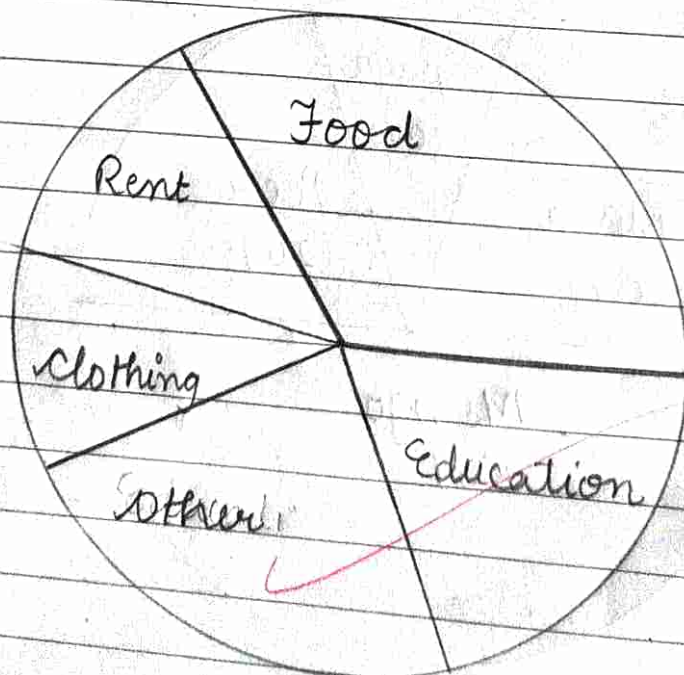


Q1: Tree	Percentage	Fraction	Sector Angle
Mango	50	$\frac{50}{100} = \frac{1}{2}$	$\frac{1}{2} \times 360 = 180^\circ$
Pear	20	$\frac{20}{100} = \frac{1}{5}$	$\frac{1}{5} \times 360 = 72^\circ$
Guava	20	$\frac{20}{100} = \frac{1}{5}$	$\frac{1}{5} \times 360 = 72^\circ$
Papaya	10	$\frac{10}{100} = \frac{1}{10}$	$\frac{1}{10} \times 360 = 36^\circ$

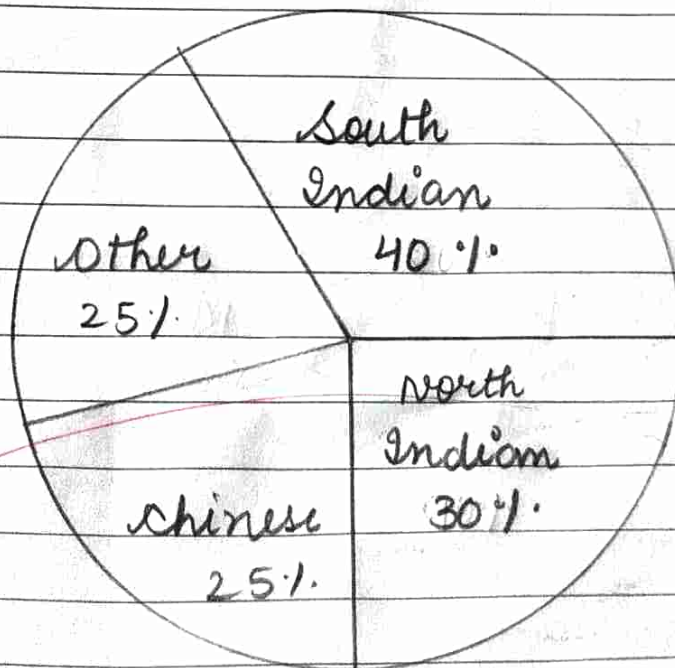


Q2:

Items	Amt. (₹)	Fraction	Sector angle
Rent	₹1500	$\frac{1500}{10800} = \frac{5}{36}$	$\frac{5}{36} \times 360 = 50^\circ$
Food	₹3600	$\frac{3600}{10800} = \frac{1}{3}$	$\frac{1}{3} \times 360 = 120^\circ$
clothing	₹1200	$\frac{1200}{10800} = \frac{1}{9}$	$\frac{1}{9} \times 360 = 40^\circ$
Education	₹2100	$\frac{2100}{10800} = \frac{7}{36}$	$\frac{7}{36} \times 360 = 70^\circ$
Others	₹2400	$\frac{2400}{10800} = \frac{2}{9}$	$\frac{2}{9} \times 360 = 80^\circ$



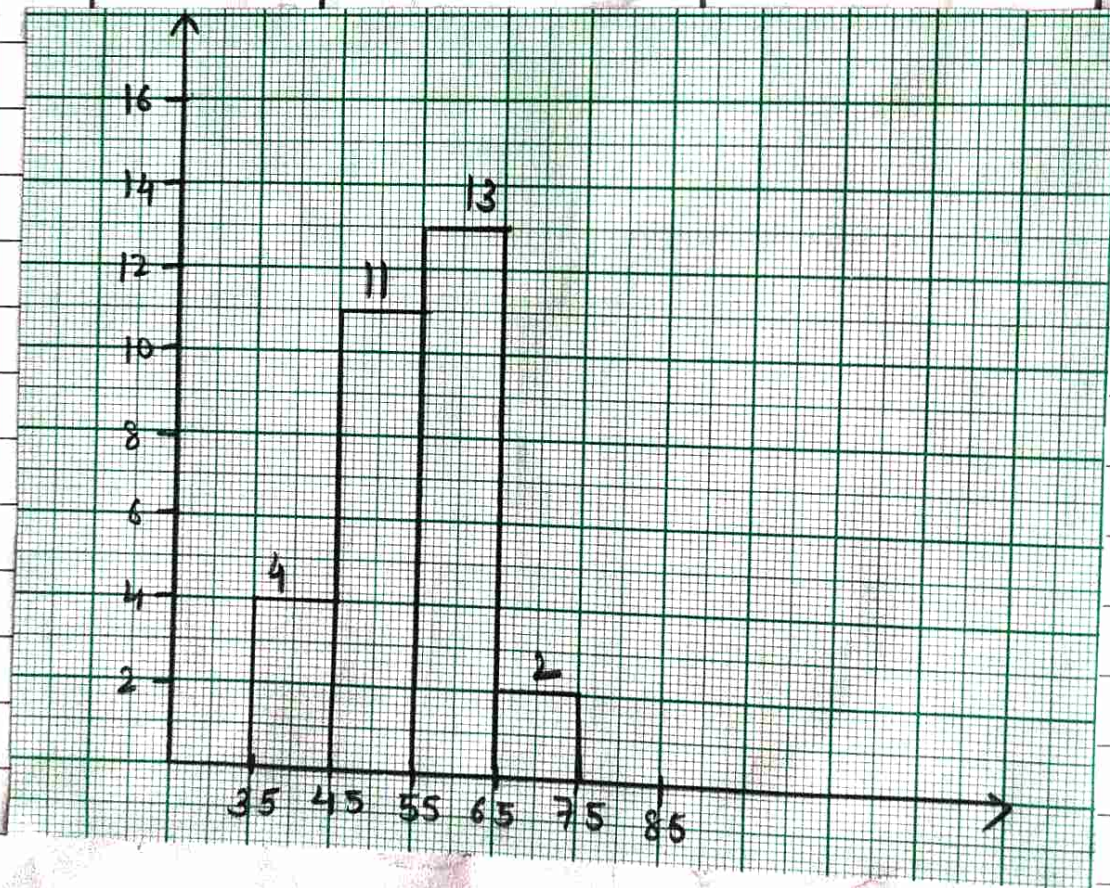
Food	No. of People	Fraction	Sector angle
North Indian	30	$\frac{30}{120} = \frac{1}{4}$	$\frac{1}{4} \times 360 = 90^\circ$
South Indian	40	$\frac{40}{120} = \frac{1}{3}$	$\frac{1}{3} \times 360 = 120^\circ$
Chinese	25	$\frac{25}{120} = \frac{5}{24}$	$\frac{5}{24} \times 360 = 75^\circ$
Other	25	$\frac{25}{120} = \frac{5}{24}$	$\frac{5}{24} \times 360 = 75^\circ$



Value Based Questions

Q1: a)

Wt. (kg)	Tally Marks	Frequency
35-45		4
45-55	 	11
55-65	 	13
65-75		2



b) 55-65

c) 11

d) $\frac{15}{30} \times 100 = 50\%$

e) Junk food, overeating, no exercise etc

f) By motivating them to eat nutritious food

Brain Teasers

Q 5(i) Total money spent on football = ₹ 5000

let total money spent on sports be ₹x

$$\text{fraction of football} = \frac{5000}{x}$$

ATQ

$$\frac{5}{36} = \frac{5000}{x}$$

$$\Rightarrow 5x = 5000 \times 36$$

$$\Rightarrow x = \frac{5000 \times 36}{5}$$

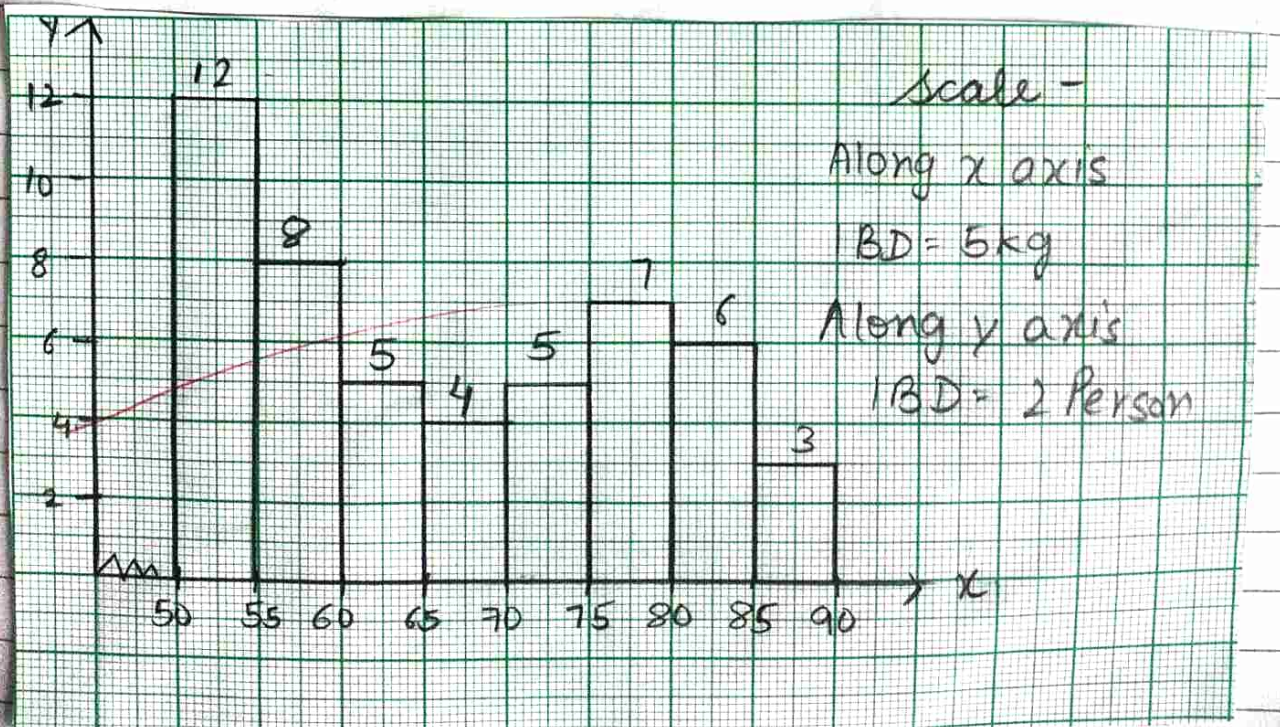
$$\Rightarrow x = 36000$$

(ii) Money spent on hockey = $\frac{100}{360} \times 36000$

₹ 10,000

(iii) Money spent on cricket than hockey =
₹ (16000 - 10000) = ₹ 6000

Q4:

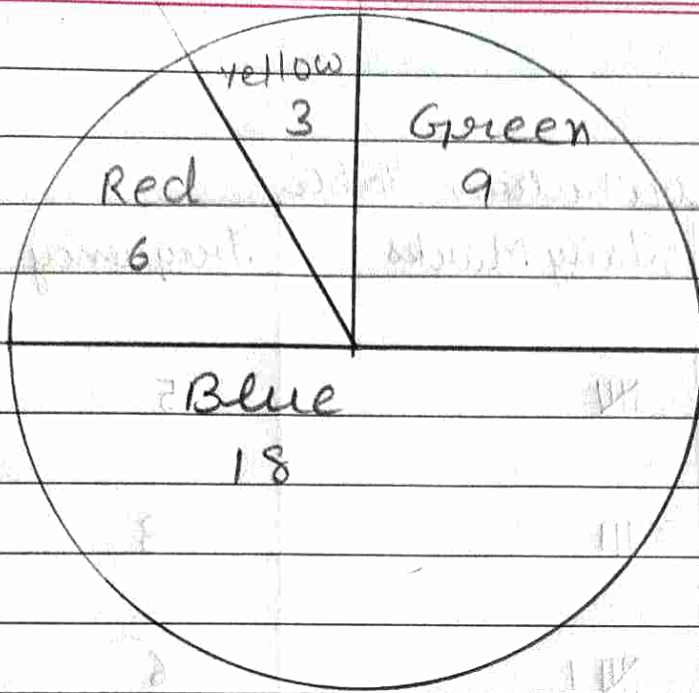


Q3: Frequency Distribution Table

Water bill (₹)	Tally Marks	Frequency
1-15		2
15-30		2
30-45		4
45-60		2
60-75		4
75-90		4
90-105		3
105-120		4

Q6:

Colours	No. of People	Fraction	Sector Angle
Blue	18	$\frac{18}{36} = \frac{1}{2}$	$\frac{1}{2} \times 360 = 180^\circ$
Green	9	$\frac{9}{36} = \frac{1}{4}$	$\frac{1}{4} \times 360 = 90^\circ$
Red	6	$\frac{6}{36} = \frac{1}{6}$	$\frac{1}{6} \times 360 = 60^\circ$
Yellow	3	$\frac{3}{36} = \frac{1}{12}$	$\frac{1}{12} \times 360 = 30^\circ$



HOTS

Total no. of students = 1500

Sector angle of cricket + sector angle of Tennis = 180°

Sector angle of tennis = $180^\circ - 120^\circ = 60^\circ$ (Linear Pair)

$120^\circ + \text{Sector angle of hockey} + \text{football} = 60^\circ$

(Vertically opposite angles)

Angle of hockey = $60^\circ - 40^\circ = 20^\circ$

Students for hockey = $\frac{20}{360} \times 1500 = \frac{1500}{18}$

No. of students for badminton = $\frac{120}{360} \times 1500 = 500$

\therefore Required Ratio = $1500 \div 500$

$$= \frac{18}{1} \times \frac{1}{500} = \frac{1}{6}$$

$$= 1:6$$

Frequency Distribution Table

Amount of Bill	Tally Marks	Frequency
300 - 400		5
400 - 500		3
500 - 600		6
600 - 700		4
700 - 800		7
		Total - 25

