

21. Data Handling

Exercise 21A

1. Question

The number of members in 20 families are given below:

4, 6, 5, 5, 4, 6, 3, 3, 5, 5, 3, 5, 4, 4, 6, 7, 3, 5, 5, 7.

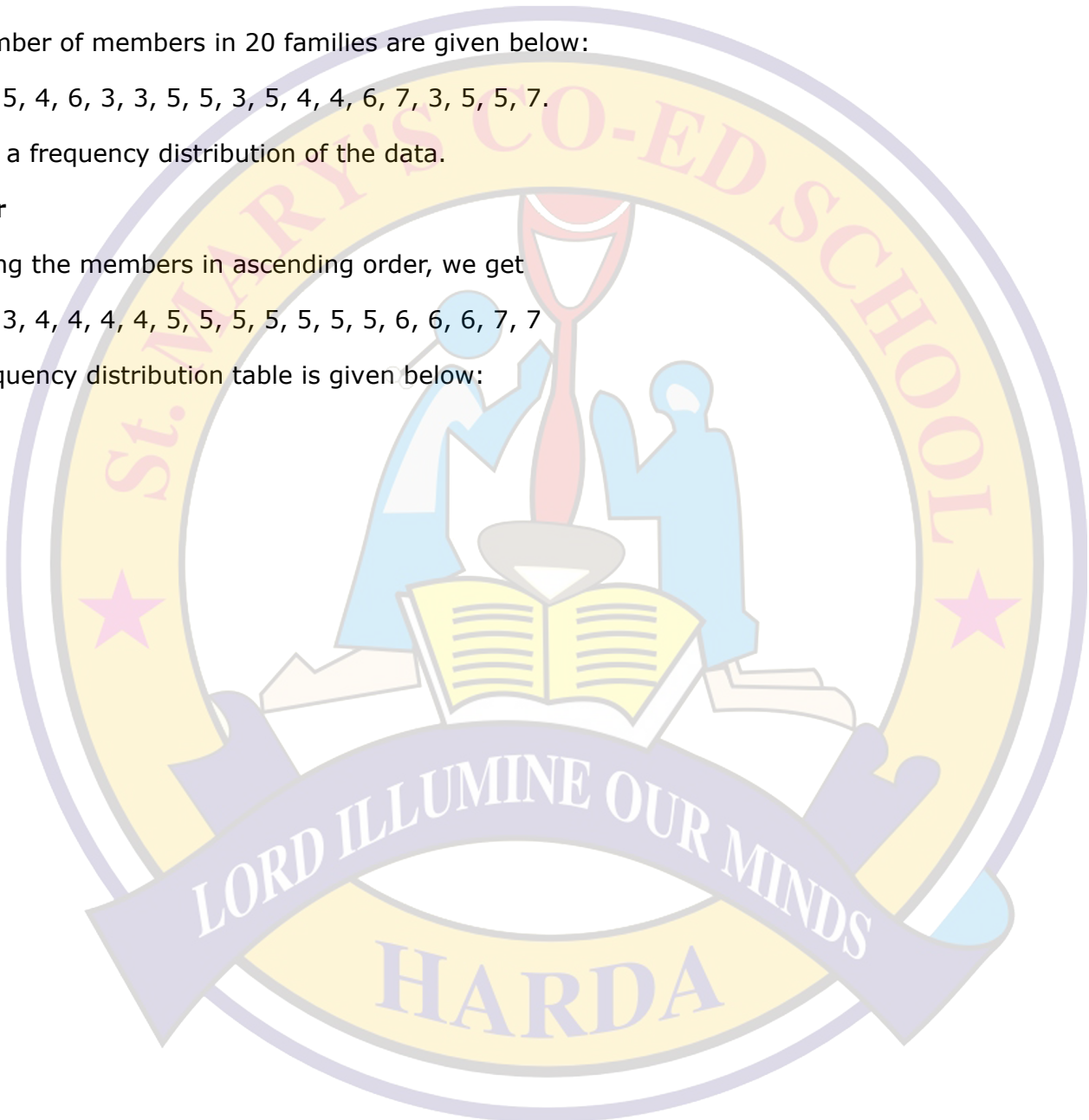
Prepare a frequency distribution of the data.

Answer

Arranging the members in ascending order, we get

3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5, 5, 5, 6, 6, 6, 7, 7

The frequency distribution table is given below:



Number of Members	Tally Marks	Number of Families (Frequency)
3	IIII	4
4	IIII	4
5	IIII	7
6	III	3
7	II	2
	Total	20

2. Question

A dice was thrown 30 times and the following outcomes were noted:

2, 1, 2, 4, 6, 1, 2, 3, 6, 5, 4, 4, 3, 1, 1, 3, 1, 1, 5, 6, 6, 2, 2, 3, 4, 2, 5, 5, 6, 4.

Prepare a frequency table.

Answer

Arranging the outcomes of dice in ascending order, we get

1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 4, 4, 5, 5, 5, 5, 6, 6, 6, 6, 6

The frequency distribution table is given below:

Number of Dice	Tally Marks	Number of Outcomes (Frequency)
1		6
2		6
3	IIII	4
4		5
5	IIII	4
6		5
	Total	30

3. Question

The following data gives the number of children in 40 families:

1, 2, 6, 5, 1, 5, 1, 3, 2, 6, 2, 3, 4, 2, 0, 4, 4, 3, 2, 2, 0, 0, 1, 2, 2, 4, 3, 2, 1, 0, 5, 1, 2, 4, 3, 4, 1, 6, 2, 2.

Represent it in the form of a frequency distribution.

Answer

In the question, the data of the number of children in 40 families is given as:

1, 2, 6, 5, 1, 5, 1, 3, 2, 6, 2, 3, 4, 2, 0, 4, 4, 3, 2, 2, 0, 0, 1, 2, 2, 4, 3, 2, 1, 0, 5, 1, 2, 4, 3, 4, 1, 6, 2, 2.

On arranging the children in ascending order, we get,

0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 6, 6, 6

Now, we plot this data in a frequency distribution table as given below:

Number of Children	Tally Marks	Number of Families (Frequency)
0		4
1		7
2		12
3		5
4		6
5		3
6		3
Total		40

Exercise 21B

1. Question

The marks obtained by 40 students of a class in an examination are given below:

8, 47, 22, 31, 17, 13, 38, 26, 3, 34, 29, 11, 22, 7, 15, 24, 38, 31, 21, 35, 42, 24, 45, 23, 21, 27, 29, 49, 25, 48, 21, 15, 18, 27, 19, 45, 14, 34, 37, 34.

Prepare a frequency distribution table with equal class intervals, starting from 0-10 (where 10 is not included).

Answer

The frequency distribution table is given as:

Marks	Tally Marks	Number of Students (Frequency)
0 - 10	III	3
10 - 20		8
20 - 30		14
30 - 40		9
40 - 50		6
	Total	40

2. Question

The electricity bills (in rupees) of 25 houses of a certain locality for a month are given below:

324, 700, 617, 400, 356, 365, 435, 506, 548, 736, 780, 378, 570, 685, 312, 630, 584, 674, 754, 776, 596, 745, 565, 763, 472.

Arrange the above data in increasing order and form a frequency table using equal class intervals, starting from 300-400, where 400 is not included.

Answer

The frequency distribution table is given as:

Electricity Bills	Tally Marks	Number of Houses (Frequency)
300 – 400	 	5
400 – 500	III	3
500 – 600	 	6
600 – 700	IIII	4
700 – 800	 	7
	Total	25

3. Question

The weekly wages (in rupees) of 28 workers of a factory are given below:

668, 610, 642, 658, 668, 620, 719, 720, 700, 690, 710, 642, 672, 654, 692, 706, 718, 702, 704, 678, 615, 640, 680, 716, 705, 615, 636, 656.

Construct a frequency table with equal class intervals, taking the first of the class intervals as 610-630, where 630 is not included.

Answer

The frequency distribution table is given as:

Weekly Wages	Tally Marks	Number of Workers (Frequency)
610 - 630	IIII	
630 - 650	IIII	4
650 - 670	IIII	5
670 - 690	III	3
690 - 710	IIII	7
710 - 730	IIII	5
	Total	28

4. Question

The weekly pocket expenses (in rupees) of 30 students of a class are given below:

62, 80, 110, 75, 84, 73, 60, 62, 100, 87, 78, 94, 117, 86, 65, 68, 90, 80, 118, 72, 95, 72, 103, 96, 64, 94, 87, 85, 105, 115.

Construct a frequency table with class intervals 60-70 (where 70 is not included), 70-80, 80-90, etc.

Answer

The frequency distribution table is given as:

Expenses	Tally Marks	Number of Students (Frequency)
60 - 70	 	6
70 - 80	 	5
80 - 90	 	7
90 - 100	 	5
100 - 110	III	3
110 - 120	IIII	4
	Total	30

5. Question

The daily earnings (in rupees) of 24 stores in a market was recorded as under:

715, 650, 685, 550, 573, 530, 610, 525, 742, 680, 736, 524, 500; 585, 723, 545, 532, 560, 580, 545, 625, 630, 645, 700.

Prepare a frequency table taking equal class sizes. One such class is 500-550, where 550 is not included.

Answer

The Frequency distribution will be as follows:

Daily Earnings	Tally Marks	Number of Stores (Frequency)
500 - 550		7
550 - 600		5
600 - 650		4
650 - 700		3
700 - 750		5
	Total	24

6. Question

The heights (in cm) of 22 students were recorded as under:

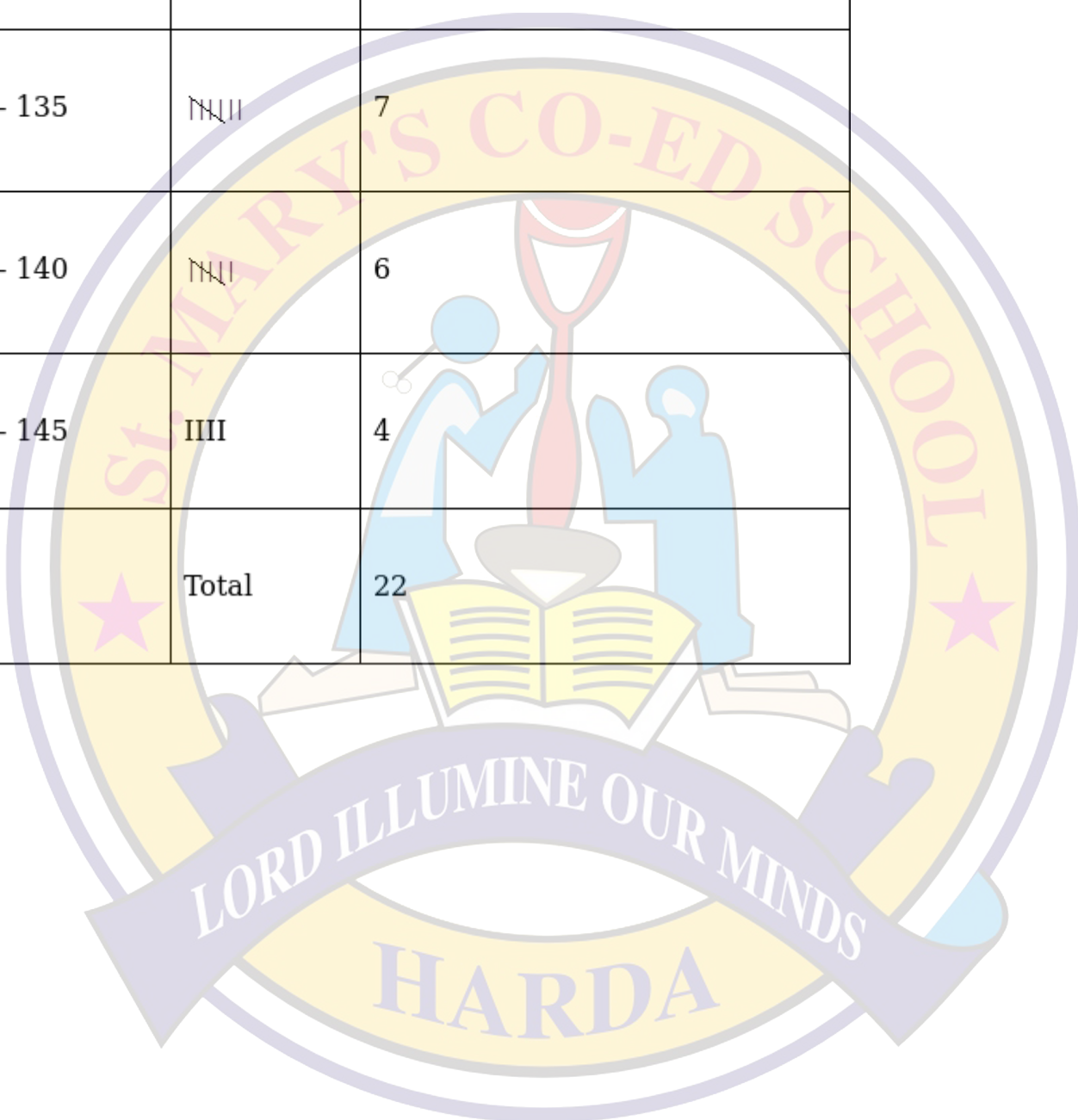
125, 132, 138, 144, 142, 136, 134, 125, 135, 130, 126, 132, 135, 142, 143, 128, 126, 136, 135, 130, 130, 133.

Prepare a frequency distribution table, taking equal class intervals and starting from 125-130, where 130 is not included.

Answer

The frequency distribution will be as follows

Heights (in cm.)	Tally Marks	Number of Students (Frequency)
125 - 130		5
130 - 135		7
135 - 140		6
140 - 145	IIII	4
	Total	22

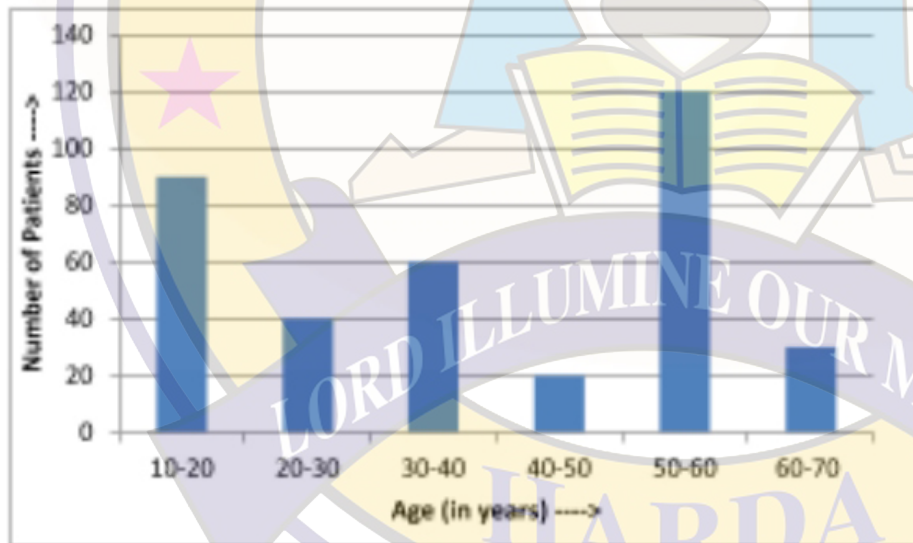


Question 1:

Solution:

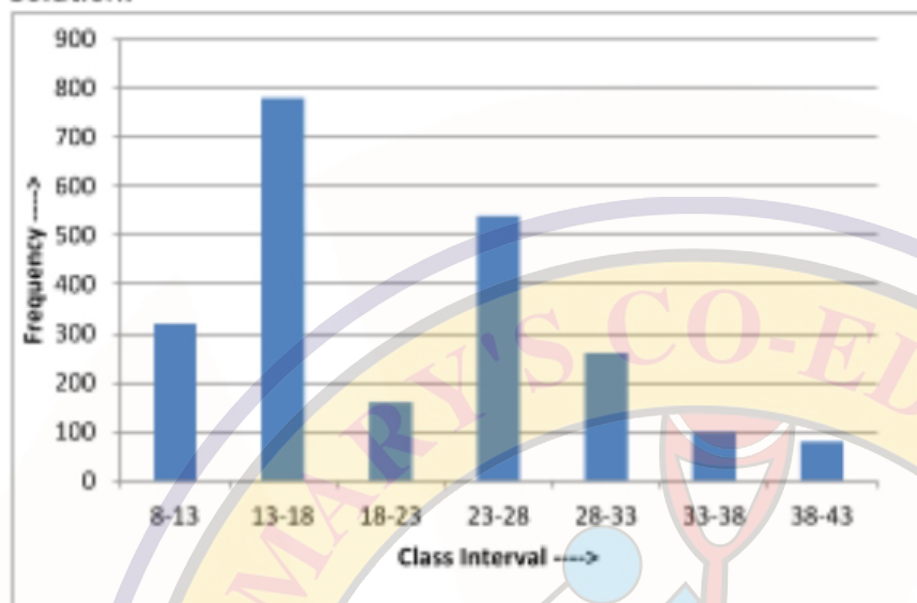


Question 2:



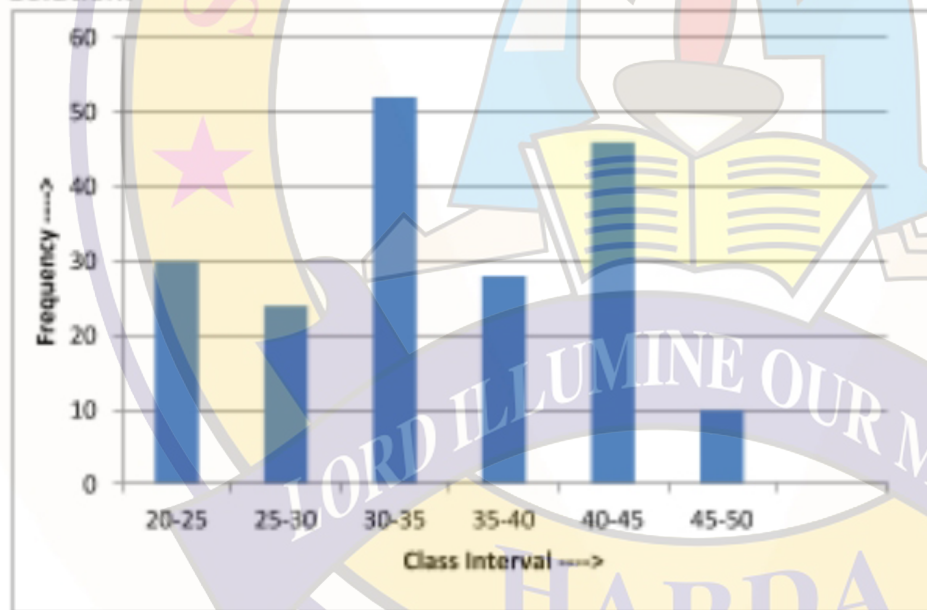
Question 3:

Solution:



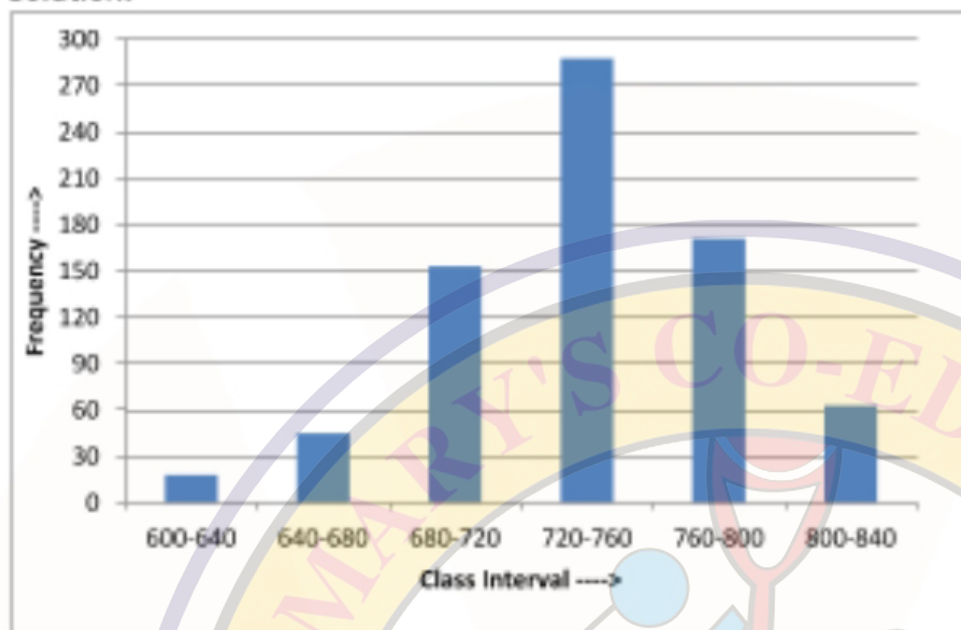
Question 4:

Solution:



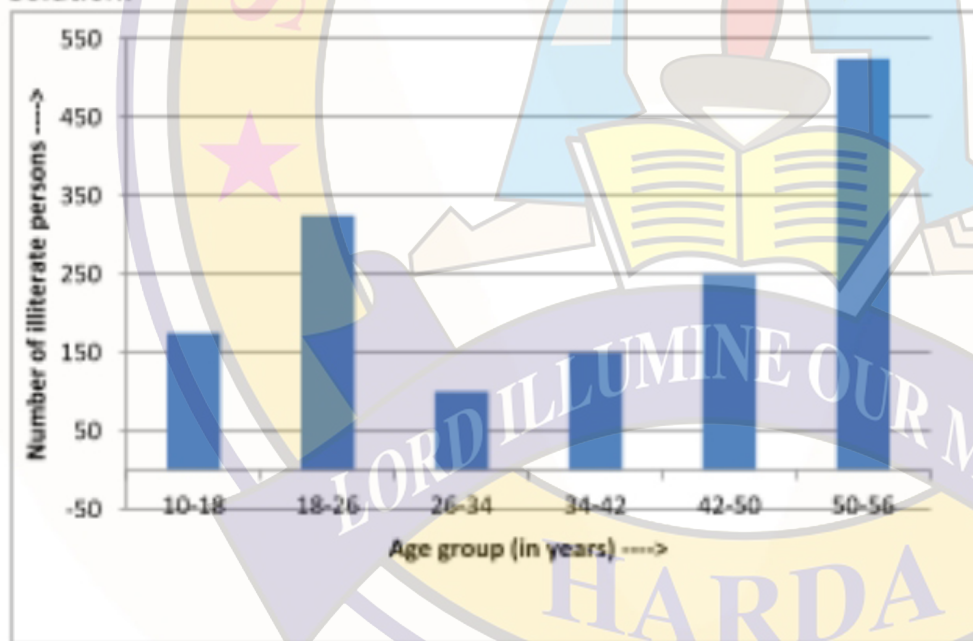
Question 5:

Solution:



Question 6:

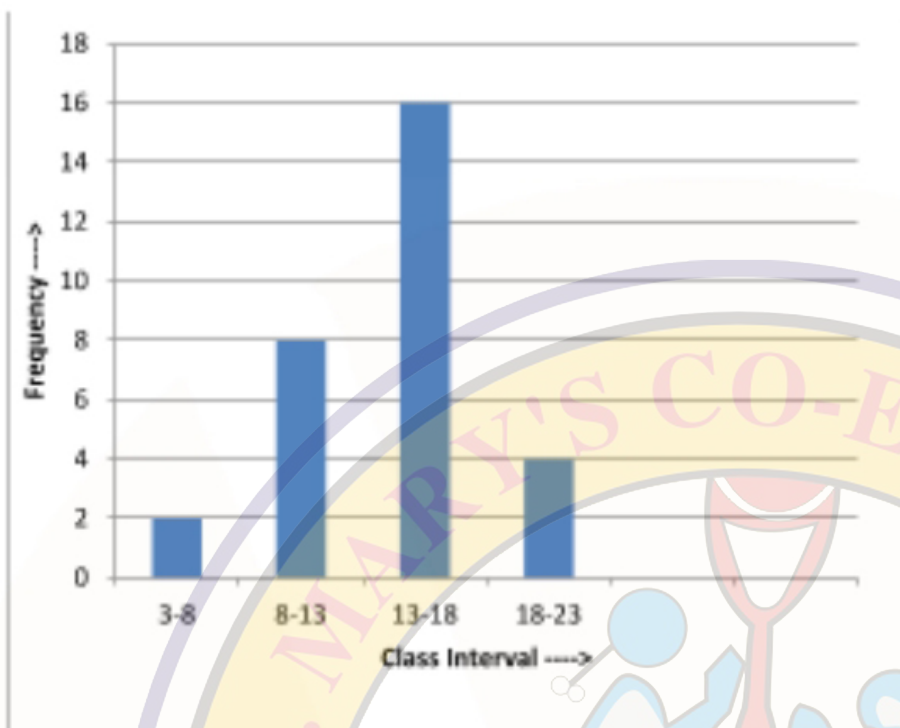
Solution:



Question 7:

Solution:

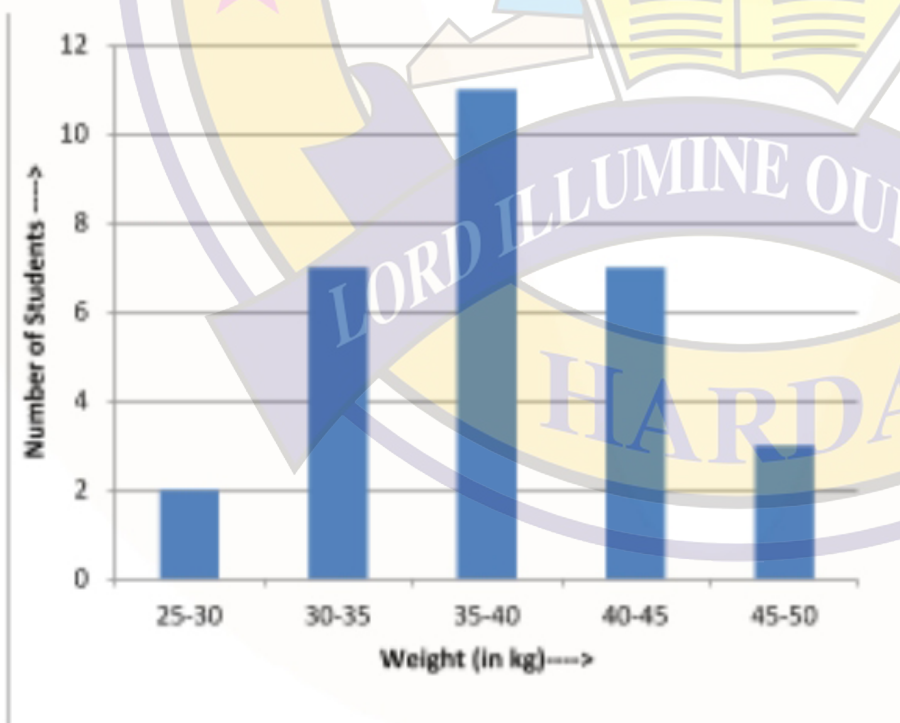
Class Interval	3-8	8-13	13-18	18-23
Frequency	2	8	16	4



Question 8:

Solution:

Weight (in kg)	25-30	30-35	35-40	40-45	45-50
Number of students	2	7	11	7	3



Question 9:

Solution:

- (i) 42 students have height more than or equal to 135 cm but less than 150 cm.
- (ii) 150-155 is the class interval having the least number of students.
- (iii) The class size is 5.
- (iv) 28 students have height less than 140 cm

Question 10:

Solution:

- (i) The given histogram gives the number of teachers in the school in the age groups 25-30 to 55-60.
- (ii) 21 teachers are of age less than 45 years.
- (iii) 13 teachers are of age 40 years or more but less than 55 years.

Question 11:

Solution:

- (i) The classes are 10-15, 15-20, 20-25, 25-30, 30-35, 35-40.
- (ii) The class width is 5.
- (iii) The literate females are the least in the age group 10-15.
- (iv) The number of literate females is the highest in the age group 15-20.

