

CLASS NOTES

Class: VIII

Topic: CH – 5 “DATA HANDLING”

Subject: MATHEMATICS

KEY POINTS:

Data: Information collected by an observer is called data (raw data).

Frequency: The number of times an observation occurs in the given data is called the frequency of the observation.

Frequency Distribution: A way of presenting data that exhibits the values of the variable and corresponding frequencies is called a frequency distribution.

Range: The difference between the highest and the lowest values of observation is called range. i.e., Range = Highest observation – Lowest observation

Class-mark: The mid-point of a class-interval is called class-mark

$$\text{Class-mark} = \frac{\text{Upper limit} + \text{Lower limit}}{2}$$

Histogram: Grouped data can be presented using the histogram. A histogram is a type of bar diagram, where the class intervals are shown on the horizontal axis and the height of the bars show the frequency of the class interval. Also, there is no gap between the bars as there is no gap between the class intervals.

- **Class Interval or Class:** When all the observations are classified in several groups according to their size then these groups are called **Class Interval**
- **Lower-class Limit:** The lowest number in every class interval is known as its **Lower-class Limit**.
- **Upper-class Limit:** The highest number in every class interval is known as its **Upper-class Limit**.
- **Width or Size or Magnitude of the Class Interval:** The difference between the upper-class limit and the lower class limit is called the **Size of the Class Interval**.

Example –

Class (Rs.)	Tally Marks	Frequency Students
20 - 30		5
30 - 40		8
40 - 50		9
50 - 60		10
60 - 70		6
70 - 80		2
Total		40

Here, we get,

Class Intervals = 20 - 30, 30 - 40,....

Lower Limit = 20 in 20-30, 30 in 30-40,...

Upper Limit = 30 in 20-30, 40 in 30-40,....

Class size = 30 - 20 = 10,

40 - 30 = 10,....

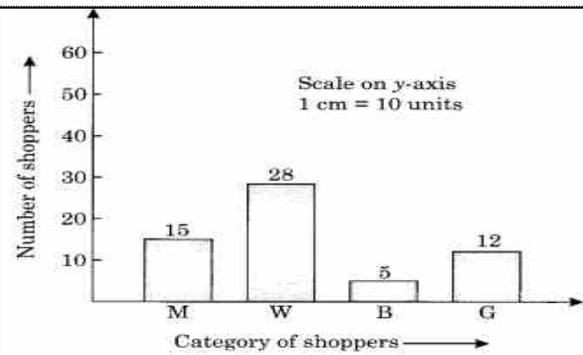
Class Mark = $(20+30)/2 = 50/2 = 25$ in the class interval 20-30

EXERCISE – 5.1

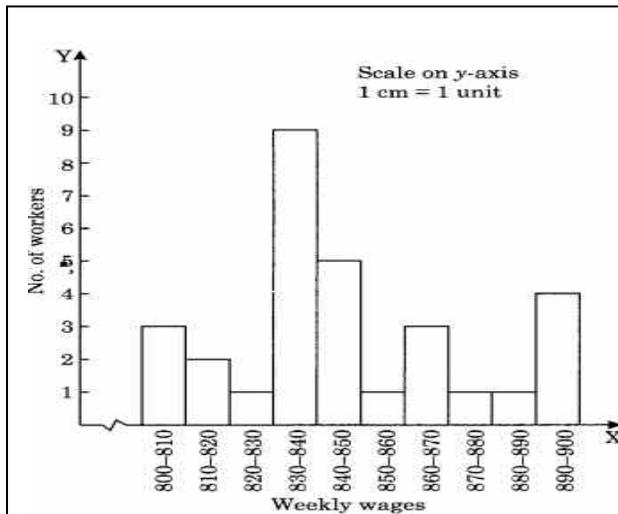
Q2.Solution:

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Shoppers	Tally marks	Frequency
M		15
W		28
B		5
G		12
Total		60



Q4.Solution: Refer to the frequency table of Question No. 3.



- (i) Group 830-840 has the maximum number of workers, i.e., 9.
- (ii) 10 workers earn equal and more than ₹ 850.
- (iii) 20 workers earn less than ₹ 850.

EXERCISE – 5.2

PIE CHART: A pie chart shows the relationship between a whole circle and its parts. The circle is divided into sectors. The size of each sector is proportional to the information it represents. Pie charts are also known as circle graphs.

$$\text{Central angle} = \frac{\text{Value of a particular mode}}{\text{Sum of the value}} \times 360^\circ$$

Q1.Solution:

(i) Number of young people who were surveyed = $(100 \times 20) / 10 = 200$ people.

(ii) Light music is liked by the maximum people, i.e., 40%

(iii) Total number of CD = 1000

Number of viewers who like classical music = $(10 \times 1000) / 100 = 100$

Number of viewer who like semi-classical music = $(20 \times 1000) / 100 = 200$

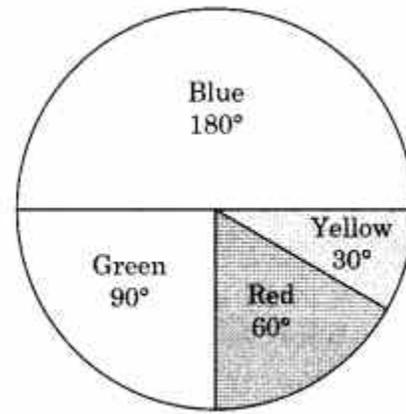
Number of viewers who like light music = $(40 \times 1000) / 100 = 400$

Number of viewers who like folk music = $(30 \times 1000) / 100 = 300$

Q3. Solution:

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Colours	Number of People	Central angle
Blue	18	$\frac{18}{36} \times 360^\circ = 180^\circ$
Green	9	$\frac{9}{36} \times 360^\circ = 90^\circ$
Red	6	$\frac{6}{36} \times 360^\circ = 60^\circ$
Yellow	3	$\frac{3}{36} \times 360^\circ = 30^\circ$
Total	36	



Q4.Solution:(i) For 540 marks, the central angle = 360°

For 105 marks the central angle = $(360 \times 105) / 540 = 70^\circ$

Corresponding subject = Hindi

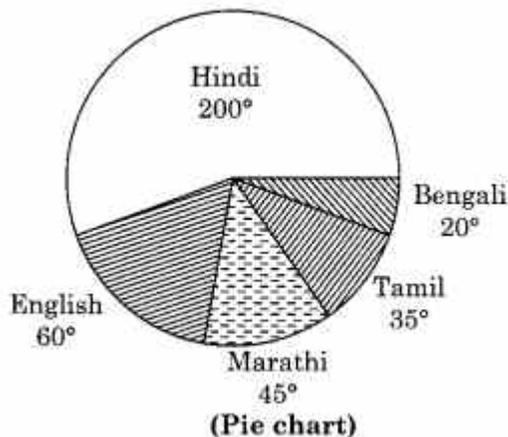
(ii) Marks obtained in Mathematics = $(90 \times 540) / 360 = 135$

Marks obtained in Mathematics more than Hindi = $135 - 105 = 30$

(iii) Central angle of Social Science + Mathematics = $65^\circ + 90^\circ = 155^\circ$

Central angle of Science + Hindi = $80^\circ + 70^\circ = 150^\circ$, So, the sum of marks obtained in Social Science and Maths is more.

Q5.Solution: The number of students in a hostel, speaking different languages is displayed in the given a pie chart.



Language	Number of students	Central angle
Hindi	40	$\frac{40}{72} \times 360^\circ = 200^\circ$
English	12	$\frac{12}{72} \times 360^\circ = 60^\circ$
Marathi	9	$\frac{9}{72} \times 360^\circ = 45^\circ$
Tamil	7	$\frac{7}{72} \times 360^\circ = 35^\circ$
Bengali	4	$\frac{4}{72} \times 360^\circ = 20^\circ$
Total	72	

ASSIGNMENT: SOLVE Q1,3,5 OF EX 5.1 AND Q2 OF EX 5.2 AS AN ASSIGNMENT.

