



**Class-5**

**Subject-Mathematics**

**Chapter-13 (Data Arrangement)**

**Date: 03/11/2020**

**Lecture- 04 (Solution)**

**1) 12, 14, 24, 29, 16, 12, 9, 29, 20, 16, 28, 12, 8, 29, 12, 6, 22, 28 are some data.**

**a) Arrange the given data in ascending order.**

**b) Make a frequency distribution table taking as a class interval 5.**

**c) Draw the histogram of given data.**

**Solution:**

a) The given data are arranged in ascending order: 6, 8, 9, 12, 12, 12, 12, 14, 16, 16, 20, 22, 24, 28, 28, 29, 29, 29.

b) Lowest value of the data = 6

Highest value of the data = 29

$\therefore$  Range =  $(29 - 6) + 1 = 23 + 1 = 24$

Here, Class interval = 5

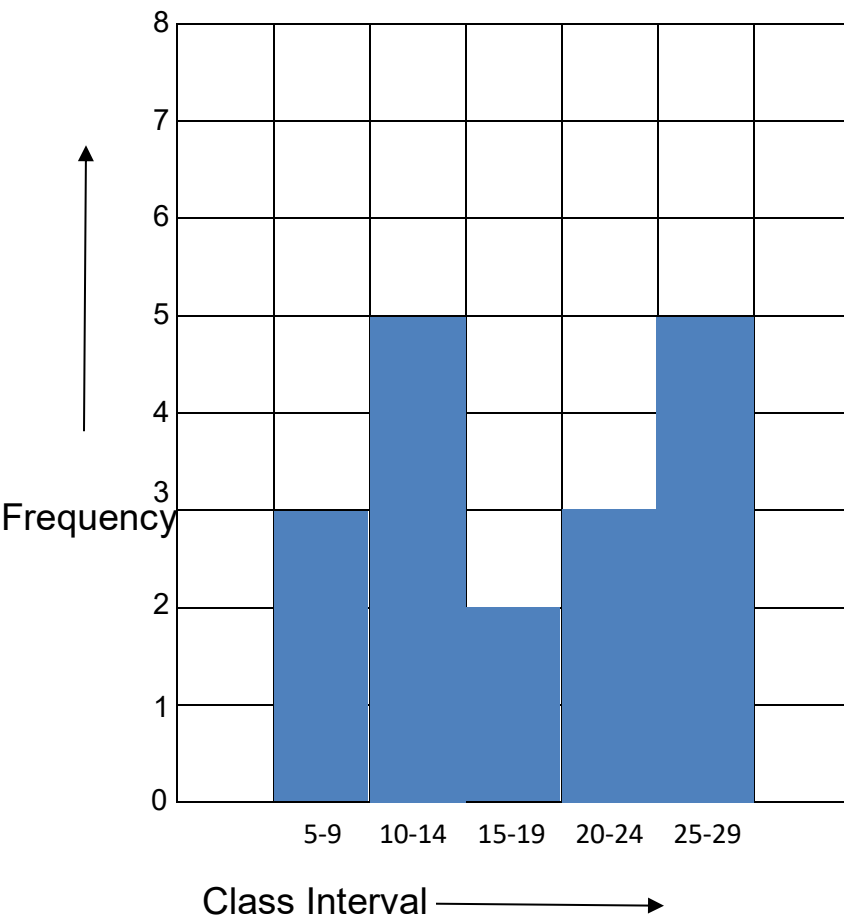
$\therefore$  Number of class with class interval 5 =  $\frac{24}{5} = 4.8 \approx 5$

Now a frequency distribution table taking 5 as class interval is made below:

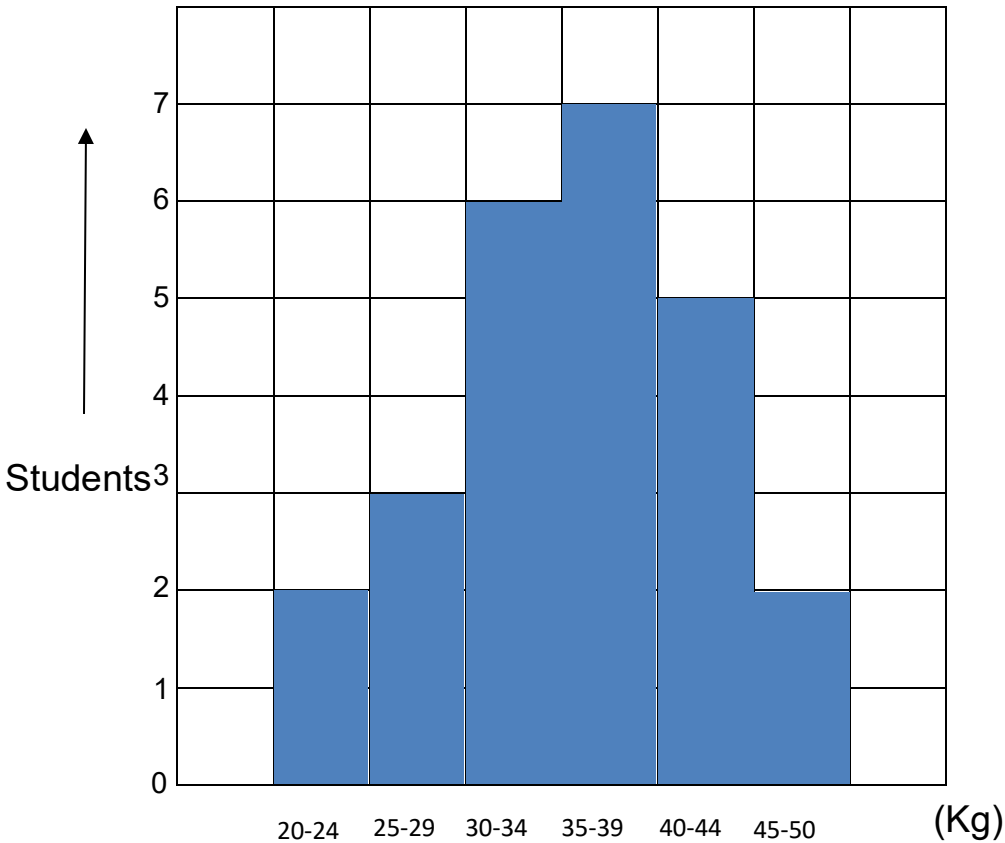
Class interval	Tally	Frequency
5 – 9	III	3
10 – 14		5
15 – 19	II	2
20 – 24	III	3
25 - 29		5

Total = 18

c) c) A histogram is drawn according to the table:



2) The histogram on the below shows the weight of all the Grade 5 students in one school.



### Weight of Grade 5 students

- How many Grade 5 students are there in this school?
- What class includes more students than others?
- How many percent of students are there in the class 35 – 39?
- How many percent of students are less than or equal to 29 kilograms in weight?

**Solution:**

a) There are =  $2+3+6+7+5+2 = 25$  students of Grade 5 in this school.

Ans: 25 students.

b) The class 35 – 39 includes more students than others.

Ans: 35 – 39.

c) There are 7 students in the class 35 – 39.

Total students = 25

$$\begin{aligned}\therefore \text{Percent of students in the class 35 – 39} &= \frac{7}{25} \times 100\% \\ &= 28\%\end{aligned}$$

Ans: 28%

d) (2+3) or 5 students are less than or equal to 29 kg in weight.

Total students = 25

$\therefore$  The percent of students who are less than or equal to 29 kg in weight

$$\begin{aligned}&= \frac{5}{25} \times 100\% \\ &= 20\%\end{aligned}$$

Ans: 20%

**3) The marks obtained by some students in Mathematics are: 75, 63, 75, 75, 71, 75, 63, 72, 72, 69, 72, 70, 61, 75, 60, 71, 69, 63, 65, 69.**

**a) How many students are there in given data?**

**b) What are the minimum and maximum marks in the given data?**

**c) Make a distribution table of given data.**

**Solution:**

a) Number of student in the given data is 20

Ans: 20 students.

b) Minimum marks = 60

Maximum marks = 75

c) The given data are arranged in ascending order: 60, 61, 63, 63, 63, 65, 69, 69, 69, 70, 71, 71, 72, 72, 72, 75, 75, 75, 75.

Lowest value of the data = 60

Highest value of the data = 75

$$\therefore \text{Range} = (75 - 60) + 1 = 15 + 1 = 16$$

$$\therefore \text{Number of class with class interval } 5 = \frac{16}{5} = 3.2 \approx 4$$

A distribution table of given data is given below:

Marks	Tally	Number of students
60 – 64		5
65 – 69		4
70 – 74		6
75 - 79		5

Total = 20

**4) Village – A has 550 people in the area of 50 sq. km and village – B has the area of 20 sq. km and population density is 16 people / sq. km.**

- a. Write the formula of population density.**
- b. Determine the population density of village – A.**
- c. Determine the population of village – B.**
- d. Determine the difference between the populations of two villages.**

**Solution:**

a) Population density =  $\frac{\text{Population}}{\text{Area}}$

b) For village – A,

$$\text{Population} = 550$$

$$\text{Area} = 50 \text{ sq. km}$$

We know,

$$\begin{aligned}\text{Population density} &= \frac{\text{Population}}{\text{Area}} \\ &= \frac{550}{50} \text{ People / sq. km} \\ &= 11 \text{ People / sq. km}\end{aligned}$$

Ans: 11 People / sq. km.

c) For Village – B,

$$\text{Area} = 20 \text{ sq. km}$$

$$\text{Population density} = 16 \text{ People / sq. km}$$

We know,

$$\begin{aligned}\text{Population} &= \text{Population density} \times \text{Area} \\ &= (16 \times 20) \text{ people} \\ &= 320 \text{ people}\end{aligned}$$

Ans: 320 people.

d) Village – A has 550 people

From 'c' we get,

Village – B has 320 people

$$\begin{aligned}\therefore \text{Difference between the population of two villages} &= (550 - 320) \text{ People} \\ &= 230 \text{ people}\end{aligned}$$

Ans: 230 people.

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