

Chapter 14: Statistics

Question 1. Give three examples of data which you can get from your day-to-day life.

Solution:

Here are the three examples which are related to our day-to-day life :

- The number of boys in a sports team.
- Electricity bills for last one year.
- The number of students appearing for board exams at your school.

Question 2. The height of 20 students of class V are noted as follows

4, 4.5, 5, 5.5, 4, 4, 4.5, 5, 5.5, 4, 3.5, 3.5, 4.2, 4.6, 4.2, 4.7, 5.5, 5.3, 5, 5.5.

1. **Make a frequency distribution table for the above data.**
2. **Which is the most common height and which is the rarest height among these students?**

Solution:

1. The required frequency distribution table is:

Height	Tally Marks	Students
3.5	II	2
4	IIII	4
4.2	II	2
4.5	II	2
4.6	I	1
4.7	I	1
5	III	3
5.3	I	1
5.5	IIII	4
Total		20

2. The most common heights are 4 and 5.5.
The rarest heights are 4.6 and 4.7.

Question 3: The number of family members in 10 flats of society are

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

Find the mean number of family members per flat.

Solution:

Number of family members in 10 flats -2, 4, 3, 3, 1, 0, 2, 4, 1, 5.

So, we get,

Mean = sum of observation/ total no of observations

$$\text{Mean} = (2 + 4 + 3 + 3 + 1 + 0 + 2 + 4 + 1 + 5) / 10$$

$$\text{Mean} = 25/10 = 2.5$$

Question 4. The following is the list of number of coupons issued in a school canteen during a week:

105, 216, 322, 167, 273, 405 and 346.

Find the average no. of coupons issued per day.

Solution:

Number of coupons issued in a week: 105, 216, 322, 167, 273, 405 and 346.

So, we get,

Mean = sum of observation/ total no of observations

$$\text{Mean} = (105 + 216 + 322 + 167 + 273 + 405 + 346) / 7 = 1834/7$$

$$\text{Mean} = 262$$

Question 5. The daily minimum questions solved by a student during a week were as under:

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
35	30	27	32	23	28

Find the mean.

Solution:

Number of questions solved in a week: 35, 30, 27, 32, 23, 28.

So, we get,

$$\text{Mean} = \text{sum of observation/ total no of observations} = (35 + 30 + 27 + 32 + 23 + 28) / 6 = 175/6 = 29.167$$

Question 6. If the mean of six observations $y, y + 1, y + 4, y + 6, y + 8, y + 5$ is 13, find the value of y .

Solution:

Mean = sum of observation/ total no of observations

$$13 = (y + y + 1 + y + 4 + y + 6 + y + 8 + y + 5) / 6$$

$$13 = (6y + 24) / 6$$

$$(13 * 6) = 6y + 24$$

$$(13 * 6) - 24 = 6y$$

$$(13 * 6) - 6 * 4 = 6y$$

$$6(13 - 4) = 6y$$

$$y = 9$$

Question 7. The mean weight of a class of 34 students is 46.5 kg. If the weight of the new boy is included, the mean is rises by 500 g. Find the weight of the new boy.

Solution:

The mean weight of 34 students = 46.5

Sum of the weight of 34 students = $(46.5 * 34) = 1581$

Change or increase in the mean weight when the weight of a new boy is added = 0.5

So, the new mean = $(46.5 + 0.5) = 47$

So, let the weight of the new boy be y .

So, $(\text{sum of weight of 34 students} + \text{weight of new boy}) / 35 = 47$

$$(1581 + y) / 35 = 47$$

$$1581 + y = 1645$$

$$y = 1645 - 1581 = 64$$

Question 8. The Number of books issued to 13 students in a class are:

25, 19, 24, 23, 29, 31, 19, 20, 22, 26, 17, 35, 21.

Find the median no. of books for the above data.

Solution:

Let's arrange the data given in ascending order – 17, 19, 19, 20, 21, 22, 23, 24, 25, 26, 29, 31, 35.

$n = 13$, so it's an odd number

Median = $(n+1) / 2$ observations

$$= (13+1) / 2 = (14/2)^{\text{th}} \text{ observation} = 7^{\text{th}} \text{ observation} = 23$$

Question 9. The weight (in kg) of 7 students of a class are 44, 52, 55, 60, 50, 49, 45.

Find the median weight.

Solution:

Let's arrange the data given in ascending order – 44, 45, 49, 50, 52, 55, 60.

$n = 7$, so it's an odd number

Median = $(n+1) / 2$ observations

$= (7+1)/2 = (8/2)^{\text{th}}$ observation = 4th observation = 50 kg