

Board – CBSE

Class – 7th

Topic – Data Handling 3.1

Q.1 Find the range of heights of any ten students of your class.

Sol: Let the heights (in cm) of 10 students of our class be

125, 127, 132, 133, 134, 136, 138, 141, 144, 146

Highest value among these observations = 146

Lowest value among these observations = 125

Range = Highest value – Lowest value = $(146 - 125)$ cm = 21 cm

Q.2 Organize the following marks in a class assessment, in a tabular form.

4, 6, 7, 5, 3, 5, 4, 5, 2, 6, 2, 5, 1, 9, 6, 5, 8, 4, 6, 7

(i) Which number is the highest? (ii) Which number is the lowest?

(iii) What is the range of the data? (iv) Find the arithmetic mean.

Marks	Tally marks	Frequency
1		1
2		2
3		1
4		3
5	IIII	5
6		4
7		2
8		1
9		1

Sol: (i) The highest number is 9.

(ii) The lowest number is 1.

(iii) The range of the data is = Highest value - Lowest value

$$= 9 - 1 = 8$$

(iv) Arithmetic mean = (Sum of all observations) / (Total number of observation)

$$= \frac{4+6+7+5+3+5+4+5+2+6+2+5+1+9+6+5+8+4+6+7}{20}$$

$$= 100/20 = 5$$

Q.3 Find the mean of the first five whole numbers

Sol: The first five whole numbers are 0, 1, 2, 3, and 4.

Therefore, Mean of first five whole numbers = $\frac{\text{Sum of numbers}}{\text{Total number}}$

$$= \frac{0+1+2+3+4}{5} = \frac{10}{5} = 2$$

Thus, the mean of the first five whole numbers is 2.

Q.4 A cricketer scores the following runs in eight innings: 58, 76, 40, 35, 46, 45, 0, 100

Find the mean score.

Sol: Number of innings = 8

Mean of score = $\frac{\text{Sum of scores}}{\text{Number of innings}}$

$$= \frac{58+76+40+35+46+45+0+100}{8} = \frac{400}{8} = 50$$

Thus, the mean score is 50.

Q.5 Following table shows the points of each player scored in four games:

Player	Game 1	Game 2	Game 3	Game 4
A	14	16	10	10
B	0	8	6	4
C	8	11	Did not play	13

Now answer the following questions:

(i) Find the mean to determine A's average number of points scored per game.

(ii) To find the mean number of points per game for C, would you divide the total points by 3 or by 4? Why?

(iii) B played in all four games. How would you find the mean?

(iv) Who is the best performer?

Sol: (i) A's average number of points = $\frac{14+16+10+10}{4} = \frac{50}{4} = 12.5$

(ii) To find the mean number of points per game for C, we will divide the total points by 3 because C played 3 games.

(iii) Mean of B's score = $\frac{0+8+6+4}{4} = \frac{18}{4} = 4.5$

(iv) The best performer will have the greatest average among all. Now we can observe that the average of A is 12.5 which is more than that of B and C. Therefore, A is the best performer among these three.

Q.6 The marks (out of 100) obtained by a group of students in a science test are 85, 76, 90, 85, 39, 48, 56, 95, 81 and 75. Find the:

(i) Highest and the lowest marks obtained by the students.

(ii) Range of the marks obtained.

(iii) Mean marks obtained by the group.

Sol: The marks obtained by the group of students in a science test can be arranged in ascending order as follows.

39, 48, 56, 75, 76, 81, 85, 85, 90, 95

(i) Highest marks = 95, Lowest marks = 39

(ii) Range = $95 - 39 = 56$

(iii) Mean marks = $\frac{85+76+90+85+39+48+56+95+81+75}{10} = \frac{730}{10} = 73$

Thus, the mean marks obtained by the group of students is 73.

Q.7 The enrolment in a school during six consecutive years was as follow:

1555, 1670, 1750, 2013, 2540, 2820

Find the mean enrolment of the school for this period.

Sol: Mean enrolment = $\frac{\text{Sum of numbers of enrolment}}{\text{Total number of enrolment}}$

$$= \frac{1555+1670+1750+2013+2540+2820}{6}$$

$$= \frac{12348}{6} = 2058$$

Thus, the mean enrolment of the school is 2,058.

Q.8 The rainfall (in mm) in a city on 7 days of a certain week was recorded as follows:

Day	Mon	Tues	Wed	Thur s	Fri	Sat	Sun
Rainfall (in mm)	0	12.2	2.1	0	20.5	5.5	1

- Find the range of the rainfall in the above data.
- Find the mean rainfall for the week.
- On how many days was the rainfall less than the mean rainfall?

Sol: (i) The range of the rainfall = Highest rainfall – Lowest rainfall
 $= 20.5 - 0.0 = 20.5$ mm

(ii) Mean rainfall = $\frac{\text{Sum of rainfall recorded}}{\text{Total number of days}}$

$$= \frac{0.0+12.2+2.1+2.2+20.5+5.5+1.0}{7} = \frac{41.3}{7} = 5.9$$
 mm

(iii) 5 days. i.e., Monday, Wednesday, Thursday, Saturday, and Sunday rainfalls were less than the mean rainfall.

Q.9 The height of 10 girls were measured in cm and the results are as follows:

135, 150, 139, 128, 151, 132, 146, 149, 143, 141

- What is the height of the tallest girl?
- What is the height of the shortest girl?
- What is the range of data?
- What is the mean height of the girls?
- How many girls have heights more than the mean height?

- Sol:**
- (i) The height of the tallest girl = 151 cm
 - (ii) The height of the shortest girl = 128 cm
 - (iii) The range of the data = Highest height - Lowest height = $151 - 128 = 23$ cm
 - (iv) The mean height = $\frac{\text{Sum of heights of the girls}}{\text{Total number of girls}}$
 $= \frac{135+150+139+128+151+132+146+149+143+141}{10} = \frac{1414}{10} = 141.4$ cm
 - (v) Five girls, i.e., 150, 151, 146, 149, 143 have heights (in cm) more than the mean height.