Access answers to Maths NCERT Solutions for Class 7 Chapter 3 – Data Handling Exercise 3.1

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

Solution:-

Let us assume heights (in cm) of 10 students of our class.

= 130, 132, 135, 137, 139, 140, 142, 143, 145, 148

By observing the above mentioned values, the highest value is = 148 cm

By observing the above mentioned values, the lowest value is = 130 cm

Then,

Range of Heights = Highest value – Lowest value

= 148 – 130

= 18 cm

2. Organise 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.

Solution:-

First, we have to arrange the given marks in ascending order.

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

Now, we will draw the frequency table of the given data.

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

(i) By observing the table clearly, the highest number among the given data is 9.
(ii) By observing the table clearly, the lowest number among the given data is 1.
(iii) We know that, Range = Highest value – Lowest value
= 9 – 1
= 8
(iv) Now we have to calculate Arithmetic Mean,
Arithmetic mean = (Sum of all observations)/ (Total number of observation)
Then,
Sum of all observation = 1 + 2 + 2 + 3 + 4 + 4 + 4 + 5 + 5 + 5 + 5 + 5 + 6 + 6 + 6 + 6 + 7 + 7 + 8 + 9
= 100
Total Number of Observation = 20
Arithmetic mean = (100/20)
= 5

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

Solutions:-

The first five Whole numbers are 0, 1, 2, 3, and 4.
Mean = (Sum of first five whole numbers)/ (Total number of whole numbers)
Then,
Sum of five whole numbers = 0 + 1 + 2 + 3 +4
= 10
Total Number of whole numbers = 5
Mean = (10/5)
= 2

∴Mean of first five whole numbers is 2.

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

Solution:-

Mean score = (Total runs scored by the cricketer in all innings)/ (Total number of innings Played by the cricketer)
Total runs scored by the cricketer in all innings = 58 + 76 + 40 + 35 + 46 + 45 + 0 + 100
= 400
Total number of innings = 8
Then,
Mean = (400/8)
= 50

∴Mean score of the cricketer is 50.

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 the four games. How would you find the mean?

(iv) Who is the best performer?

Solution:-

(i) A's average number of points scored per game = Total points scored by A in 4 games/ Total number of games

= (14 + 16 + 10 + 10)/ 4

= 50/4

= 12.5 points

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

(iii) B played in all the four games, so we will divide the total points by 4 to find out the mean.

Then,

Mean of B's score = Total points scored by B in 4 games/ Total number of games

= (0 + 8 + 6 + 4)/ 4

= 18/4

= 4.5 points

(vi) Now, we have to find the best performer among 3 players.

So, we have to find the average points of C = (8 + 11 + 13)/3

= 32/3

= 10.67 points

By observing, the average points scored A is 12.5 which is more than B and C.

Clearly, we can say that A is the best performer among three.

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.

Solution:-

First we have to arrange the marks obtained by a group of students in a science test in an ascending order,

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

(i) The highest marks obtained by the student = 95

The lowest marks obtained by the student = 39

(ii) We know that, Range = Highest marks – Lowest marks

= 95 – 39

= 56

(iii) Mean of Marks = (Sum of all marks obtained by the group of students)/

(Total number of marks)

= (39 + 48 + 56 + 75 + 76 + 81 + 85 + 85 + 90 + 95)/ 10

= 730/10

= 73

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

1555, 1670, 1750, 2013, 2540, 2820.

Find the mean enrolment of the school for this period.

Solution:-

Mean enrolment = Sum of all observations/ Number of observations

= (555 + 1670 + 1750 + 2013 + 2540 + 2820)/ 6

= (12348/6)

= 2058

∴The mean enrolment of the school for this given period is 2058.

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

Day	**Mon**	**Tue**	**Wed**	**Thurs**	**Fri**	**Sat**	**Sun**
Rainfall (in mm)	0.0	12.2	2.1	0.0	20.5	5.5	1.0

(i) Find the range of the rainfall in the above data.

(ii) Find the mean rainfall for the week.

(iii) On how many days was the rainfall less than the mean rainfall.

Solution:-

(i) Range of rainfall = Highest rainfall – Lowest rainfall

= 20.5 – 0.0

= 20.5 mm

(ii) Mean of rainfall = Sum of all observations/ Number of observation

= (0.0 + 12.2 + 2.1 + 0.0 + 20.5 + 5.5 + 1.0)/ 7

= 41.3/7

= 5.9 mm

(iii) We may observe that for 5 days i.e. Monday, Wednesday, Thursday, Saturday and Sunday the rainfall was less than the average rainfall.

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

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

(i) What is the height of the tallest girl? (ii) What is the height of the shortest girl?

(iii) What is the range of the data? (iv) What is the mean height of the girls?

(v) How many girls have heights more than the mean height.

Solution:-

First we have to arrange the given data in an ascending order,

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

(i) The height of the tallest girl is 151 cm

(ii) The height of the shortest girl is 128 cm

(iii) Range of given data = Tallest height – Shortest height

= 151 – 128

= 23 cm

(iv) Mean height of the girls = Sum of height of all the girls/ Number of girls

= (128 + 132 + 135 + 139 + 141 + 143 + 146 + 149 + 150

+ 151)/ 10

= 1414/10

= 141.4 cm

(v) 5 girls have heights more than the mean height (i.e. 141.4 cm).