



CLASS NOTES-ANSWERS

EXERCISE 3.1

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

Answer: Let the heights of 10 students be 126, 128, 129, 132, 136, 130, 135, 140, 142, 148

Highest value among this observation = 148

Lowest value among this observation = 126

$$\begin{aligned} \therefore \text{Range} &= \text{Highest value} - \text{Lowest value} \\ &= 148 - 126 = 22 \text{ cm} \end{aligned}$$

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.

Answer:

Mark s	Tally marks	No. of students
1		1
2		2
3		1
4		3
5		5
6		4
7		2
8		1
9		1

(i) The highest number is 9



(ii) The lowest number is 1.

(iii) The range of the data = Highest number – Lowest number

$$= 9 - 1$$

$$= 8$$

(iv) Arithmetic Mean = $\frac{\text{Sum of all observations}}{\text{Total number of observations}}$

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

$$= \frac{100}{20}$$

$$= 5$$

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

Answer: The first five whole numbers are 0, 1, 2, 3, 4

Arithmetic Mean = $\frac{\text{Sum of all observations}}{\text{Total number of observations}}$

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

$$= \frac{10}{5}$$

$$= 2$$

Thus, the 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.

Answer: Total number of innings = 8

Scores of cricketer in 8 innings = 58, 76, 40, 35, 46, 45, 0, 100

Arithmetic Mean = $\frac{\text{Sum of all observations}}{\text{Total number of observations}}$

$$\text{Mean score} = \frac{58 + 76 + 40 + 35 + 46 + 45 + 0 + 100}{8}$$



$$= \frac{400}{8}$$

$$= 50$$

Thus, the mean score of a cricketer in 8 innings 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:

- Find the mean to determine A's average number of points scored per game.
- To find the mean number of points per game for C, would you divide the total points by 3 or by 4? Why?
- B played in all the four games. How would you find the mean?
- Who is the best performer?

Answer:

(i) Total number of games played by A = 4

Scores obtained by A = 14, 16, 10, 10

$$\text{Mean score of A} = \frac{14 + 16 + 10 + 10}{4}$$

$$= \frac{50}{4}$$

$$= 12.5$$

(ii) Divide total points by 3 because player C played only three games.



$$\begin{aligned}\text{Mean score of A} &= \frac{8 + 11 + 13}{3} \\ &= \frac{32}{3} \\ &= 10.67\end{aligned}$$

(iii) Total number of games played by B = 4

Scores obtained by B = 0, 8, 6, 4

$$\begin{aligned}\text{Mean score of A} &= \frac{0 + 8 + 6 + 4}{4} \\ &= \frac{18}{4} \\ &= 4.5\end{aligned}$$

(iv) To find the best performer,

Mean of player A = 12.5

Mean of player B = 4.5

Mean of player C = 10.67

Therefore, on comparing means of all players, A is the best performer.

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

Answer:

Marks obtained by the group of students = 85, 76, 90, 85, 39, 48, 56, 95, 81, 75

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



(i) Highest marks obtained by the student = 95

Lowest marks obtained by the student = 39

(ii) Range of the marks = Highest marks – Lowest marks

$$= 95 - 39$$

$$= 56$$

(iii) Mean marks = $\frac{\text{Sum of marks}}{\text{Total number of students}}$

$$= \frac{39+48+56+75+76+81+85+85+90+95}{10}$$

$$= \frac{730}{10}$$

$$= 73$$

Thus, the mean marks obtained by a group of students are 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.

Answer:

Total number of years = 6

The enrollments in a school during six consecutive years = 1555, 1670, 1750, 2013, 2540, 2820

Mean enrollment = $\frac{\text{Sum of number of enrollments}}{\text{Total number of years}}$

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

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

$$= 2058$$

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.

Answer:

- (i) Highest of the rainfall (in mm) = 20.5

Lowest of the rainfall (in mm) = 0.0

Range of the rainfall = Highest rainfall - Lowest rainfall

$$= 20.5 - 0.0$$

$$= 20.5 \text{ mm}$$

- (ii) Total number of days = 7

Record of the rainfall (in mm) = 0.0, 12.2, 2.1, 0.0, 20.5, 5.5, 1.0

$$\text{Mean rainfall} = \frac{\text{Sum of rainfalls}}{\text{Number of days}}$$

$$= \frac{0.0 + 12.2 + 2.1 + 0.0 + 20.5 + 5.5 + 1.0}{7}$$

$$= \frac{41.3}{7}$$

$$= 5.9 \text{ mm}$$

- (iii) On 5 days rainfall was less than the mean rainfall

i.e., Monday, Wednesday, Thursday, Saturday and Sunday

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.

Answer: Ascending order = 128, 132, 135, 139, 141, 143, 146, 149, 150, 151

- (i) The height of the tallest girl = 151 cm
- (ii) The height of the shortest girl = 128 cm
- (iii) Range of the data = Height of tallest girl – Height of the shortest girl

$$= 151 - 128$$

$$= 23 \text{ cm}$$

- (iv) Total number of girls = 10

Measurement of the heights of 10 girls = 135, 150, 139, 128, 151, 132, 146, 149, 143, 141.

$$\text{Mean height} = \frac{\text{Sum of all heights}}{\text{Number of girls}}$$

$$= \frac{128 + 132 + 135 + 139 + 141 + 143 + 146 + 149 + 150 + 151}{10}$$

$$= \frac{1414}{10}$$

$$= 141.4 \text{ cm}$$

- (v) Five girls have heights more than the mean height

i.e.: 150, 151, 146, 149, 143