**Chapter – 3**

**Data Handling**

The collection, recording and presentation of data help us organise our experiences and draw inferences from them.



Before collecting data we need to know what we would use it for.



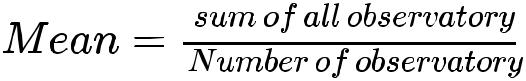
The data that is collected needs to be organised in a proper table, so that it becomes easy to understand and interpret.



Average is a number that represents or shows the central tendency of a group of observations or data.



Arithmetic mean is one of the representative values of data.



Mode is another form of central tendency or representative value. The mode of a set of observations is the observation that occurs most often. If each of the value ina data is occurring one time, then all are mode. Sometimes we also say that this data has no mode since none of them is occurring frequently.



Median is also a form of representative value. It refers to the value which lies in the middle of the data with half of the observations above it and the other half below it.  .



A bar graph is a representation of numbers using bars of uniform widths. Double bar graphs help to compare two collections of data at a glance.



Double bar graphs help to compare two collections of data at a glance.



There are situations in our life, that are certain to happen, some that are impossible and some that may or may not happen. The situation that may or may not happen has a chance of happening.



**Probability**: A branch of mathematics that is capable of calculating the chance orlikelihood of an event taking place (in percentage terms). If you have 10 likelihoods and you want to calculate the probability of 1 event taking place, it is said that its probability is  or event has a 10% probability of taking place.



Events that have many possibilities can have probability between 0 and 1.



PRACTICE QUESTIONS

**CLASS – VII: CHAPTER – 3**

**DATA HANDLING**

**Level 1**

1. What is the mean of the first five whole numbers ?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2.** | Find the mean of the first seven natural numbers. | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **3.** | What is the median of the first ten natural numbers? | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **4.** | Find the median of the first ten prime numbers. | | | |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  | |

5. A cricketer scores the following runs in eight innings :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | |  |  |  |
|  | |  |  |  |
|  |  |  |  |  |

6. What will be the range of following data ?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 32 , 41 , 28 , 54 , 35 , 26 , 33 , 23 , 38 , 40 | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **7.** The tally mark |  | shows which frequency? \_\_\_\_\_\_\_ | |  |  |  |  |
|  |  |  |  |  |  |  |  |



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **8.** The tally mark |  | shows which frequency ? | | |  |  |
|  |  |  |  |  |  |  |



9. What is the mode of the data 2 , 2 , 2 , 3 , 3 , 4 , 5 , 5 , 5, 6 , 6 , 8 ?

10. How many modes can a data have?

**Level 2**

1. A batsman scored the following number of runs in six innings: 36, 35, 50, 46, 60, 55

Calculate the mean runs scored by him in an inning.

1. Ashish studies for 4 hours, 5 hours and 3 hours respectively on three consecutive days. How many hours does he study daily on an average?
2. Find the mean of first six odd natural numbers.
3. Find the mean of first five prime numbers.
4. Find the mean of first six multiples of 5.
5. Find the median of first 15 odd numbers.
6. Find the median of first 10 even numbers.
7. Find the median of 3, 11, 7, 2, 5, 9, 9, 2, 10.
8. Find the mean and median of 9, 25, 18, 15, 6, 16, 8, 22, 21.
9. The ages in years of 10 teachers of a school are:

32, 41, 28, 54, 35, 26, 23, 33, 38, 40

* 1. What is the age of the oldest teacher and that of the youngest teacher?
  2. What is the range of the ages of the teachers?
  3. What is the mean age of these teachers?

**Level 3**

1. A cricketer scores the following runs in eight innings: 58, 76, 40, 35, 46, 45, 0, 100. Find the mean score.
2. 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.

* 1. Range of the marks obtained.
  2. Mean marks obtained by the group.

1. 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.
2. What is the height of the tallest girl? (ii) What is the height of the shortest girl?
3. What is the range of the data? (iv) What is the mean height of the girls?
   1. How many girls have heights more than the mean height.?
4. Following are the margins of victory in the football matches of a league.

1, 3, 2, 5, 1, 4, 6, 2, 5, 2, 2, 2, 4, 1, 2, 3, 1, 1, 2, 3, 2,

Find the mode of this data.

1. The scores in mathematics test (out of 25) of 15 students is as follows:

19, 25, 23, 20, 9, 20, 15, 10, 5, 16, 25, 20, 24, 12, 20 Find the mode and median of this data. Are they same?

1. The runs scored in a cricket match by 11 players is as follows:

6, 15, 120, 50, 100, 80, 10, 15, 8, 10, 15

Find the mean, mode and median of this data. Are the three same?

1. The weights (in kg.) of 15 students of a class are:

38, 42, 35, 37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47

* 1. Find the mode and median of this data.
  2. Is there more than one mode?

1. Find the mode and median of the data: 13, 16, 12, 14, 19, 12, 14, 13, 14
2. Two hundred students of 6th and 7th class were asked to name their favourite colour so as to decide upon what should be the colour of their School Building. The results are shown in the following table. Represent the given data on a bar graph.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Favourite Colour** | | | Red | Green | White | Yellow | Blue |
|  | Number of Students | | | 43 | 19 | 55 | 49 | 34 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

Answer the following questions with the help of the bar graph:

(i) Which is the most preferred colour and which is the least preferred?

(ii) How many colours are there in all? What are they?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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|  |  | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | Students | | |  |  | Ajay |  | Bali | |  | Dipti | |  | Geetika | | | Hari | |  | Faiyaz | |  |
|  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | **Marks Obtained** | | | | 450 | |  | 500 | |  | 300 | |  | 360 | |  | 400 | |  | 540 | |  |
| 1. **.** | A mathematics teacher wants to see, whether the new technique of teaching she applied after | | | | | | | | | | | | | | | | | | | | | | | |
|  | quarterly test was effective or not. She takes the scores of the 5 weakest children in the quarterly | | | | | | | | | | | | | | | | | | | | | | | |
|  | test (out of 25) and in the half yearly test (out of 25): | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | **Students** | | |  | Ashish | |  | Kavish | | |  | Mohan | |  | Arun | |  | Uday | |  | |
|  |  |  |  | **Quarterly** | | |  | 10 |  |  |  | 15 | |  | 12 | |  | 9 | |  | 20 | |  |  |
|  |  |  |  | **Half Yearly** | | |  | 15 |  |  |  | 18 | |  | 16 | |  | 15 | |  | 21 | |  |  |
|  | There are 6 marbles in a box with numbers from 1 to 6 marked on each of them. | | | | | | | | | | | | | | | | | | | | | | | |
|  | (i) What is the probability of drawing a marble with number 2? | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |
|  | (ii) What is the probability of drawing a marble with number 5? | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |
| 1. **.** | When a die is thrown, list the outcomes of an event of getting (i) (a) a prime number (b) not a | | | | | | | | | | | | | | | | | | | | | | | |
|  | prime number. (ii) (a) a number greater than 5 (b) a number not greater than 5.  WORKSHEET  **CLASS – VII: CHAPTER – 3**  **DATA HANDLING**   * 1. Find the mean of the first seven natural numbers.   2. What is the median of the first ten prime numbers?   3. Find The mode of the data 2 , 2 , 2 , 3 , 3 , 4 , 5 , 5 , 5, 6 , 6 , 8.   4. A cricketer scores the following runs in eight innings :  |  | | --- | | 58 , 76 , 40 , 35 , 46 , 45 , 0 , 100 | | What will be their mean score ?  5. Following are the aggregate marks (out of 600)obtained by students of a group in class seventh   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Student | Ajay | Bali | Dipti | Gitika | Hari | Fayaz | | Marks | 450 | 500 | 300 | 360 | 400 | 540 | | | | | | | | | | | | | | | | | | | | | | | | | |