Mean of tabulated data

## **Understanding: Mean of Tabulated Data**

- Mean is also called average
- It is the value that represents the central tendency of the data
- When data is tabulated (arranged in a table with frequencies), we use the mean formula to find the average

# Formula to Find Mean of Tabulated Data

- Mean = <u>Sum of all observations</u> Total number of observations
- When data is in frequency table:

 $Mean = \frac{Sum of (value \times frequency)}{Sum of frequencies}$ 

### **Steps to Solve**

- Multiply each value by its frequency
- Add all the products
- Divide the total by the sum of frequencies

### **Examples with Solutions**

**Example:** Find the mean of the first five multiples of 4.

**Solution:** The first five multiples of 4 are 4, 8, 12, 16 and 20.

Hence, Their mean = 
$$\frac{4+8+12+16+20}{5}$$
  
=  $\frac{60}{5}$  = 12

Example: Number of books read - 1, 2, 3, 4

Frequency - 2, 3, 4, 1 Sum =  $(1 \times 2 + 2 \times 3 + 3 \times 4 + 4 \times 1) = 2 + 6 + 12 + 4 = 24$ Total frequency = 2 + 3 + 4 + 1 = 10Mean =  $\frac{24}{10} = 2.4$ Mean = 2.4 Example: Score - 5, 10, 15 Frequency - 2, 4, 2 Sum =  $(5 \times 2 + 10 \times 4 + 15 \times 2) = 10 + 40 + 30 = 80$ Total frequency = 2 + 4 + 2 = 8Mean =  $\frac{80}{8} = 10$ Mean = 10 Example: Age of children - 6, 7, 8

Frequency – 3, 5, 2 Sum =  $(6 \times 3 + 7 \times 5 + 8 \times 2) = 18 + 35 + 16 = 69$ Total frequency = 3 + 5 + 2 = 10Mean =  $\frac{69}{10} = 6.9$ Mean = 6.9Example: Number of pencils – 1, 2, 3 Frequency – 4, 3, 3

Sum =  $(1 \times 4 + 2 \times 3 + 3 \times 3) = 4 + 6 + 9 = 19$ Total frequency = 4 + 3 + 3 = 10Mean =  $\frac{19}{10} = 1.9$ Mean = 1.9

#### **Summary Points**

- Mean is the average value of a data set
- Use frequency × value to get the total sum
- Divide total sum by total frequency
- Mean helps to understand the central value of data
- Useful in analyzing survey data, scores, and records