

# Mean and Median

## EXERCISE 34 (A)

### Question 1.

Find the mean of :

(i) 7, 10, 4 and 17

(ii) 12, 9, 6, 11 and 17

(iii) 3, 1, 5, 4, 4 and 7

(iv) 7, 5, 0, 3, 0, 6, 0, 9, 1 and 4

(v) 2.1, 4.5, 5.2, 7.1 and 9.3

(vi) 5, 2.4, 6.2, 8.9, 4.1 and 3.4

**Answer:**

(i) 7, 10, 4 and 17

$$\text{Required mean} = \frac{\text{Sum of data values}}{\text{No. of data values}}$$

$$= \frac{7+10+4+17}{4}$$

$$= \frac{38}{4} = 9.5$$

(ii) Mean of 12, 9, 6, 11 and 17

$$\text{Required mean} = \frac{\text{Sum of data values}}{\text{No. of data values}}$$

$$= \frac{12+9+6+11+17}{5}$$

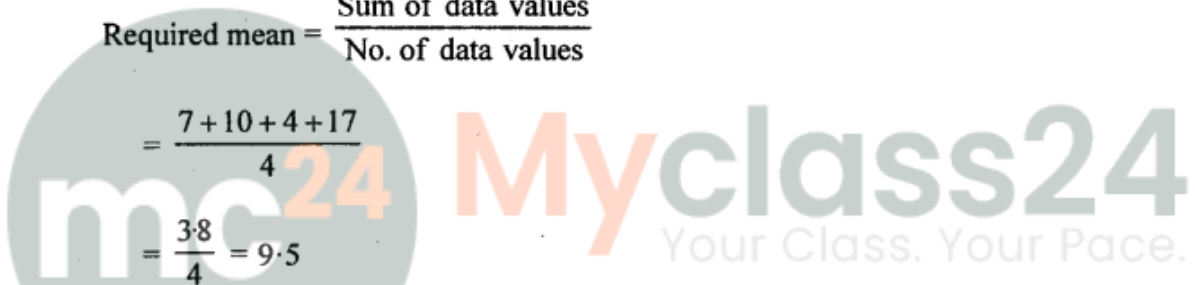
$$= \frac{55}{5} = 11$$

(iii) Mean of 3, 1, 5, 4, 4 and 7

$$\text{Required mean} = \frac{\text{Sum of data values}}{\text{No. of data values}}$$

$$= \frac{3+1+5+4+4+7}{6}$$

$$= \frac{24}{6} = 4$$



(iv) Mean of 7, 5, 0, 3, 0, 6, 0, 9, 1 and 4

$$\begin{aligned}\text{Required mean} &= \frac{\text{Sum of data values}}{\text{No. of data values}} \\ &= \frac{7+5+0+3+0+6+0+9+1+4}{10} \\ &= \frac{35}{10} = 3.5\end{aligned}$$

(v) Mean of 2.1, 4.5, 5.2, 7.1 and 9.3

$$\begin{aligned}\text{Required mean} &= \frac{\text{Sum of data values}}{\text{No. of data values}} \\ &= \frac{2.1+4.5+5.2+7.1+9.3}{5} \\ &= \frac{28.2}{5} = 5.64\end{aligned}$$

(vi) Mean of 5, 2.4, 6.2, 8.9, 4.1 and 3.4

$$\begin{aligned}\text{Required mean} &= \frac{\text{Sum of data values}}{\text{No. of data values}} \\ &= \frac{5+2.4+6.2+8.9+4.1+3.4}{6} \\ &= \frac{30}{6} = 5\end{aligned}$$

### Question 2.

Find the mean of :

- (i) first eight natural numbers
- (ii) first six even natural numbers
- (iii) first five odd natural numbers
- (iv) all prime numbers upto 30
- (v) all prime numbers between 20 and 40.

**Answer:**

(i) The first eight natural numbers are 1, 2, 3, 4, 5, 6, 7, 8

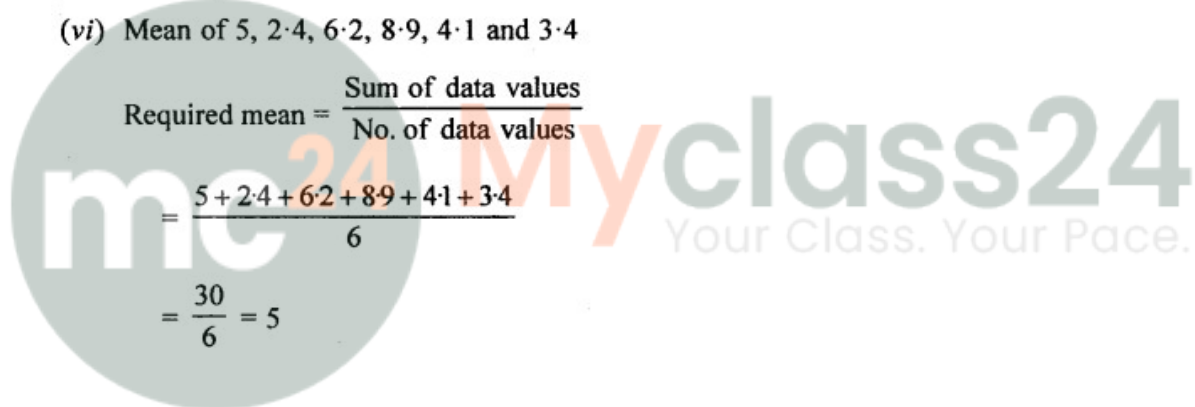
∴ Sum of these observations = 1+2+3+4+5+6+7+8=36

and, number of their observations = 8

∴ Required mean =  $\frac{36}{8} = 4.5$

(ii) The first six even natural numbers are 2, 4, 6, 8, 10, 12

∴ Sum of these observations = 2, 4, 6, 8, 10, 12 = 42



and, number of their observations = 6

$$\therefore \text{Required mean} = \frac{42}{6} = 7$$

(iii) The first five odd natural numbers are = 1, 3, 5, 7, 9

$$\therefore \text{Sum of these observations} = 1 + 3 + 5 + 7 + 9 = 25$$

and, number of their observations = 5

$$\therefore \text{Required mean} = \frac{25}{5} = 5$$

(iv) The all prime numbers upto 30 are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

$$\therefore \text{Sum of these observations} = 2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23 + 29 = 129$$

and, number of their observations = 10

$$\therefore \text{Required mean} = \frac{129}{10} = 12.9$$

(v) All prime numbers between 20 and 40 are 23, 29, 31, 37

$$\text{Sum of these observations} = 23 + 29 + 31 + 37 = 120$$

and, number of their observations = 4

120

$$\therefore \text{Required mean} = \frac{120}{4} = 30$$

### Question 3.

Height (in cm) of 7 boys of a locality are 144 cm, 155 cm, 168 cm, 163 cm, 167 cm, 151 cm and 158 cm. Find their mean height.

**Answer:**

Sum of the values = Sum of heights

$$= 144 \text{ cm} + 155 \text{ cm} + 168 \text{ cm} + 163 \text{ cm} + 167 \text{ cm} + 151 \text{ cm} + 158 \text{ cm} = 1106 \text{ cm}$$

Number of values = Number of boys = 7

$$\therefore \text{The mean} = \frac{\text{Sum of heights}}{\text{Number of boys}} = \frac{1106}{7} = 158 \text{ cm}$$

### Question 4.

Find the mean of 35, 44, 31, 57, 38, 29, 26, 36, 41 and 43.

**Answer:**

$$\text{Sum of the values} = 35 + 44 + 31 + 57 + 38 + 29 + 26 + 36 + 41 + 43 = 380$$

and Number of values = 10

$$\therefore \text{Mean} = \frac{\text{Sum of the values}}{\text{Number of the value}} = \frac{380}{10} = 38$$

### Question 5.

The mean of 18, 28, x, 32, 14 and 36 is 23. Find the value of x. Sum of data

**Answer:**

$$\therefore \text{Mean} = \frac{\text{Sum of data}}{\text{Number of data}}$$

$$\Rightarrow 23 = \frac{18 + 28 + x + 32 + 14 + 36}{6}$$

$$\Rightarrow 23 = \frac{128 + x}{6}$$

$$\Rightarrow 23 \times 6 = 128 + x$$

$$\Rightarrow 138 = 128 + x$$

$$\Rightarrow 138 - 128 = x$$

$$\therefore x = 10$$

**Question 6.**

If the mean of  $x$ ,  $x + 2$ ,  $x + 4$ ,  $x + 6$  and  $x + 8$  is 13, find the value of  $x$ . Sum of data

**Answer:**

$$\therefore \text{Mean} = \frac{\text{Sum of data}}{\text{Number of data}}$$

$$\Rightarrow 13 = \frac{x + (x + 2) + (x + 4) + (x + 6) + (x + 8)}{5}$$

$$\Rightarrow 13 = \frac{5x + 20}{5}$$

$$\Rightarrow 13 \times 5 = 5x + 20$$

$$\Rightarrow 65 - 20 = 5x$$

$$\Rightarrow 45 = 5x$$

$$\Rightarrow x = \frac{45}{5}$$

$$\therefore x = 9$$