



# MATHS

## BOOKS - S CHAND MATHS (ENGLISH)

### MEASURES OF CENTRAL TENDENCY

#### Example

1. Calculate the arithmetic mean of the following scores by both direct and short-cut methods : 17, 39, 21, 50, 27, 19, 24, 23, 10, 35.



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2. The arithmetic mean of the marks obtained by 10 students of class X in Mathematics in a certain examination is 30. The marks obtained are 25, 30, 21, 55, 47, 10, 15,  $x$ , 45, 35. Find the value of  $x$ .



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3. If  $\bar{x}$  is the mean of  $x_1, x_2, \dots, x_n$  show that the mean of  $x_1 + a, x_2 + a, \dots, x_n + a$  is  $\bar{x} + a$  where  $a$  is any number positive or negative.

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4. If  $\bar{x}$  is the mean of  $x_1, x_2, \dots, x_n$ , show that mean of  $ax_1, ax_2, ax_3, \dots, ax_n$  is  $a\bar{x}$ .

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5. Mean of 25 observations was found to be 78.4. But later it was found that 96 was misread as 69. Find the correct mean.



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## Exercise

1. Find the mean of:

(i) the first 6 natural numbers.



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2. Find the mean of:

(ii) the first ten odd natural numbers.



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3. Find the mean of:

(iii) the first eight even natural numbers.



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4. Find the mean of:

(iv)  $x$ ,  $x + 2$ ,  $x + 3$ ,  $x + 6$  and  $x + 8$ .



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5. Find the mean of:

(v) Squares of the first  $n$  natural numbers.



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6. Find the mean of:

( vi) Squares of the first 10 natural numbers.



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7. Find the mean of:

( vii) Cubes of first  $n$  even natural numbers.



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**8.** (i) Find the mean of the following sets of numbers:

(a) 2.5, 2.4, 3.5, 2.8, 2.9, 3.3, 3.6



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**9.** (i) Find the mean of the following sets of numbers:

(b)  $-6$ ,  $-2$ ,  $-1$ ,  $0$ ,  $1$ ,  $2$ ,  $5$ ,  $9$ .



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10. (ii) The mean of the numbers 6,  $y$ , 7,  $x$ , 14 is 8. Express  $y$  in terms of  $x$ .



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11. Duration of sunshine (in hours) in Delhi for first ten days of month as reported by Meteorological department are as under :

5.1, 4.7, 6.1, 1.7, 5.4, 5.0, 11.7, 11.6, 11.9, 3.2

(i) Calculate  $\bar{x}$ ,



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**12.** The mean of 40 observations was 160. It was detected on re-checking that the value 125 was wrongly copied as 165 for the computation of the mean. Find the correct mean.



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**13.** The mean of 30 values was 150. It was detected on re-checking that the value 165 was

wrongly copied as 135 for the computation of the mean. Find the correct mean.



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**14.** The sum of deviations of set of values  $x_1, x_2, \dots, x_n$  measured from 50 is  $-10$  and the sum of deviations of values from 46 is 70. Find the value of  $n$  and the mean.



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