

CHAPTER FIFTEEN

Averages, Sums and products

- To find the average of three numbers, we first add them together and divide our answer by 3.
- To find the average of two numbers, we add these two numbers up and divide the result by 2.
- Lastly to find the average of six numbers, we first add up these six numbers and divide our answer by 6.

Q1. Find the average of the following

numbers: 20 and 10.

Soln.

$$\text{The average} = \frac{20+10}{2} = \frac{30}{2} = 15.$$

Q2. Find the average of 6, 4 and 2.

Soln.

$$\text{The average} = \frac{6+4+2}{3} = \frac{12}{3} = 4.$$

Q3. Find the average of 30, 10 and 20.

Soln.

$$\text{The average} = \frac{30+10+20}{3} = \frac{60}{3} = 20.$$

Q4. Calculate the average of 10,20,8 and 2

Soln.

The average = $\frac{10+20+8+2}{4} = \frac{40}{4} = 10$.

Q5. The average of two numbers is 6.

If one of these numbers is 7, find the other one.

Soln.

Let x = the other number.

Then the average of 7 and x is equal to 6,

$$\Rightarrow \frac{7+x}{2} = 6,$$

$$\Rightarrow 7+x = 2 \times 6,$$

$$\Rightarrow 7+x = 12, \Rightarrow x = 12 - 7 = 5.$$

Q6. The average of two numbers is 3. If one of these numbers is 2, find the other one.

Soln.

Let x = the other number. Then the average of 2 and x = 3, $\Rightarrow \frac{2+x}{2} = 3$,

$$\Rightarrow 2+x = 2 \times 3, \Rightarrow 2+x = 6,$$

$$\Rightarrow x = 6 - 2, = 4.$$

Q7. The average of three numbers is 5.

If two of these numbers are 8 and 3, find the third one.

Soln.

Let x = the third number. Then the average of 8, 3 and x = 5, $\Rightarrow \frac{8+3+x}{3} = 5, \Rightarrow$

$$8+3+x = 3 \times 5,$$

$$\Rightarrow 11+x = 15, \Rightarrow x = 15 - 11 = 4.$$

\therefore The third number = 4.

Q8. A boy calculated the average of four numbers and had 5 as the average. If 2, 4 and 8 are three of these numbers, find the fourth one.

Soln.

Let x = the unknown or the fourth number.

Then the average of x , 2, 4 and 8 = 5.

$$\therefore \frac{x + 2 + 4 + 8}{4} = 5, \Rightarrow x + 2 + 4 + 8 = 4 \times 5,$$

$$\therefore x + 14 = 20, \Rightarrow x = 20 - 14 = 6, \Rightarrow \text{the fourth number} = 6.$$