

CHAPTER TWO

AVERAGE, SUM AND PRODUCT

Introduction:

- 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 those two numbers together and divide our answer by 2.
- Lastly to find the average of four numbers, we add these numbers together and divide our answer by 4.

(Q1) Find the average of 6 and 4.

Soln:

$$\frac{6+4}{2} = \frac{10}{2} = 5$$

(Q2) Find the average of 2 and 12.

Soln:

$$\text{The average} = \frac{2+12}{2} = \frac{14}{2} = 7.$$

(Q3) Find the average of 2, 4 and 6.

Soln:

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

(Q4) Determine the average of the following numbers: 1, 3 and 5.

Soln:

$$\text{The average} = \frac{1+3+5}{3} = \frac{9}{3} = 3.$$

(Q5) Determine the average of $2x$ and $6x$.

Soln:

$$\text{The average} = \frac{2x + 6x}{2} = \frac{8x}{2} = 4x.$$

(Q6) Determine the average of $3y$ and $7y$.

Soln:

$$\text{The average} = \frac{3y + 7y}{2} = \frac{10y}{2} = 5y.$$

(Q7) Calculate the average of $2x$, $4x$ and $6x$.

Soln:

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

(Q8) Determine the average of x , $4x$ and $10x$.

Soln:

$$\frac{x + 4x + 10x}{3} = \frac{15x}{3} = 5x.$$

(Q9) Calculate the average of $3a$, $4a$ and $5a$.

Soln:

$$\frac{3a + 4a + 5a}{3} = \frac{12a}{3} = 4a.$$

(Q10) The average of two numbers is 6. If one of these numbers is 7, find the other number.

Soln:

Let x = the other number.

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

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

$$\Rightarrow x + 7 = 14 \Rightarrow x = 14 - 7 = 7.$$

The other number = 7.

(Q11) The average of two numbers is 3. If one of these numbers is 2, find the other number.

Soln:

Let x = the other number

Then the average of 2 and $x = 3$

$$\Rightarrow \frac{2+x}{2} = 3 \Rightarrow 2 + x = 2 \times 3$$

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

\Rightarrow The other number is 4.

(Q12) The average of three numbers is 5. If two of these numbers are 8 and 3, find the third number.

Soln:

Let x = the third number.

Then the average of 8, 3 and x is equal to 5.

$$\Rightarrow \frac{8+3+x}{3} = 5$$

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

$$\Rightarrow 11 + x = 15$$

$$\Rightarrow x = 15 - 11 \Rightarrow x = 4$$

\therefore The third number is 4.

(Q13) A boy calculated the average of three numbers and had 5 as his answer. If two of these numbers are 4 and 5, determine the third one.

Soln:

Let x = the third number.

Then the average of 4, 5 and x is equal to 5.

$$\Rightarrow \frac{4+5+x}{3} = 5$$

$$\Rightarrow \frac{9+x}{3} = 5 \Rightarrow 9+x = 3 \times 5$$

$$\Rightarrow 9+x = 15 \Rightarrow x = 15 - 9$$

$$\Rightarrow x = 6.$$

$$\Rightarrow \text{The third number} = 6.$$