

EXERCISE 8.1**PAGE: 8.7**

1. Write the following using numbers, literals and signs of basic operations. State what each letter represents:

- (i) The diameter of a circle is twice its radius.
- (ii) The area of a rectangle is the product of its length and breadth.
- (iii) The selling price equals the sum of the cost price and the profit.
- (iv) The total amount equals the sum of the principal and the interest.
- (v) The perimeter of a rectangle is two times the sum of its length and breadth.
- (vi) The perimeter of a square is four times its side.

Solution:

(i) Consider d as the diameter and r as the radius of the circle
Hence, we get $d = 2r$.

(ii) Consider A as the area, l as the length and b as the breadth of a rectangle
Hence, we get $A = l \times b$.

(iii) Consider $S.P$ as the selling price, $C.P$ as the cost price and P as the profit
Hence, we get $S.P = C.P + P$

(iv) Consider A as the amount, P as the principal and I as the interest
Hence, we get $A = P + I$

(v) Consider P as the perimeter, l as the length and b as the breadth of a rectangle
Hence, $P = 2(l + b)$

(vi) Consider P as the perimeter and a as the side of a square
Hence, $P = 4a$

2. Write the following using numbers, literals and signs of basic operations:

- (i) The sum of 6 and x .
- (ii) 3 more than a number y .
- (iii) One-third of a number x .
- (iv) One-half of the sum of number x and y .
- (v) Number y less than a number 7.
- (vi) 7 taken away from x .
- (vii) 2 less than the quotient of x and y .
- (viii) 4 times x taken away from one-third of y .
- (ix) Quotient of x by 3 is multiplied by y .

Solution:

(i) The sum of 6 and x can be written as $6 + x$.

(ii) 3 more than a number y can be written as $y + 3$.

(iii) One-third of a number x can be written as $x/3$.

(iv) One-half of the sum of number x and y can be written as $(x + y)/2$.

- (v) Number y less than a number 7 can be written as $7 - y$.
- (vi) 7 taken away from x can be written as $x - 7$.
- (vii) 2 less than the quotient of x and y can be written as $x/y - 2$.
- (viii) 4 times x taken away from one-third of y can be written as $y/3 - 4x$.
- (ix) Quotient of x by 3 is multiplied by y can be written as $xy/3$.

3. Think of a number. Multiply by 5. Add 6 to the result. Subtract y from this result. What is the result?
Solution:

Consider x as the number.
Multiplying the number by $5 = 5x$
Again add 6 to the number $= 5x + 6$
By subtracting y from the above equation $= 5x + 6 - y$.

Hence, the result is $5x + 6 - y$.

4. The number of rooms on the ground floor of a building is 12 less than the twice of the number of rooms on first floor. If the first floor has x rooms, how many rooms does the ground floor has?
Solution:

Consider y as the number of rooms on the ground floor
We know that
The number of rooms on the first floor $= x$
It is given that number of rooms on the ground floor of a building is 12 less than the twice of the number of rooms on first floor
So we get
 $y = 2x - 12$

Hence, the rooms on the ground floor is $y = 2x - 12$.

5. Binny spend Rs a daily and saves Rs b per week. What is her income for two weeks?
Solution:

Amount spent by Binny $= \text{Rs } a$
Amount saved by Binny $= \text{Rs } b$
Amount spent by Binny in one week $= 7a$
So the total income for one week $= \text{Amount spent by Binny in one week} + \text{Amount saved by Binny}$
Substituting the values
Total income for one week $= 7a + b$
We get Binny's income for 2 weeks $= 2(7a + b) = \text{Rs } 14a + 2b$

Hence, the income of Binny for two weeks is $\text{Rs } 14a + 2b$.

6. Rahul scores 80 marks in English and x marks in Hindi. What is his total score in the two subjects?
Solution:

Marks scored by Rahul in English = 80

Marks scored by Rahul in Hindi = x

So the total scores in the two subjects = $x + 80$

Hence, the total score of Rahul in two subjects is $x + 80$.

7. Rohit covers x centimetres in one step. How much distance does he cover in y steps?

Solution:

Distance covered by Rohit in one step = x cm

So the distance covered by Rohit in y steps = xy cm

Hence, Rohit covers xy cm in y steps.

8. One apple weighs 75 grams and one orange weighs 40 grams. Determine the weight of x apples and y oranges.

Solution:

Weight of one apple = 75 g

Weight of one orange = 40 g

So the weight of x apples = $75x$ g

So the weight of y oranges = $40y$ g

We get the weight of x apples and y oranges = $(75x + 40y)$ g

Hence, the weight of x apples and y oranges is $(75x + 40y)$ g.

9. One pencil costs Rs 2 and one fountain pen costs Rs 15. What is the cost of x pencils and y fountain pens?

Solution:

Cost of one pencil = Rs 2

Cost of one fountain pen = Rs 15

Cost of x pencils = $2x$

Cost of y fountain pens = $15y$

So the cost of x pencils and y fountain pens = Rs $(2x + 15y)$

Hence, the cost of x pencils and y fountain pens is Rs $(2x + 15y)$.