

## EXERCISE 12D

**1. One-fifth of a number is 5, find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$\frac{1}{5}x = 5$$

By cross multiplication

$$x = 5 \times 5 = 25$$

Hence, the number is 25.

**2. Six times a number is 72, find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$6x = 72$$

So we get

$$x = 72/6 = 12$$

Hence, the number is 12.

**3. If 15 is added to a number, the result is 69, find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$x + 15 = 69$$

So we get

$$x = 69 - 15 = 54$$

Hence, the number is 54.

**4. The sum of twice a number and 4 is 80, find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$2x + 4 = 80$$

So we get

$$2x = 80 - 4 = 76$$

$$x = 76/2 = 38$$

Hence, the number is 38.

**5. The difference between a number and one-fourth of itself is 24, find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$x - \frac{1}{4}x = 24$$

Taking LCM

$$\frac{(4x - x)}{4} = 24$$

$$\frac{3x}{4} = 24$$

By cross multiplication

$$x = 24 \times \frac{4}{3}$$

So we get

$$x = 8 \times 4 = 32$$

Hence, the number is 32.

**6. Find a number whose one-third part exceeds its one-fifth part by 20.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$\frac{1}{3}x - \frac{1}{5}x = 20$$

Here the LCM of 3 and 5 is 15

$$\frac{(5x - 3x)}{15} = 20$$

$$\frac{2x}{15} = 20$$

So we get

$$x = 20 \times \frac{15}{2} = 150$$

Hence, the number is 150.

**7. A number is as much greater than 35 as is less than 53. Find the number.**

**Solution:**

Consider the number =  $x$

Based on the condition

$$x - 35 = 53 - x$$

By further calculation

$$2x = 88$$

So we get

$$x = \frac{88}{2} = 44$$

Hence, the number is 44.

**8. The sum of two numbers is 18. If one is twice the other, find the numbers.**

**Solution:**

Consider the first number =  $x$

Second number =  $y$

Based on the condition

$$x + y = 18 \dots\dots (1)$$

$$x = 2y \dots\dots (2)$$

Now substituting the equation (2) in (1)

$$2y + y = 18$$

$$3y = 18$$

So we get

$$y = 18/3 = 6$$

Substituting the value of y in equation (2)

$$x = 2 \times 6 = 12$$

Hence, the two numbers are 12 and 6.

**9. A number is 15 more than the other. The sum of the two numbers is 195. Find the numbers.**

**Solution:**

Consider the first number = x

Second number = y

Based on the condition

$$x = y + 15 \dots (1)$$

$$x + y = 195 \dots (2)$$

Now substituting equation (1) in (2) we get

$$y + 15 + y = 195$$

$$2y = 195 - 15 = 180$$

So we get

$$y = 180/2 = 90$$

Substituting the value of y in equation (1)

$$x = 90 + 15 = 105$$

Hence, the two numbers are 105 and 90.

**10. The sum of three consecutive even numbers is 54. Find the numbers.**

**Solution:**

Consider the first even number = x

Second even number = x + 2

Third even number = x + 4

Based on the condition

$$x + x + 2 + x + 4 = 54$$

By further calculation

$$3x + 6 = 54$$

$$3x = 54 - 6 = 48$$

So we get

$$x = 48/3 = 16$$

First even number = 16

Second even number = 16 + 2 = 18

Third even number = 16 + 4 = 20

**11. The sum of three consecutive odd numbers is 63. Find the numbers.**

**Solution:**

Consider the first odd number = x

Second odd number = x + 2

Third odd number = x + 4

Based on the condition

$$x + x + 2 + x + 4 = 63$$

By further calculation

$$3x + 6 = 63$$

$$3x = 63 - 6 = 57$$

So we get

$$x = 57/3 = 19$$

First odd number = 19

Second odd number =  $19 + 2 = 21$

Third odd number =  $19 + 4 = 23$

**12. A man has ₹ x from which he spends ₹ 6. If twice of the money left with him is ₹ 86, find x.**

**Solution:**

Consider ₹ x as the total amount

Based on the condition

$$2x = 86$$

By further calculation

$$x = 86/2 = 43$$

Amount spent by him = ₹ 6

So the total money he have =  $43 + 6 = ₹ 49$

**13. A man is four times as old as his son. After 20 years, he will be twice as old as his son at that time. Find their present ages.**

**Solution:**

Consider the present age of son = x years

So the present age of father = 4x years

After 20 years

Age of son = (x + 20) years

Age of father = (4x + 20) years

Based on the condition

$$4x + 20 = 2(x + 20)$$

By further calculation

$$4x + 20 = 2x + 40$$

$$2x = 20$$

So we get

$$x = 10$$

So the present age of son = 10 years

Present age of father =  $4 \times 10 = 40$  years

**14. If 5 is subtracted from three times a number, the result is 16. Find the number.**

**Solution:**

Consider x as the number

Based on the condition

$$3x - 5 = 16$$

By further calculation

$$3x = 16 + 5 = 21$$

So we get

$$x = 21/3 = 7$$

Hence, the number is 7.

**15. Find three consecutive natural numbers such that the sum of the first and the second is 15 more than the third.**

**Solution:**

Consider the first consecutive number =  $x$

Second consecutive number =  $x + 1$

Third consecutive number =  $x + 2$

Based on the condition

$$x + x + 1 = 15 + x + 2$$

By further calculation

$$2x + 1 = 17 + x$$

$$2x - x = 17 - 1$$

So we get

$$x = 16$$

First consecutive number = 16

Second consecutive number =  $16 + 1 = 17$

Third consecutive number =  $16 + 2 = 18$



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