EXERCISE 12D

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

Consider the number = x
Based on the condition
1/5x = 5
By cross multiplication
x = 5 × 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 – 1/4x = 24
Taking LCM
(4x – x)/ 4 = 24
3x/4 = 24
By cross multiplication
x = 24 × 4/3
So we get
x = 8 × 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
1/3x – 1/5x = 20
Here the LCM of 3 and 5 is 15
(5x – 3x)/ 15 = 20
2x/15 = 20
So we get
x = 20 × 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 = 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 ….. (1)
x = 2y …… (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 × 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 ….. (1)
x + 7 = 195 …. (2)
Now substituting equation (1) in (2) we get
y + 15 + 7 = 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 = 56
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 × 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