CHAPTER -4 Simple Equations | CLASS 7TH MATHS IMPORTANT QUESTIONS

Important Questions

Question 1.
Write the following statements in the form of equations.
(a) The sum of four times a number and 5 gives a number five times of it.
(b) One-fourth of a number is 2 more than 5.
Solution:
(a) Let the number be x.
Sum of 4x and 5 = 4x + 5
The sum is 5x.
The equation is 4x + 5 = 5x as required.
(b) Let the number be x.
14x = 5 + 2
⇒ 14x = 7 as required.

Question 2.
Convert the following equations in statement form:
(a) 5x = 20
(b) 3y + 7 = 1
Solution:
(a) Five times a number x gives 20.
(b) Add 7 to three times a number y gives 1.

Question 3.
If k + 7 = 10, find the value of 9k − 50.
Solution:
k + 7 = 10
⇒ k = 10 − 7 = 3
Put k = 3 in 9k − 50, we get
9 × 3 − 50 = 27 − 50 = -23
Thus the value of k = -23

Question 4.
Solve the following equations and check the answers.

Solution: $(a)\ \dfrac{5z+1}{3} = 7$ $\qquad (b)\ \dfrac{5x}{3} + 3 = x + 7$

(a) $\dfrac{5z+1}{3} = 7$

$\Rightarrow \quad \dfrac{5z+1}{3} \times 3 = 7 \times 3$

(Multiplying both sides by 3)

$\Rightarrow \qquad 5z + 1 = 21$

$\Rightarrow \qquad\quad 5z = 21 - 1$ (Transposing 1 to RHS)

$\Rightarrow \qquad\quad 5z = 20$

$\Rightarrow \qquad\quad \dfrac{5z}{5} = \dfrac{20}{5}$ (Dividing both sides by 5)

$\Rightarrow \qquad\quad z = 4$

Check: Put $z = 4$ in LHS

$$\dfrac{5 \times 4 + 1}{3} = \dfrac{20 + 1}{3} = \dfrac{21}{3}$$

$$= 7 \text{ RHS as required.}$$

(b) $\dfrac{5x}{3} + 3 = x + 7$

$\Rightarrow \qquad \dfrac{5x}{3} - x = 7 - 3$ (Transposing 3 to RHS

and x to LHS)

$\Rightarrow \qquad \dfrac{5x - 3x}{3} = 4$

$\Rightarrow \qquad\quad \dfrac{2x}{3} = 4$

$\Rightarrow \qquad \dfrac{2x}{3} \times 3 = 4 \times 3$ (Multiplying both sides by 3)

$\Rightarrow \qquad\quad 2x = 12$

$\Rightarrow \qquad\quad \dfrac{2x}{2} = \dfrac{12}{2}$ (Dividing both sides by 2)

$\Rightarrow \qquad\quad x = 6$

Check: Put $x = 6$ in LHS

$$\dfrac{5 \times \cancel{6}^{2}}{\cancel{3}} + 3 = 10 + 3 = 13$$

Put $\qquad\qquad x = 6$ in RHS

$\qquad\qquad 6 + 7 = 13$

$\qquad\qquad$ LHS = RHS

Hence verified.

Question 5.
Solve the following equations:
$3(y - 2) = 2(y - 1) - 3$
Solution:
$3(y - 2) = 2(y - 1) - 3$
$\Rightarrow 3y - 6 = 2y - 2 - 3$ (Removing the brackets)
$\Rightarrow 3y - 6 = 2y - 5$
$\Rightarrow 3y - 2y = 6 - 5$ (Transposing 6 to RHS and 2y to LHS)
$\Rightarrow y = 1$
Thus $y = 1$

Question 6.
If 5 is added to twice a number, the result is 29. Find the number.
Solution:
Let the required number be x.
Step I: $2x + 5$
Step II: $2x + 5 = 29$
Solving the equation, we get
$2x + 5 = 29$
$\Rightarrow 2x = 29 - 5$ (Transposing 5 to RHS)
$\Rightarrow 2x = 24$
$\Rightarrow x = 12$ (Dividing both sides by 2)
$\Rightarrow x = 12$
Thus the required number is 12.

Question 7.
If one-third of a number exceeds its one-fourth by 1, find the number.
Solution:
Let the required number be x.

$$\therefore \quad \frac{1}{3}x - \frac{1}{4}x = 1 \quad \Rightarrow \quad \frac{4x - 3x}{12} = 1$$

$$\Rightarrow \quad \frac{x}{12} = 1 \quad \Rightarrow \quad \frac{x}{12} \times 12 = 1 \times 12$$

(Multiplying both sides by 12)

$$\Rightarrow \quad x = 12$$

Thus, the required number is 12.