

Question:1

Verify by substitution that:

i $x = 4$ is the root of $3x - 5 = 7$

ii $x = 3$ is the root of $5 + 3x = 14$

iii $x = 2$ is the root of $3x - 2 = 8x - 12$

iv $x = 4$ is the root of $\frac{3x}{2} = 6$

v $y = 2$ is the root of $y - 3 = 2y - 5$

vi $x = 8$ is the root of $\frac{1}{2}x + 7 = 11$

Solution:

i $x = 4$ is the root of $3x - 5 = 7$.

Now, substituting $x = 4$ in place of 'x' in the given equation $3x - 5 = 7$,

$$3 \times 4 - 5 = 7$$

$$12 - 5 = 7$$

$$7 = 7$$

$$\text{LHS} = \text{RHS}$$

Hence, $x = 4$ is the root of $3x - 5 = 7$.

ii $x = 3$ is the root of $5 + 3x = 14$.

Now, substituting $x = 3$ in place of 'x' in the given equation $5 + 3x = 14$,

$$5 + 3 \times 3 = 14$$

$$5 + 9 = 14$$

$$14 = 14$$

$$\text{LHS} = \text{RHS}$$

Hence, $x = 3$ is the root of $5 + 3x = 14$.

iii $x = 2$ is the root of $3x - 2 = 8x - 12$.

Now, substituting $x = 2$ in place of 'x' in the given equation $3x - 2 = 8x - 12$,

$$3 \times 2 - 2 = 8 \times 2 - 12$$

$$6 - 2 = 16 - 12$$

$$4 = 4$$

$$\text{LHS} = \text{RHS}$$

Hence, $x = 2$ is the root of $3x - 2 = 8x - 12$.

iv $x = 4$ is the root of $\frac{3x}{2} = 6$.

Now, substituting $x = 4$ in place of 'x' in the given equation $\frac{3x}{2} = 6$,

$$\frac{3 \times 4}{2} = 6 \quad \frac{12}{2} = 6 \quad 6 = 6$$

$$\text{LHS} = \text{RHS}$$

Hence, $x = 4$ is the root of $\frac{3x}{2} = 6$.

v $y = 2$ is the root of $y - 3 = 2y - 5$.

Now, substituting $y = 2$ in place of 'y' in the given equation $y - 3 = 2y - 5$,

$$2 - 3 = 2 \times 2 - 5$$

$$-1 = 4 - 5$$

$$-1 = -1$$

LHS = RHS

Hence, $y = 2$ is the root of $y - 3 = 2y - 5$.

vi $x = 8$ is the root of $\frac{1}{2}x + 7 = 11$.

Now, substituting $x = 8$ in place of 'x' in the given equation $\frac{1}{2}x + 7 = 11$,

$$\frac{1}{2} \times 8 + 7 = 11$$

$$4 + 7 = 11$$

$$11 = 11$$

LHS = RHS

Hence, $x = 8$ is the root of $\frac{1}{2}x + 7 = 11$.

Question:2

Solve each of the following equations by trial-and-error method:

i $x + 3 = 12$

ii $x - 7 = 10$

iii $4x = 28$

iv $\frac{x}{2} + 7 = 11$

v $2x + 4 = 3x$

vi $\frac{x}{4} = 12$

vii $\frac{15}{x} = 3$

viii $\frac{x}{18} = 20$

Solution:

i $x + 3 = 12$

Here, LHS = $x + 3$ and RHS = 12.

x	LHS	RHS	Is LHS = RHS?
1	$1+3=4$	12	No
2	$2+3=5$	12	No
3	$3+3=6$	12	No
4	$4+3=7$	12	No
5	$5+3=8$	12	No
6	$6+3=9$	12	No
7	$7+3=10$	12	No

8	$8+3=11$	12	No
9	$9+3=12$	12	Yes

Therefore, if $x = 9$, LHS = RHS.

Hence, $x = 9$ is the solution to this equation.

ii $x - 7 = 10$

Here, LHS = $x - 7$ and RHS = 10.

x	LHS	RHS	Is LHS = RHS?
9	$9-7=2$	10	No
10	$10-7=3$	10	No
11	$11-7=4$	10	No
12	$12-7=5$	10	No
13	$13-7=6$	10	No
14	$14-7=7$	10	No
15	$15-7=8$	10	No
16	$16-7=9$	10	No
17	$17-7=10$	10	Yes

Therefore, if $x = 17$, LHS = RHS.

Hence, $x = 17$ is the solution to this equation.

iii $4x = 28$

Here, LHS = $4x$ and RHS = 28.

x	LHS	RHS	Is LHS = RHS?
1	$4 \times 1=4$	28	No
2	$4 \times 2=8$	28	No
3	$4 \times 3=12$	28	No
4	$4 \times 4=16$	28	No
5	$4 \times 5=20$	28	No
6	$4 \times 6=24$	28	No
7	$4 \times 7=28$	28	Yes

Therefore, if $x = 7$, LHS = RHS.

Hence, $x = 7$ is the solution to this equation.

iv $\frac{x}{2} + 7 = 11$

Here, LHS = $\frac{x}{2} + 7$ and RHS = 11.

Since RHS is a natural number, $\frac{x}{2}$ must also be a natural number, so we must substitute values of x that are multiples of 2.

x	LHS	RHS	Is LHS = RHS?
2	$\frac{2}{2}+7=8$	11	No
4	$\frac{4}{2}+7=9$	11	No
6	$\frac{6}{2}+7=10$	11	No
8	$\frac{8}{2}+7=11$	11	Yes

Therefore, if $x = 8$, LHS = RHS.

Hence, $x = 8$ is the solution to this equation.

v $2x + 4 = 3x$

Here, LHS = $2x + 4$ and RHS = $3x$.

x	LHS	RHS	Is LHS = RHS?
1	$2 \cdot 1 + 4 = 6$	$3 \cdot 1 = 3$	No
2	$2 \cdot 2 + 4 = 8$	$3 \cdot 2 = 6$	No
3	$2 \cdot 3 + 4 = 10$	$3 \cdot 3 = 9$	No
4	$2 \cdot 4 + 4 = 12$	$3 \cdot 4 = 12$	Yes

Therefore, if $x = 4$, LHS = RHS.

Hence, $x = 4$ is the solution to this equation.

vi $\frac{x}{4} = 12$

Here, LHS = $\frac{x}{4}$ and RHS = 12.

Since RHS is a natural number, $\frac{x}{4}$ must also be a natural number, so we must substitute values of x that are multiples of 4.

x	LHS	RHS	Is LHS = RHS?
16	$\frac{16}{4}=4$	12	No
20	$\frac{20}{4}=5$	12	No
24	$\frac{24}{4}=6$	12	No
28	$\frac{28}{4}=7$	12	No
32	$\frac{32}{4}=8$	12	No
36	$\frac{36}{4}=9$	12	No
40	$\frac{40}{4}=10$	12	No

44	$\frac{44}{4}=11$	12	No
48	$\frac{48}{4}=12$	12	Yes

Therefore, if $x = 48$, LHS = RHS.

Hence, $x = 48$ is the solution to this equation.

vii $\frac{15}{x} = 3$

Here, LHS = $\frac{15}{x}$ and RHS = 3.

Since RHS is a natural number, $\frac{15}{x}$ must also be a natural number, so we must substitute values of x that are factors of 15.

x	LHS	RHS	Is LHS = RHS?
1	$\frac{15}{1}=15$	3	No
3	$\frac{15}{3}=5$	3	No
5	$\frac{15}{5}=3$	3	Yes

Therefore, if $x = 5$, LHS = RHS.

Hence, $x = 5$ is the solution to this equation.

viii $\frac{x}{18} = 20$

Here, LHS = $\frac{x}{18}$ and RHS = 20.

Since RHS is a natural number, $\frac{x}{18}$ must also be a natural number, so we must substitute values of x that are multiples of 18.

x	LHS	RHS	Is LHS = RHS?
324	$\frac{324}{18}=18$	20	No
342	$\frac{342}{18}=19$	20	No
360	$\frac{360}{18}=20$	20	Yes

Therefore, if $x = 360$, LHS = RHS.

Hence, $x = 360$ is the solution to this equation.

Question:3

Solve each of the following equations and check your answers:

$$x - 3 = 5$$

Solution:

$$x - 3 = 5$$

Adding 3 to both sides, we get

$$\Rightarrow x - 3 + 3 = 5 + 3$$

$$\Rightarrow x = 8$$

Verification:

Substituting $x = 8$ in LHS, we get

$$\text{LHS} = x - 3 \text{ and RHS} = 5$$

$$\text{LHS} = 8 - 3 = 5 \text{ and RHS} = 5$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:4

Solution:

$$x + 9 = 13$$

Subtracting 9 from both sides, we get

$$\Rightarrow x + 9 - 9 = 13 - 9$$

$$\Rightarrow x = 4$$

Verification:

Substituting $x = 4$ on LHS, we get

$$\text{LHS} = 4 + 9 = 13 = \text{RHS}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:5

Solve each of the following equations and check your answers:

$$x - \frac{3}{5} = \frac{7}{5}$$

Solution:

$$x - \frac{3}{5} = \frac{7}{5}$$

Adding $\frac{3}{5}$ to both sides, we get

$$\Rightarrow x - \frac{3}{5} + \frac{3}{5} = \frac{7}{5} + \frac{3}{5}$$

$$\Rightarrow x = \frac{7+3}{5}$$

$$\Rightarrow x = \frac{10}{5}$$

$$\Rightarrow x = 2$$

Verification:

Substituting $x = 2$ in LHS, we get

$$\text{LHS} = 2 - \frac{3}{5} = \frac{10-3}{5} = \frac{7}{5}, \text{ and RHS} = \frac{7}{5}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:6

Solve each of the following equations and check your answers:

$$3x = 0$$

Solution:

$$3x = 0$$

Dividing both sides by 3, we get

$$\Rightarrow \frac{3x}{3} = \frac{0}{3}$$

$$\Rightarrow x = 0$$

Verification:

Substituting $x = 0$ in $\text{LHS} = 3x$, we get

$$\text{LHS} = 3 \times 0 = 0 \text{ and } \text{RHS} = 0$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:7

Solve each of the following equations and check your answers:

$$\frac{x}{2} = 0$$

Solution:

$$\frac{x}{2} = 0$$

Multiplying both sides by 2, we get

$$\Rightarrow \frac{x}{2} \times 2 = 0 \times 2$$

$$\Rightarrow x = 0$$

Verification:

Substituting $x = 0$ in LHS , we get

$$\text{LHS} = \frac{0}{2} = 0 \text{ and } \text{RHS} = 0$$

$$\text{LHS} = 0 \text{ and } \text{RHS} = 0$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:8

Solve each of the following equations and check your answers:

$$x - \frac{1}{3} = \frac{2}{3}$$

Solution:

$$x - \frac{1}{3} = \frac{2}{3}$$

⇒ Adding $\frac{1}{3}$ to both sides, we get

$$\Rightarrow x - \frac{1}{3} + \frac{1}{3} = \frac{2}{3} + \frac{1}{3}$$

$$\Rightarrow x = \frac{2+1}{3}$$

$$\Rightarrow x = \frac{3}{3}$$

$$\Rightarrow x = 1$$

Verification:

Substituting $x = 1$ in LHS, we get

$$\text{LHS} = 1 - \frac{1}{3} = \frac{3-1}{3} = \frac{2}{3}, \text{ and RHS} = \frac{2}{3}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:9

Solve each of the following equations and check your answers:

$$x + \frac{1}{2} = \frac{7}{2}$$

Solution:

$$x + \frac{1}{2} = \frac{7}{2}$$

⇒ Subtracting $\frac{1}{2}$ from both sides, we get

$$\Rightarrow x + \frac{1}{2} - \frac{1}{2} = \frac{7}{2} - \frac{1}{2}$$

$$\Rightarrow x = \frac{7-1}{2} = \frac{6}{2}$$

$$\Rightarrow x = 3$$

Verification:

Substituting $x = 3$ in LHS, we get

$$\text{LHS} = 3 + \frac{1}{2} = \frac{6+1}{2} = \frac{7}{2}, \text{ and RHS} = \frac{7}{2}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:10

Solve each of the following equations and check your answers:

$$10 - y = 6$$

Solution:

$$10 - y = 6$$

Subtracting 10 from both sides, we get

$$\Rightarrow 10 - y - 10 = 6 - 10$$

$$\Rightarrow -y = -4.$$

⇒ Multiplying both sides by -1 , we get

$$\Rightarrow -y \times -1 = -4 \times -1$$

$$\Rightarrow y = 4$$

Verification:

Substituting $y = 4$ in LHS, we get

$$\text{LHS} = 10 - y = 10 - 4 = 6 \text{ and } \text{RHS} = 6$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:11

Solve each of the following equations and check your answers:

$$7 + 4y = -5$$

Solution:

$$7 + 4y = -5$$

Subtracting 7 from both sides, we get

$$\Rightarrow 7 + 4y - 7 = -5 - 7$$

$$\Rightarrow 4y = -12$$

Dividing both sides by 4, we get

$$\Rightarrow y = \frac{-12}{4}$$

$$\Rightarrow y = -3$$

Verification :

Substituting $y = -3$ in LHS, we get

$$\text{LHS} = 7 + 4y = 7 + 4(-3) = 7 - 12 = -5, \text{ and } \text{RHS} = -5$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:12

Solve each of the following equations and check your answers:

$$\frac{4}{5} - x = \frac{3}{5}$$

Solution:

$$\frac{4}{5} - x = \frac{3}{5}$$

Subtracting $\frac{4}{5}$ from both sides, we get

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

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

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

Multiplying both sides by -1, we get

$$\Rightarrow -x \times -1 = -\frac{1}{5} \times -1$$

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

Verification:

Substituting $x = \frac{1}{5}$ in LHS, we get

$$\text{LHS} = \frac{4}{5} - \frac{1}{5} = \frac{4-1}{5} = \frac{3}{5}, \text{ and RHS} = \frac{3}{5}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:13

Solve each of the following equations and check your answers:

$$2y - \frac{1}{2} = -\frac{1}{3}$$

Solution:

$$2y - \frac{1}{2} = -\frac{1}{3}$$

Adding $\frac{1}{2}$ to both sides, we get

$$\Rightarrow 2y - \frac{1}{2} + \frac{1}{2} = -\frac{1}{3} + \frac{1}{2}$$

$$\Rightarrow 2y = \frac{-2+3}{6}$$

$$\Rightarrow 2y = \frac{1}{6}$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2y}{2} = \frac{1}{6 \times 2}$$

$$\Rightarrow y = \frac{1}{12}$$

Verification:

Substituting $y = \frac{1}{12}$ in LHS, we get

$$\text{LHS} = 2 \times \left(\frac{1}{12}\right) - \frac{1}{2} = \frac{1}{6} - \frac{1}{2} = \frac{1-3}{6} = \frac{-2}{6} = -\frac{1}{3}, \text{ and RHS} = -\frac{1}{3}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:14

Solve each of the following equations and check your answers:

$$14 = \frac{7x}{10} - 8$$

Solution:

$$14 = \frac{7x}{10} - 8$$

Adding 8 to both sides, we get

$$\Rightarrow 14 + 8 = \frac{7x}{10} - 8 + 8$$

$$\Rightarrow 22 = \frac{7x}{10}$$

Multiplying both sides by 10, we get

$$\Rightarrow 22 \times 10 = \frac{7x}{10} \times 10$$

$$\Rightarrow 220 = 7x$$

Dividing both sides by 7, we get

$$\Rightarrow \frac{220}{7} = \frac{7x}{7}$$

$$\Rightarrow x = \frac{220}{7}$$

Verification:

Substituting $x = \frac{220}{7}$ in RHS, we get

$$\text{LHS} = 14, \text{ and RHS} = \frac{7\left(\frac{220}{7}\right)}{10} - 8 = \frac{220}{10} - 8 = 22 - 8 = 14$$

LHS = RHS

Hence, verified.

Question:15

Solve each of the following equations and check your answers:

$$3(x + 2) = 15$$

Solution:

$$3(x + 2) = 15$$

Dividing both sides by 3, we get

$$\Rightarrow \frac{3(x + 2)}{3} = \frac{15}{3}$$

$$\Rightarrow (x + 2) = 5$$

Subtracting 2 from both sides, we get

$$\Rightarrow x + 2 - 2 = 5 - 2$$

$$\Rightarrow x = 3$$

Verification:

Substituting $x = 3$ in LHS, we get

$$\text{LHS} = 3(x + 2) = 3 \times 3 + 2 = 3 \times 5 = 15, \text{ and RHS} = 15$$

LHS = RHS

Hence, verified.

Question:16

Solve each of the following equations and check your answers:

$$\frac{x}{4} = \frac{7}{8}$$

Solution:

$$\frac{x}{4} = \frac{7}{8}$$

Multiplying both sides by 4, we get

$$\Rightarrow \frac{x}{4} \times 4 = \frac{7}{8} \times 4$$

$$\Rightarrow x = \frac{7}{2}$$

Verification:

Substituting $x = \frac{7}{2}$ in LHS, we get

$$\text{LHS} = \frac{7}{2 \times 4} = \frac{7}{8}, \text{ and RHS} = \frac{7}{8}$$

LHS = RHS

Hence, verified.

Question:17

Solve each of the following equations and check your answers:

$$\frac{1}{3} - 2x = 0$$

Solution:

$$\frac{1}{3} - 2x = 0$$

Subtracting $\frac{1}{3}$ from both sides, we get

$$\Rightarrow \frac{1}{3} - 2x - \frac{1}{3} = 0 - \frac{1}{3}$$

$$\Rightarrow -2x = -\frac{1}{3}$$

Multiplying both sides by -1 , we get

$$\Rightarrow -2x \times (-1) = -\frac{1}{3} \times (-1)$$

$$\Rightarrow 2x = \frac{1}{3}$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2x}{2} = \frac{1}{3 \times 2}$$

$$\Rightarrow x = \frac{1}{6}$$

Verification:

Substituting $x = \frac{1}{6}$ in LHS, we get

$$\text{LHS} = \frac{1}{3} - \left(2 \times \frac{1}{6}\right) = \frac{1}{3} - \frac{1}{3} = 0, \text{ and RHS} = 0$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:18

Solve each of the following equations and check your answers:

$$3(x + 6) = 24$$

Solution:

$$3(x + 6) = 24$$

Dividing both sides by 3, we get

$$\Rightarrow \frac{3(x + 6)}{3} = \frac{24}{3}$$

$$\Rightarrow (x + 6) = 8$$

Subtracting 6 from both sides, we get

$$\Rightarrow x + 6 - 6 = 8 - 6$$

$$\Rightarrow x = 2$$

Verification:

Substituting $x = 2$ in LHS, we get

$$\text{LHS} = 3(x + 6) = 3 \times 2 + 6 = 3 \times 8 = 24, \text{ and RHS} = 24$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:19

Solve each of the following equations and check your answers:

$$3(x + 2) - 2(x - 1) = 7$$

Solution:

$$3(x + 2) - 2(x - 1) = 7$$

On expanding the brackets, we get

$$\Rightarrow (3 \times x) + (3 \times 2) - (2 \times x) + (2 \times 1) = 7$$

$$\Rightarrow 3x + 6 - 2x + 2 = 7$$

$$\Rightarrow 3x - 2x + 6 + 2 = 7$$

$$\Rightarrow x + 8 = 7$$

Subtracting 8 from both sides, we get

$$\Rightarrow x + 8 - 8 = 7 - 8$$

$$\Rightarrow x = -1$$

Verification:

Substituting $x = -1$ in LHS, we get

$$\text{LHS} = 3(x + 2) - 2(x - 1), \text{ and RHS} = 7$$

$$\text{LHS} = 3(-1 + 2) - 2(-1 - 1) = (3 \times 1) - (2 \times -2) = 3 + 4 = 7, \text{ and RHS} = 7$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:20

Solve each of the following equations and check your answers:

$$8(2x - 5) - 6(3x - 7) = 1$$

Solution:

$$8(2x - 5) - 6(3x - 7) = 1$$

On expanding the brackets, we get

$$\Rightarrow (8 \times 2x) - (8 \times 5) - (6 \times 3x) + (-6) \times (-7) = 1$$

$$\Rightarrow 16x - 40 - 18x + 42 = 1$$

$$\Rightarrow 16x - 18x + 42 - 40 = 1$$

$$\Rightarrow -2x + 2 = 1$$

Subtracting 2 from both sides, we get

$$\Rightarrow -2x + 2 - 2 = 1 - 2$$

$$\Rightarrow -2x = -1$$

Multiplying both sides by -1 , we get

$$\Rightarrow -2x \times (-1) = -1 \times (-1)$$

$$\Rightarrow 2x = 1$$

Dividing both sides by 2, we get

$$\Rightarrow \frac{2x}{2} = \frac{1}{2}$$

$$\Rightarrow x = \frac{1}{2}$$

Verification:

Substituting $x = \frac{1}{2}$ in LHS, we get

$$= 8(2 \times \frac{1}{2} - 5) - 6(3 \times \frac{1}{2} - 7)$$

$$= 81 - 5 - 6(\frac{3}{2} - 7)$$

$$= 8 \times -4 - (6 \times \frac{3}{2}) + (6 \times 7)$$

$$= -32 - 9 + 42 = -41 + 42 = 1 = \text{RHS}$$

LHS = RHS

Hence, verified.

Question:21

Solve each of the following equations and check your answers:

$$6(1 - 4x) + 7(2 + 5x) = 53$$

Solution:

$$6(1 - 4x) + 7(2 + 5x) = 53$$

On expanding the brackets, we get

$$\Rightarrow (6 \times 1) - (6 \times 4x) + (7 \times 2) + (7 \times 5x) = 53$$

$$\Rightarrow 6 - 24x + 14 + 35x = 53$$

$$\Rightarrow 6 + 14 + 35x - 24x = 53$$

$$\Rightarrow 20 + 11x = 53$$

Subtracting 20 from both sides, we get

$$\Rightarrow 20 + 11x - 20 = 53 - 20$$

$$\Rightarrow 11x = 33$$

\Rightarrow Dividing both sides by 11, we get

$$\Rightarrow \frac{11x}{11} = \frac{33}{11}$$

$$\Rightarrow x = 3$$

Verification:

Substituting $x = 3$ in LHS, we get

$$= 6(1 - 4 \times 3) + 7(2 + 5 \times 3)$$

$$= 61 - 12 + 72 + 15$$

$$= 6 - 11 + 717$$

$$= -66 + 119 = 53 = \text{RHS}$$

LHS = RHS

Hence, verified.

Question:22

Solve each of the following equations and check your answers:

$$5(2 - 3x) - 17(2x - 5) = 16$$

Solution:

$$5(2 - 3x) - 17(2x - 5) = 16$$

On expanding the brackets, we get

$$\Rightarrow (5 \times 2) - (5 \times 3x) - (17 \times 2x) + (17 \times 5) = 16$$

$$\Rightarrow 10 - 15x - 34x + 85 = 16$$

$$\Rightarrow 10 + 85 - 34x - 15x = 16$$

$$\Rightarrow 95 - 49x = 16$$

Subtracting 95 from both sides, we get

$$\Rightarrow -49x + 95 - 95 = 16 - 95$$

$$\Rightarrow -49x = -79$$

Dividing both sides by -49, we get

$$\Rightarrow \frac{-49x}{-49} = \frac{-79}{-49}$$

$$\Rightarrow x = \frac{79}{49}$$

Verification:

Substituting $x = \frac{79}{49}$ in LHS, we get

$$= 5(2 - 3 \times \frac{79}{49}) - 17(2 \times \frac{79}{49} - 5)$$

$$= (5 \times 2) - (5 \times 3 \times \frac{79}{49}) - (17 \times 2 \times \frac{79}{49}) + (17 \times 5)$$

$$= 10 - \frac{1185}{49} - \frac{2686}{49} + 85$$

$$= \frac{490 - 1185 - 2686 + 4165}{49}$$

$$= \frac{784}{49}$$

$$= 16$$

$$= \text{RHS}$$

So, LHS = RHS

Hence, verified.

Question:23

Solve each of the following equations and check your answers:

$$\frac{x-3}{5} - 2 = -1$$

Solution:

$$\frac{x-3}{5} - 2 = -1$$

Adding 2 to both sides, we get

$$\Rightarrow \frac{x-3}{5} - 2 + 2 = -1 + 2$$

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

Multiplying both sides by 5, we get

$$\Rightarrow \left(\frac{x-3}{5} \right) \times 5 = 1 \times 5$$

$$\Rightarrow x - 3 = 5$$

Adding 3 to both sides, we get

$$\Rightarrow x - 3 + 3 = 5 + 3$$

$$\Rightarrow x = 8$$

Verification:

Substituting $x = 8$ in LHS, we get

$$= \frac{8-3}{5} - 2$$

$$= \frac{5}{5} - 2$$

$$= 1 - 2$$

$$= -1$$

$$= \text{RHS}$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:24

Solve each of the following equations and check your answers:

$$5(x - 2) + 3(x + 1) = 25$$

Solution:

$$5(x - 2) + 3(x + 1) = 25$$

On expanding the brackets, we get

$$\Rightarrow (5 \times x) - (5 \times 2) + (3 \times x) + (3 \times 1) = 25$$

$$\Rightarrow 5x - 10 + 3x + 3 = 25$$

$$\Rightarrow 5x + 3x - 10 + 3 = 25$$

$$\Rightarrow 8x - 7 = 25$$

Adding 7 to both sides, we get

$$\Rightarrow 8x - 7 + 7 = 25 + 7$$

$$\Rightarrow 8x = 32$$

Dividing both sides by 8, we get

$$\Rightarrow \frac{8x}{8} = \frac{32}{8}$$

$$\Rightarrow x = 4$$

Verification:

Substituting $x = 4$ in LHS, we get

$$= 5(4 - 2) + 3(4 + 1)$$

$$= 5(2) + 3(5)$$

$$= 10 + 15$$

$$= 25$$

= RHS

LHS = RHS

Hence, verified.

Question:25

Solve each of the following equations. Also, verify the result in each case.

$$6x + 5 = 2x + 17$$

Solution:

We have

$$\Rightarrow 6x + 5 = 2x + 17$$

Transposing $2x$ to LHS and 5 to RHS, we get

$$\Rightarrow 6x - 2x = 17 - 5$$

$$\Rightarrow 4x = 12$$

Dividing both sides by 4 , we get

$$\Rightarrow \frac{4x}{4} = \frac{12}{4}$$

$$\Rightarrow x = 3$$

Verification:

Substituting $x = 3$ in the given equation, we get

$$6 \times 3 + 5 = 2 \times 3 + 17$$

$$18 + 5 = 6 + 17$$

$$23 = 23$$

LHS = RHS

Hence, verified.

Question:26

Solve each of the following equations. Also, verify the result in each case.

$$2(5x - 3) - 3(2x - 1) = 9$$

Solution:

We have

$$\Rightarrow 2(5x - 3) - 3(2x - 1) = 9$$

Expanding the brackets, we get

$$\Rightarrow 2 \times 5x - 2 \times 3 - 3 \times 2x + 3 \times 1 = 9$$

$$\Rightarrow 10x - 6 - 6x + 3 = 9$$

$$\Rightarrow 10x - 6x - 6 + 3 = 9$$

$$\Rightarrow 4x - 3 = 9$$

Adding 3 to both sides, we get

$$\Rightarrow 4x - 3 + 3 = 9 + 3$$

$$\Rightarrow 4x = 12$$

Dividing both sides by 4, we get

$$\Rightarrow \frac{4x}{4} = \frac{12}{4}$$

\Rightarrow Thus, $x = 3$.

Verification:

Substituting $x = 3$ in LHS, we get

$$= 2(5 \times 3 - 3) - 3(2 \times 3 - 1)$$

$$= 2 \times 12 - 3 \times 5$$

$$= 24 - 15$$

$$= 9$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:27

Solve each of the following equations. Also, verify the result in each case.

$$\frac{x}{2} = \frac{x}{3} + 1$$

Solution:

$$\frac{x}{2} = \frac{x}{3} + 1$$

Transposing $\frac{x}{3}$ to LHS, we get

$$\Rightarrow \frac{x}{2} - \frac{x}{3} = 1 \Rightarrow \frac{3x-2x}{6} = 1$$

$$\Rightarrow \frac{x}{6} = 1$$

Multiplying both sides by 6, we get

$$\Rightarrow \frac{x}{6} \times 6 = 1 \times 6$$

$$\Rightarrow x = 6$$

Verification:

Substituting $x = 6$ in the given equation, we get

$$\frac{6}{2} = \frac{6}{3} + 1$$

$$3 = 2 + 1$$

$$3 = 3$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:28

Solve each of the following equations. Also, verify the result in each case.

$$\frac{x}{2} + \frac{3}{2} = \frac{2x}{5} - 1$$

Solution:

$$\frac{x}{2} + \frac{3}{2} = \frac{2x}{5} - 1$$

Transposing $\frac{2x}{5}$ to LHS and $\frac{3}{2}$ to RHS, we get

$$\Rightarrow \frac{x}{2} - \frac{2x}{5} = -1 - \frac{3}{2}$$

$$\Rightarrow \frac{5x-4x}{10} = \frac{-2-3}{2}$$

$$\Rightarrow \frac{x}{10} = \frac{-5}{2}$$

Multiplying both sides by 10, we get

$$\Rightarrow \frac{x}{10} \times 10 = \frac{-5}{2} \times 10$$

$$\Rightarrow x = -25$$

Verification:

Substituting $x = -25$ in the given equation, we get

$$\frac{-25}{2} + \frac{3}{2} = \frac{2 \times (-25)}{5} - 1$$

$$\frac{-22}{2} = -10 - 1$$

$$-11 = -11$$

LHS = RHS

Hence, verified.

Question:29

Solve each of the following equations. Also, verify the result in each case.

$$\frac{3}{4}(x-1) = x-3$$

Solution:

$$\frac{3}{4}(x-1) = x-3$$

On expanding the brackets on both sides, we get

$$\Rightarrow \frac{3}{4}x - \frac{3}{4} = x - 3$$

Transposing $\frac{3}{4}x$ to RHS and 3 to LHS, we get

$$\Rightarrow$$

$$\Rightarrow$$

$$\Rightarrow$$

Multiplying both sides by 4, we get

$$\Rightarrow x = 9$$

Verification:

Substituting $x = 9$ on both sides, we get

$$6 = 6$$

LHS = RHS

Hence, verified.

Question:30

Solve each of the following equations. Also, verify the result in each case.

$$3(x - 3) = 5(2x + 1)$$

Solution:

$$6. 3(x - 3) = 5(2x + 1)$$

On expanding the brackets on both sides, we get

=>

$$\Rightarrow 3x - 9 = 10x + 5$$

Transposing $10x$ to LHS and 9 to RHS, we get

$$\Rightarrow 3x - 10x = 9 + 5$$

$$\Rightarrow -7x = 14$$

Dividing both sides by -7 , we get

=>

$$\Rightarrow x = -2$$

Verification:

Substituting $x = -2$ on both sides, we get

$$15 = 15$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:31

Solve each of the following equations. Also, verify the result in each case.

$$3x - 2(2x - 5) = 2(x + 3) - 8$$

Solution:

$$3x - 2(2x - 5) = 2(x + 3) - 8$$

On expanding the brackets on both sides, we get

=>

=>

=>

Transposing x to RHS and 2 to LHS, we get

$$\Rightarrow 10 + 2 = 2x + x$$

$$\Rightarrow 3x = 12$$

Dividing both sides by 3 , we get

=>

$$\Rightarrow x = 4$$

Verification:

Substituting $x = 4$ on both sides, we get

$$122 (8\ 5) = 148$$

$$12\ 6 = 6$$

$$6 = 6$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:32

Solve each of the following equations. Also, verify the result in each case.

Solution:

Transposing to LHS and to RHS, we get

$$\Rightarrow$$

$$\Rightarrow$$

$$\Rightarrow$$

Multiplying both sides by 4, we get

$$\Rightarrow$$

$$\Rightarrow 2x = 14$$

Dividing both sides by 2, we get

$$\Rightarrow$$

$$\Rightarrow x = 7$$

Verification:

Substituting $x = 7$ on both sides, we get

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:33

Solve each of the following equations. Also, verify the result in each case.

Solution:

$$\Rightarrow$$

$$\Rightarrow$$

$$\Rightarrow$$

Multiplying both sides by 18, we get

=>

$$\Rightarrow 15x + 1 = 6$$

Transposing 1 to RHS, we get

$$\Rightarrow 15x = 61$$

$$\Rightarrow 15x = 5$$

Dividing both sides by 15, we get

=>

$$\Rightarrow x =$$

Verification:

Substituting $x =$ on both sides, we get

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:34

Solve each of the following equations. Also, verify the result in each case.

Solution:

=>

=>

=>

=>

Transposing $m/3$ to LHS and $1/2$ to RHS, we get

=>

=>

Multiplying both sides by 6, we get

=>

$$\Rightarrow 5m = 7$$

Dividing both sides by 5, we get

=>

$$\Rightarrow m =$$

Verification:

Substituting $m =$ on both sides, we get

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:35

Solve each of the following equations. Also, verify the result in each case.

Solution:

Multiplying both sides by 3, we get

$$\Rightarrow 3x + 1 = 3$$

Subtracting 1 from both sides, we get

$$\Rightarrow 3x + 1 - 1 = 3 - 1$$

$$\Rightarrow 3x = 2$$

Dividing both sides by 3, we get

$$\Rightarrow$$

$$\Rightarrow x =$$

Verification:

Substituting $x =$ in LHS, we get

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:36

Solve each of the following equations. Also, verify the result in each case.

Solution:

Transposing $0.28x$ to LHS and $4/5$ to RHS, we get

$$\Rightarrow 0.6x - 0.28x = 1.16$$

$$\Rightarrow 0.32x = 1.16 - 0.8$$

$$\Rightarrow 0.32x = 0.36$$

Dividing both sides by 0.32, we get

$$\Rightarrow$$

$$\Rightarrow x =$$

Verification:

Substituting $x =$ on both sides, we get

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:37

Solve each of the following question. Also, verify the result in each case.

Solution:

Transposing $x/4$ to LHS, we get

Multiplying both sides by 12, we get

\Rightarrow

$$\Rightarrow 7x = 84$$

Dividing both sides by 7, we get

\Rightarrow

$$\Rightarrow x = 12$$

Verification:

Substituting $x = 12$ on both sides, we get

$$6 + 4 = 3 + 7$$

$$10 = 10$$

$$\text{LHS} = \text{RHS}$$

Hence, verified.

Question:38

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

Solution:

Let the required number be 'x'. Then, 5 subtracted from 3 times $x = 3x - 5$.

$$\Rightarrow 3x - 5 = 16$$

Adding 5 to both sides, we get

$$\Rightarrow 3x - 5 + 5 = 16 + 5$$

$$\Rightarrow 3x = 21$$

Dividing both sides by 3, we get

\Rightarrow

$$\Rightarrow x = 7$$

Thus, the required number is 7.

Question:39

Find the number which when multiplied by 7 is increased by 78.

Solution:

Let the required number be 'x'. Thus, when multiplied by 7, it gives 7x, and x increases by 78.

$$\Rightarrow 7x = x + 78$$

Transposing x to LHS, we get

$$\Rightarrow 7x - x = 78$$

$$\Rightarrow 6x = 78$$

Dividing both sides by 6, we get

$$\Rightarrow$$

$$\Rightarrow x = 13$$

Thus, the required number is 13.

Question:40

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

Solution:

Let the first number be 'x'. Hence, the second number = $x + 1$ and the third number = $x + 2$.

$$\Rightarrow \text{Sum of first and second numbers} = x + x + 1.$$

ATQ:

$$\Rightarrow x + x + 1 = 15 + x + 2$$

$$\Rightarrow 2x + 1 = 17 + x$$

Transposing x to LHS and 1 to RHS, we get

$$\Rightarrow 2x - x = 17 - 1$$

$$\Rightarrow x = 16$$

So, first number = $x = 16$

$$\text{Second number} = x + 1 = 16 + 1 = 17$$

$$\text{Third number} = x + 2 = 16 + 2 = 18$$

Thus, the required consecutive natural numbers are 16, 17 and 18.

Question:41

The difference between two numbers is 7. Six times the smaller plus the larger is 77. Find the numbers.

Solution:

Let the smaller number be 'x'. So, the larger number = $x + 7$.

ATQ:

$$\Rightarrow 6x + x + 7 = 77$$

$$\Rightarrow 6x + x + 7 = 77$$

$$\Rightarrow 7x + 7 = 77$$

Subtracting 7 from both sides, we get

$$\Rightarrow 7x + 7 - 7 = 77 - 7$$

$$\Rightarrow 7x = 70$$

Dividing both sides by 7, we get

\Rightarrow

$$x = 10$$

Thus, the smaller number = $x = 10$, and the larger number = $x + 7 = 10 + 7 = 17$.

The two required numbers are 10 and 17.

Question:42

A man says, "I am thinking of a number. When I divide it by 3 and then add 5, my answer is twice the number I thought of". Find the number.

Solution:

Let the number thought of by the man be 'x'.

So, ATQ:

\Rightarrow

Transposing $x/3$ to RHS, we get

$$\Rightarrow 5 =$$

$$\Rightarrow 5 =$$

$$\Rightarrow 5 =$$

Multiplying both sides by 3, we get

\Rightarrow

$$\Rightarrow 15 = 5x$$

Dividing both sides by 5, we get

\Rightarrow

$$\Rightarrow x = 3$$

Thus, the number thought of by the man is 3.

Question:43

If a number is tripled and the result is increased by 5, we get 50. Find the number.

Solution:

Let the required number be 'x'.

So, ATQ:

$$\Rightarrow 3x + 5 = 50$$

Subtracting 5 from both sides, we get

$$\Rightarrow 3x + 5 - 5 = 50 - 5$$

$$\Rightarrow 3x = 45$$

Dividing both sides by 3, we get

\Rightarrow

$$\Rightarrow x = 15$$

Thus, the required number is 15.

Question:44

Shikha is 3 years younger to her brother Ravish. If the sum of their ages is 37 years, what are their present ages?

Solution:

Let the present age of Shikha = 'x' years.

So, the present age of Shikha's brother Ravish = $x + 3$ years.

So, sum of their ages = $x + x + 3$

$$\Rightarrow x + x + 3 = 37$$

$$\Rightarrow 2x + 3 = 37$$

Subtracting 3 from both sides, we get

$$\Rightarrow 2x + 3 - 3 = 37 - 3$$

$$\Rightarrow 2x = 34$$

Dividing both sides by 2, we get

\Rightarrow

$$\Rightarrow x = 17$$

So, the present age of Shikha = 17 years, and the present age of Ravish = $x + 3 = 17 + 3 = 20$ years.

Question:45

Mrs. Jain is 27 years older than her daughter Nilu. After 8 years she will be twice as old as Nilu. Find their present ages.

Solution:

Let the present age of Nilu = 'x' years.

Therefore, the present age of Nilu's mother, Mrs. Jain = $x + 27$ years.

So, after 8 years,

Nilu's age = $x + 8$, and Mrs. Jain's age = $x + 27 + 8 = x + 35$ years

$$\Rightarrow x + 35 = 2(x + 8)$$

Expanding the brackets, we get

$$\Rightarrow x + 35 = 2x + 16$$

Transposing x to RHS and 16 to LHS, we get

$$\Rightarrow 35 - 16 = 2x - x$$

$$\Rightarrow x = 19$$

So, the present age of Nilu = $x = 19$ years, and the present age of Nilu's mother = $x + 27 = 19 + 27 = 46$ years.

Question:46

A man is 4 times as old as his son. After 16 years, he will be only twice as old as his son. Find the their present ages.

Solution:

Let the present age of the son = ' x ' years.

Therefore, the present age of his father = ' $4x$ ' years.

So, after 16 years,

Son's age = $x + 16$ and father's age = $4x + 16$ years

ATQ:

$$\Rightarrow 4x + 16 = 2x + 16$$

$$\Rightarrow 4x + 16 = 2x + 32$$

Transposing $2x$ to LHS and 16 to RHS, we get

$$\Rightarrow 4x - 2x = 32 - 16$$

$$\Rightarrow 2x = 16$$

Dividing both sides by 2, we get

\Rightarrow

$$\Rightarrow x = 8$$

So, the present age of the son = $x = 8$ years, and the present age of the father = $4x = 4 \times 8 = 32$ years.

Question:47

The difference in age between a girl and her younger sister is 4 years. The younger sister in turn is 4 years older than her brother. The sum of the ages of the younger sister and her brother is 16. How old are the three children?

Solution:

Let the age of the girl = ' x ' years.

So, the age of her younger sister = $(x - 4)$ years.

Thus, the age of the brother = $(x - 4 - 4)$ years = $(x - 8)$ years.

ATQ:

$$\Rightarrow (x - 4) + (x - 8) = 16$$

$$\Rightarrow x + x - 4 - 8 = 16$$

$$\Rightarrow 2x - 12 = 16$$

Adding 12 to both sides, we get

$$\Rightarrow 2x - 12 + 12 = 16 + 12$$

$$\Rightarrow 2x = 28$$

Dividing both sides by 2, we get

\Rightarrow

$$\Rightarrow x = 14$$

Thus, the age of the girl = $x = 14$ years, the age of the younger sister = $x - 4 = 14 - 4 = 10$ years, and the age of the younger brother = $x - 8 = 14 - 8 = 6$ years.

Question:48

One day, during their vacation at a beach resort, Shella found twice as many sea shells as Anita and Anita found 5 shells more than sandy. Together sandy and Shella found 16 sea shells. How many did each of them find?

Solution:

Let the number of sea shells found by Sandy = 'x'.

So, the number of sea shells found by Anita = $x + 5$.

The number of sea shells found by Shella = $2x + 5$.

According to the question,

$$\Rightarrow x + 2x + 5 = 16$$

$$\Rightarrow x + 2x + 10 = 16$$

$$\Rightarrow 3x + 10 = 16$$

Subtracting 10 from both sides, we get

$$\Rightarrow 3x + 10 - 10 = 16 - 10$$

$$\Rightarrow 3x = 6$$

Dividing both sides by 3, we get

\Rightarrow

$$\Rightarrow x = 2$$

Thus, the number of sea shells found by Sandy = $x = 2$, the number of sea shells found by Anita = $x + 5 = 2 + 5 = 7$,

and the number of sea shells found by Shella = $2x + 5 = 2 \times 2 + 5 = 4 + 5 = 9$.

Question:49

Andy has twice as many marbles as Pandey, and Sandy has half as many as Andy and Pandey put together. Andy has 110 marbles which is 15 marbles less than Sandy. How many does each of them have?

Solution:

Let the number of marbles with Pandey = 'x'.

So, the number of marbles with Andy = '2x'.

Thus, the number of marbles with Sandy = $x + 2x = 3x$.

According to the question,

$$3x - 15 = 110$$

Adding 115 to both sides, we get

$$115 + 115 = 110 + 115$$

$$= 225$$

Multiplying both sides by 2, we get

$$3x = 450$$

Dividing both sides by 3, we get

$$x = 150$$

So, Pandey has 150 marbles, Andy has $2x = 2 \times 150 = 300$ marbles, and Sandy has $x = 150$ marbles.

Question:50

A bag contains 25 paise and 50 paise coins whose total value is Rs 30. If the number of 25 paise coins is four times that of 50 paise coins, find the number of each type of coins.

Solution:

Let the number of 50 paise coins = 'x'.

So, the money value contribution of 50 paise coins = $0.5x$.

The number of 25 paise coins = '4x'.

The money value contribution of 25 paise coins = $0.25 \times 4x = x$.

According to the question,

$$\Rightarrow 0.5x + x = 30$$

$$\Rightarrow 1.5x = 30$$

Dividing both sides by 1.5, we get

$$\Rightarrow$$

$$\Rightarrow x = 20$$

Thus, the number of 50 paise coins = 'x' = 20, and the number of 25 paise coins = '4x' = $4 \times 20 = 80$.

Question:51

The length of a rectangular field is twice its breadth. If the perimeter of the field is 228 metres, find the dimensions of the field.

Solution:

Let the breadth of the rectangle = 'x' metres.

According to the question,

Length of the rectangle = '2x' metres

Perimeter of a rectangle = $2 \times \text{length} + \text{breadth}$

$$\text{So, } 2 \times 2x + x = 228$$

$$\Rightarrow 4x + x = 228$$

$$\Rightarrow 5x = 228$$

Dividing both sides by 6, we get

$$\Rightarrow$$

$$\Rightarrow x = 38$$

So, the breadth of the rectangle = $x = 38$ metres, and the length of the rectangle = $2x = 2 \times 38 = 76$ metres.

Question:52

There are only 25 paise coins in a purse. The value of money in the purse is Rs 17.50. Find the number of coins in the purse.

Solution:

Let the number of 25-paise coins in the purse be 'x'.

So, the value of money in the purse = $0.25x$.

But $0.25x = 17.5$.

Dividing both sides by 0.25, we get

$$\Rightarrow$$

$$\Rightarrow x = 70$$

Thus, the number of 25-paise coins in the purse = 70.

Question:53

In a hostel mess, 50 kg rice are consumed everyday. If each student gets 400 gm of rice per day, find the number of students who take meals in the hostel mess.

Solution:

Let the number of students in the hostel be 'x'.

Quantity of rice consumed by each student = 400 gm.

So, daily rice consumption in the hostel mess = $400x$.

But, daily rice consumption = 50 kg = $50 \times 1000 = 50000$ gm since 1 kg = 1000 gm.

According to the question,

$$400x = 50000$$

Dividing both sides by 400, we get

$$\Rightarrow$$

$$\Rightarrow x = 125$$

Thus, 125 students have their meals in the hostel mess.

Question:54

Mark the correct alternative in the following question:

The zero of $3x + 2$ is

Solution:

So, the zero of $3x + 2$ is .

Note: A zero is that number, when put in place of the variable, makes the expression equal to zero.

Hence, the correct alternative is option c.

Question:55

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option b.

Question:56

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option c.

Question:57

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option a.

Question:58

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option c.

Question:59

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option d.

Question:60

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option d.

Question:61

Mark the correct alternative in the following question:

Solution:

Hence, the correct alternative is option a.

Question:62

Mark the correct alternative in the following question:

The sum of two consecutive whole numbers is 43. The smaller number is

a 21

b 22

c 23

d 24

Solution:

So, the smaller number is 21.

Hence, the correct alternative is option a.

Question:63

Mark the correct alternative in the following question:

The sum of two consecutive odd numbers is 36. The larger number is

a 17 b 15 c 19 d 21

Solution:

So, the larger number is 19.

Hence, the correct alternative is option c.

Question:64

Mark the correct alternative in the following question:

Twice a number when increased by 7 gives 25. The number is

a 7 b 9 c 10 d 8

Solution:

So, the number is 9.

Hence, the correct alternative is option b.

Question:65

Mark the correct alternative in the following question:

The length of a rectangle is three times its width and its perimeter 56 m. The length is

a 7 m

b 14 m

c 21 m

d 28 m

Solution:

Hence, the correct alternative is option c.

Question:66

Mark the correct alternative in the following question:

Two-third of a number is greater than one-third of the number by 5. The number is

a 10

b 5

c 15

d 12

Solution:

So, the number is 15.

Hence, the correct alternative is option c.

Question:67

Mark the correct alternative in the following question:

If the sum of a number and its two-fifth is 70. The number is

a 70

b 50

c 60

d 90

Solution:

So, the number is 50.

Hence, the correct alternative is option b.

Question:68

Mark the correct alternative in the following question:

of a number is less than the original number by 20. The number is

a 30

b 40

c 50

d 60

Solution:

So, the number is 60.

Hence, the correct alternative is option d.

Question:69

Mark the correct alternative in the following question:

A number is as much greater than 31 as it is less than 81. The number is

a 46

b 56

c 66

d 76

Solution:

So, the number is 56.

Hence, the correct alternative is option b.

Question:70

Mark the correct alternative in the following question:

Two complementary angles differ by 20° . The smaller angle is

a 55°

b 25°

c 65°

d 35°

Solution:

So, the smaller angle is 35° .

Hence, the correct alternative is option d.

Question:71

Mark the correct alternative in the following question:

Two supplementary angles differ by 40° . The measure of the larger angle is

a 70°

b 80°

c 110°

d 100°

Solution:

So, the measure of the larger angle is 110° .

Hence, the correct alternative is option c.

Question:72

Mark the correct alternative in the following question:

The sum of three consecutive odd numbers is 81. The middle number is

a 25

b 27

c 31

d 29

Solution:

So, the middle number is 27.

Hence, the correct alternative is option b.

Question:73

If $2(2n + 5) = 3(3n - 10)$, then $n =$

a 5

b 3

c 7

d 8

Solution:

Hence, the correct alternative is option d.

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