RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4: The academic team of Physics Wallah has produced a comprehensive solution for Chapter 3 of the textbook RS Aggarwal Class 10 Linear Equations in Two Variables. The RS Aggarwal class 10 solution for Chapter 3 Linear Equations in Two Variables Exercise-3D is uploaded for reference only; do not copy the solutions.

Before going through the solution of Chapter 3 Linear Equations in Two Variables Exercise 3D, one must have a clear understanding of Chapter 3 Linear Equations in Two Variables. Read the theory of Chapter 3 Linear Equations in Two Variables and then try to solve all numerical of exercise 3D. It is strongly advised that students in class 10 utilize the NCERT textbook to solve numerical problems and refer to the NCERT solutions for maths in class 10.

RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4 Overview

RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4 focuses on linear equations in two variables. This chapter helps students understand and solve equations where two variables are related linearly. The solutions guide students through methods like substitution, elimination, and cross-multiplication to find solutions systematically.

By practicing these exercises, students not only learn to solve equations but also grasp how to interpret and apply algebraic concepts in real-world contexts. This helps in building a strong foundation in algebra, essential for higher-level mathematics and practical problem-solving. Overall, RS Aggarwal Solutions in this chapter provides a structured approach to mastering linear equations in two variables, enabling students to enhance their mathematical skills effectively.

RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4

Below we have provided RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4 for the ease of the students –

Question 1.

Solution:

Let the cost of each chair and each table are x and y respectively.

According to question,

5 × (cost of each chair) + 4 × (cost of each table) = 5600, and

4 × (cost of each chair) + 3 × (cost of each table) = 4340

∴ $5x + 4y = 5600$.....(1)

$4x + 3y = 4340$.....(2)

from equation (1), we get -

$x = (5600 - 4y)/5$.....(3)

substituting the value of x in equation (2), we get -

$4 \left(\dfrac{5600 - 4y}{5} \right) + 3y = 4340$

$\Rightarrow 4480 - \dfrac{16}{5}y + 3y = 4340$

$\Rightarrow 1/5 \; y = 140$

∴ $y = 700$

substituting the value of y in equation (3), we get -

$x = 560$

Question 2.

Solution:

Let the cost of each spoon and each fork are x and y respectively.

According to question,

$23 \times$ (cost of each spoon) $+ 17 \times$ (cost of each fork) $= 1770$, and

$17 \times$ (cost of each spoon) $+ 23 \times$ (cost of each fork) $= 1830$

$\therefore 23x + 17y = 1770.....(1)$

$17x + 23y = 1830.....(2)$

from equation (1), we get -

$x = (1770 - 17y)/23.....(3)$

substituting the value of x in equation (2), we get -

$17 \left(\dfrac{1770 - 17y}{23} \right) + 23y = 1830$

$\Rightarrow \dfrac{30090}{23} - \dfrac{289}{23}y + 23y = 1830$

$\Rightarrow \dfrac{30090}{23} + \dfrac{240}{23}y = 1830$

$\Rightarrow 30090 + 240y = 42090$

$\Rightarrow 240y = 12000$

∴ y = 50

substituting the value of y in equation (3), we get -

x = 40

Thus the cost of each spoon is Rs. 40 and that of a fork is Rs. 50.

Question 3.

Solution:

Let the no. of 25 - paisa coins be x.

∴ the no of 50 - paisa coins = 50 - x

[∵ the total no. of coins = 50]

According to question -

total money = Rs. 19.50 = 1950 paisa

∴ 25x + 50(50 - x) = 1950

⇒ 2500 - 25x = 1950

⇒ 25x = 550

∴ x = 22

Thus, the no of 25 - paisa coins = x = 22 and,

the no of 50 - paisa coins = 50 - x = 50 - 22 = 28.

Question 4.

Solution:

Let the two numbers be x and y.

According to question -

$x + y = 137$.....(1)

$x - y = 43$.....(2)

Adding equations (1) and (2) , we get -

$2x = 180$

$\therefore x = 90$

substituting the value of x in equation (2), we get -

$y = 90 - 43 = 47$

Thus, the numbers are 90 and 47.

Question 5.

Solution:

Let the two numbers be x and y.

According to question -

$2x + 3y = 92$.....(1)

$4x - 7y = 2$.....(2)

From equation (1), we get -

$x = (92 - 3y)/2$.....(3)

Substituting the value of x in equation (2), we get -

$$4\left(\frac{92-3y}{2}\right) - 7y = 2$$

$\Rightarrow 184 - 6y - 7y = 2$

$\Rightarrow 13y = 182$

$\therefore y = 14$

substituting the value of y in equation (3), we get -

x = 25

Thus, the numbers are 25 and 14.

Question 6.

Solution:

Let the two numbers be x and y.

According to question -

$3x + y = 142.....(1)$

$4x - y = 138.....(2)$

Adding equations (1) and (2) , we get -

$7x = 280$

$\therefore x = 40$

substituting the value of x in equation (2), we get -

$y = 142 - 3x = 142 - 120 = 22$

Thus, the numbers are 40 and 22.

Question 7.

Solution:

Let the greater number be x and the smaller number be y.

According to question -

2x - 45 = y

$\Rightarrow$ 2x - y = 45.....(1)

and, 2y - 21 = x

$\Rightarrow$ x - 2y = - 21.....(2)

From equation (1), we get -

x = (y + 45)/2.....(3)

Substituting the value of x in equation (2), we get -

$$\left(\frac{y + 45}{2}\right) - 2y = -21$$

$$\Rightarrow \frac{y + 45 - 4y}{2} = -21$$

$\Rightarrow$ 45 - 3y = - 42

$\Rightarrow$ 3y = 87

$\therefore$ y = 29

substituting the value of y in equation (3), we get -

x = 37

Thus, the numbers are 37 and 29.

Question 8.

Solution:

Let the Larger number be x and the smaller number be y.

We know that -

Dividend = Quotient × Divisor + Remainder

According to question -

$3x = 4y + 8$

$\Rightarrow 3x - 4y = 8.....(1)$

and, $5y = 3x + 5$

$\Rightarrow -3x + 5y = 5.....(2)$

From equation (1), we get -

$x = (4y + 8)/3.....(3)$

Substituting the value of x in equation (2), we get -

$$-3\left(\frac{4y + 8}{3}\right) + 5y = 5$$

$\Rightarrow \dfrac{-12y - 24 + 15y}{3} = 5$

$\Rightarrow \dfrac{3y - 24}{3} = 5$

$\Rightarrow y - 8 = 5$

$\therefore y = 13$

substituting the value of y in equation (3), we get -

x = 20

Thus, the numbers are 20 and 13.

Question 9.

Solution:

Let the two numbers be x and y.

According to question -

$\dfrac{x + 2}{y + 2} = \dfrac{1}{2}$

On Cross multiplying, we get -

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

$\Rightarrow 2x - y = -2.....(1)$

and,

$\dfrac{x-4}{y-4} = \dfrac{5}{11}$

$\Rightarrow 11x - 44 = 5y - 20$

$\Rightarrow 11x - 5y = 24$

From equation (1), we get -

$x = (y - 2)/2$

Substituting the value of x in equation (2), we get -

$11\left(\dfrac{y-2}{2}\right) - 5y = 24$

$\Rightarrow y - 22 = 48$

$\therefore y = 70$

substituting the value of y in equation (3), we get -

$x = 34$

Thus, the numbers are 34 and 70.

Question 10.

Solution:

Let the two numbers be x and y.

According to question -

$x - y = 14$.....(1)

$x^2 - y^2 = 448$.....(2)

From equation (1), we get -

$x = y + 14$.....(3)

Substitute the value of x in equation (2), we get -

$(y + 14)^2 - y^2 = 448$

$\Rightarrow 28y + 196 = 448$

$\Rightarrow 28y = 252$

$\therefore y = 9$

Substitute the value of y in equation (3), we get -

$x = 23$

Thus, the numbers are 23 and 9.

Question 11.

Solution:

Let the two - digit number be xy (i.e. $10x + y$).

After interchanging the digits of the number xy, the new number becomes yx (i.e. $10y + x$).

According to question -

$x + y = 12$.....(1)

$(10y + x) - (10x + y) = 18$

$\Rightarrow -9x + 9y = 18$

$\Rightarrow -x + y = 2$.....(2)

Adding equations (1) and (2), we get -

y = 7

Substitute the value of y in equation (1), we get -

x = 5

Thus, the required number is 57.

Question 12.

Solution:

Let the two - digit number be xy (i.e. 10x + y).

After reversing the digits of the number xy, the new number becomes yx (i.e. 10y + x).

According to question -

$(10x + y) = 7(x + y)$

$\Rightarrow 3x = 6y$

$\Rightarrow x = 2y.....(1)$

and,

$(10x + y) - 27 = (10y + x)$

$\Rightarrow 9x - 9y = 27$

$\Rightarrow x - y = 3.....(2)$

Substituting equation (1) into (2), we get -

y = 3

Substitute the value of y in equation (1), we get -

x = 6

Thus, the required number is 63.

Question 13.

Solution:

Let the two - digit number be xy (i.e. $10x + y$).

After interchanging the digits of the number xy, the new number becomes yx (i.e. $10y + x$).

According to question -

$x + y = 15$.....(1)

$(10y + x) - (10x + y) = 9$

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

$\Rightarrow -x + y = 1$.....(2)

Adding equations (1) and (2), we get -

$y = 8$

Substitute the value of y in equation (1), we get -

$x = 7$

Thus, the required number is 78.

Benefits of RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4

RS Aggarwal Solutions for Class 10 Maths Chapter 3 Exercise 3.4 on linear equations offer several benefits for students studying mathematics:

Structured Approach: The solutions provide a structured approach to solving linear equations, which helps students understand the step-by-step method of solving such problems.

Clarity in Concepts: By following the solutions, students can grasp the underlying concepts of linear equations more clearly. This includes understanding how to isolate variables, perform operations on both sides of the equation, and verify solutions.

Practice Questions: The exercise contains a variety of practice questions that cover different types of linear equations. This allows students to apply the concepts they've learned to solve different problems and develop proficiency.

Preparation for Exams: RS Aggarwal Solutions are designed to align with the CBSE curriculum and exam patterns. Solving these exercises helps students prepare effectively for their exams by familiarizing themselves with the types of questions they may encounter.

Self-assessment: After solving the exercises, students can use the solutions to check their work and identify any mistakes. This self-assessment helps in learning from errors and improving problem-solving skills.

Enhanced Problem-solving Skills: By practicing with RS Aggarwal Solutions, students develop critical thinking and problem-solving skills essential for tackling mathematical problems beyond the textbook.

Accessibility: The solutions are readily available in the RS Aggarwal textbook or through supplementary materials, making them easily accessible for students to practice independently.