RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4: The Physics Wallah academic team has provided a comprehensive answer for Chapter 3: Squares and Square Roots in the RS Aggarwal class 8 textbook. Read the theory of chapter-3 Squares and Square Roots before attempting to solve all of the numerical problems in exercise-3D.

One must have a thorough understanding of chapter-3 Squares and Square Roots before proceeding with the solution of Exercise-3D. For class 8 maths students, the NCERT textbook is a highly recommended resource for solving numerical problems and referencing NCERT solutions.

RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4 Squares and Square Roots Overview

Chapter 3 of RS Aggarwal's Class 8 Maths textbook focuses on "Squares and Square Roots." Exercise 3.4 is an essential part of this chapter, offering a series of problems designed to enhance students' understanding and proficiency in dealing with squares and square roots.

The exercise includes a variety of questions that require students to find the squares of numbers, determine the square roots of perfect squares, and solve problems involving the properties of squares and square roots. This section emphasizes conceptual clarity and practical application.

Students are often tasked with solving equations that involve square roots, simplifying expressions with squares and square roots, and applying these concepts to solve real-world problems. The problems range from straightforward calculations to more complex word problems, encouraging students to develop a deeper understanding of the subject.

RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4

Below we have provided RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4 Squares and Square Roots –

Find the square root of each of the following numbers by using the method of prime fraction:

(1) 225

Solution: By prime factorization,

225 = 3 × 3 × 5 × 5

∴ √225 = (3 × 5) = 15.

(2) 441 = 3 × 3 × 7 × 7

∴ √441 = (3 × 7) = 21.

(3) 729 = 3 × 3 × 3 × 3 × 3 × 3

∴ √729 = (3 × 3 × 3) = 27.

(4) 1296 = 2 × 2 × 2 × 2 × 3 × 3 × 3 × 3

∴ √1296 = (2 × 2 × 3 × 3) = 36.

(5) 2025 = 3 × 3 × 3 × 3 × 5 × 5

∴ √2025 = (3 × 3 × 3 × 5) = 45.

(6) 4096 = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2

∴ √4096 = (2 × 2 × 2 × 2 × 2 × 2) = 64.

(7) 7056 = 2 × 2 × 2 × 2 × 3 × 3 × 7 × 7

∴ √7056 = (2 × 2 × 3 × 7) = 84.

(8) 8100 = 2 × 2 × 3 × 3 × 3 × 3 × 5 × 5

∴ √8100 = (2 × 3 × 3 × 5) = 90.

(9) 9216 = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3

∴ √9216 = 2 × 2 × 2 × 2 × 2 × 3 = 96.

(10) 11025 = 3 × 3 × 5 × 5 × 7 × 7

∴ √11025 = (3 × 5 × 7) = 105.

(11) 15876 = 2 × 2 × 3 × 3 × 3 × 3 × 7 × 7

∴ √15876 = (2 × 3 × 3 × 7) = 126.

(12) 17424 = 2 × 2 × 2 × 2 × 3 × 3 × 11 ×11

∴ √17424 = (2 × 2 × 3 × 11) = 132.

(13) Find the smallest number by which 252 must be multiplied to get a perfect square. Also, find the square root the perfect square so obtained.

Solution: By prime factorization, we get

$252 = 2 \times 2 \times 3 \times 3 \times 7$

So, the given number should be multiplied by 7to make the product a perfect square.

New number = $252 \times 7 = 1764$

$\therefore 1764 = 2 \times 2 \times 3 \times 3 \times 7 \times 7$

$\sqrt{1764} = 2 \times 3 \times 7 = 42$

(14) Find the smallest number by which 2925 must be divided to obtain a perfect square. Also find the square root of the perfect square so obtained.

Solution: By prime factorization, we get

$2925 = 3 \times 3 \times 5 \times 5 \times 13$

So, the given number should be divided by 13 to make the product a perfect square.

New number = $2925 \div 13 = 225$

$\therefore 225 = 3 \times 3 \times 5 \times 5$

$\sqrt{225} = 3 \times 5 = 15$

(15) 1225 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

Solution: Let the number of row be x.

$\therefore x^2 = 1225$

or, $x = \sqrt{1225}$

or, $x = 5 \times 7 = 35$

Hence, the number of the rows is 35.

(16) The students of a class arranged a picnic. Each student contributed is Rs 1156, find the strength of the class.

Solution: Let the number of students be x.

$\therefore x^2 = 1156$

or, $x = \sqrt{1156}$

or, $x = 2 \times 17 = 34$

(17) Find the least square number which is exactly divisible by each of the numbers 6, 9, 15 and 20.

Solution: The least number divisible by each one of 6, 9, 15 and 20 is their LCM.

Now, LCM of 6, 9, 15 and 20 = $(2 \times 3 \times 5 \times 3 \times 2) = 180$.

By prime factorization, we get

$180 = 2 \times 2 \times 3 \times 3 \times 5$

To make it perfect square it must be multiplied by 5.

Hence, required number = $(180 \times 5) = 900$.

(18) Find the least square number which is exactly divisible by each of the numbers 8, 12, 15 and 20.

Solution: The least number divisible by each one of 8, 12, 15 and 20 is their LCM.

Now, LCM of 8, 12, 15, 20 = $(2 \times 2 \times 3 \times 5 \times 2) = 120$.

By prime factorization, we get

$120 = 2 \times 2 \times 2 \times 3 \times 5$

To make it a perfect square it must be multiplied by $(2 \times 3 \times 5)$, i.e., 30.

Hence, required number = $(120 \times 30) = 3600$.

Benefits of RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4

The RS Aggarwal Solutions for Class 8 Maths Chapter 3 Exercise 3.4 on Squares and Square Roots offers several benefits to students:

Enhanced Understanding: The solutions provide detailed, step-by-step explanations for each problem, helping students understand the underlying concepts of squares and square roots thoroughly.

Practice and Reinforcement: With a variety of problems, students get ample practice, which reinforces their learning and helps them retain the concepts better.

Problem-Solving Skills: The exercise includes different types of questions, from basic calculations to complex word problems, which enhance students' problem-solving skills and analytical thinking.

Error Identification: By comparing their answers with the solutions, students can identify and correct their mistakes, leading to improved accuracy in their work.

Exam Preparation: The solutions align with the curriculum and are designed to prepare students for exams by covering all possible question types that might appear in tests and exams.

Confidence Building: Understanding and solving the problems correctly boosts students' confidence in their mathematical abilities, encouraging them to tackle more challenging problems.