

## Square Root Worksheets Answer Key PDF

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### Part 1: Building a Foundation

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**What is the square root of 64?**

undefined. A) 6

**undefined. C) 8 ✓**

undefined. D) 9

undefined. C) 7

The square root of 64 is 8.

**Which of the following numbers are perfect squares?**

**undefined. A) 16 ✓**

**undefined. C) 25 ✓**

undefined. D) 30

undefined. C) 20

The perfect squares among the options are 16 and 25.

**Explain in your own words what a square root is and provide an example.**

**A square root is a value that, when multiplied by itself, gives the original number. For example, the square root of 16 is 4.**

**List the square roots of the following perfect squares: 1, 9, 36.**

1. What is the square root of 1?

**1**

2. What is the square root of 9?

3

3. What is the square root of 36?

6

The square roots are 1, 3, and 6 respectively.

## Part 2: Understanding and Interpretation

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**Which of the following statements is true about square roots?**

undefined. A) The square root of a number is always positive.

undefined. C) The square root of a number is always less than the number.

**undefined. D) The square root of a number can be either positive or negative. ✓**

undefined. C) The square root of a negative number is a real number.

The correct statement is that the square root of a number can be either positive or negative.

**Select all the correct properties of square roots:**

undefined. A)  $\sqrt{a} * \sqrt{a} = a$  ✓

undefined. C)  $\sqrt{a/b} = \sqrt{a} / \sqrt{b}$  ✓

undefined. D)  $\sqrt{a * b} = \sqrt{a} * \sqrt{b}$  ✓

undefined. C)  $\sqrt{a + b} = \sqrt{a} + \sqrt{b}$

The correct properties are A and D.

**Describe how you would estimate the square root of a non-perfect square, such as 50.**

**To estimate  $\sqrt{50}$ , you can find the perfect squares 49 ( $7^2$ ) and 64 ( $8^2$ ) and conclude that  $\sqrt{50}$  is slightly more than 7.**

## Part 3: Application and Analysis

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**If the area of a square is 81 square units, what is the length of one side?**

undefined. A) 7 units

undefined. C) 9 units ✓

undefined. D) 10 units

undefined. C) 8 units

The length of one side is 9 units, since  $\sqrt{81} = 9$ .

**Which of the following expressions are correctly simplified?**

undefined. A)  $\sqrt{18} = 3\sqrt{2}$  ✓

undefined. C)  $\sqrt{72} = 6\sqrt{2}$

undefined. D)  $\sqrt{45} = 3\sqrt{5}$  ✓

undefined. C)  $\sqrt{50} = 5\sqrt{2}$

The correct simplifications are A, B, and D.

**Solve the equation  $x^2 = 49$  and explain your steps.**

To solve  $x^2 = 49$ , take the square root of both sides to find  $x = 7$  or  $x = -7$ .

**Which of the following expressions represents the square root of a product correctly?**

undefined. A)  $\sqrt{(a * b)} = a * b$

undefined. C)  $\sqrt{(a * b)} = \sqrt{a} * \sqrt{b}$  ✓

undefined. D)  $\sqrt{(a * b)} = a + b$

undefined. C)  $\sqrt{(a * b)} = \sqrt{a} + \sqrt{b}$

The correct expression is C:  $\sqrt{(a * b)} = \sqrt{a} * \sqrt{b}$ .

**Identify the correct steps to simplify  $\sqrt{72}$ :**

undefined. A) Factor 72 into  $36 * 2$  ✓

undefined. C) Simplify  $\sqrt{36}$  to 6 ✓

undefined. D) Combine to get  $6\sqrt{2}$  ✓

undefined. C) Simplify  $\sqrt{2}$  to 1.41

The correct steps are A, B, and D.

**Analyze the relationship between the square root and exponentiation. How does the square root relate to raising a number to a power?**

The square root of a number can be expressed as raising that number to the power of  $1/2$ .

## Part 4: Evaluation and Creation

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**Which scenario correctly uses the concept of square roots?**

undefined. A) Calculating the perimeter of a rectangle

undefined. C) Determining the volume of a cube

undefined. D) Measuring the circumference of a circle

**undefined. C) Finding the side length of a square from its area ✓**

The correct scenario is B: Finding the side length of a square from its area.

**Evaluate the following statements and select those that are true:**

**undefined. A) The square root of a negative number is imaginary. ✓**

**undefined. C) The square root of zero is zero. ✓**

**undefined. D) Every positive number has two square roots. ✓**

undefined. C) The square root of a fraction is greater than the fraction itself.

The true statements are A, B, and C.

**Create a real-world problem that involves finding a square root, and solve it. Explain your reasoning and solution process.**

**An example problem could be finding the side length of a square garden with an area of 64 square feet, which would be 8 feet.**