

Square Root Worksheets Questions and Answers PDF

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Part 1: Building a Foundation

What is the square root of 64?

Hint: Think of the number that, when multiplied by itself, gives 64.

- A) 6
- C) 8 ✓
- D) 9
- C) 7

■ The square root of 64 is 8.

Which of the following numbers are perfect squares?

Hint: Identify the numbers that can be expressed as the square of an integer.

- A) 16 ✓
- C) 25 ✓
- D) 30
- 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.

Hint: Consider how square roots relate to squaring numbers.

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.

Hint: Think of the numbers that, when squared, give you these perfect squares.

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

Which of the following statements is true about square roots?

Hint: Consider the properties of square roots and their definitions.

- A) The square root of a number is always positive.
- C) The square root of a number is always less than the number.
- D) The square root of a number can be either positive or negative. ✓
- 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:

Hint: Review the properties of square roots and their operations.

- A) $\sqrt{a} * \sqrt{a} = a$ ✓
- C) $\sqrt{a/b} = \sqrt{a} / \sqrt{b}$ ✓
- D) $\sqrt{a * b} = \sqrt{a} * \sqrt{b}$ ✓
- 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.

Hint: Think about the closest perfect squares around 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

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

Hint: Recall the formula for the area of a square.

- A) 7 units

- C) 9 units ✓
- D) 10 units
- C) 8 units

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

Which of the following expressions are correctly simplified?

Hint: Check each expression to see if it follows the rules of square root simplification.

- A) $\sqrt{18} = 3\sqrt{2}$ ✓
- C) $\sqrt{72} = 6\sqrt{2}$
- D) $\sqrt{45} = 3\sqrt{5}$ ✓
- C) $\sqrt{50} = 5\sqrt{2}$

■ The correct simplifications are A, B, and D.

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

Hint: Consider taking the square root of both sides.

■ 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?

Hint: Recall the property of square roots regarding multiplication.

- A) $\sqrt{a * b} = a * b$
- C) $\sqrt{a * b} = \sqrt{a} * \sqrt{b}$ ✓
- D) $\sqrt{a * b} = a + b$
- 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 $\sqrt{72}$:

Hint: Think about factoring 72 into its prime factors.

- A) Factor 72 into $36 * 2$ ✓
- C) Simplify $\sqrt{36}$ to 6 ✓
- D) Combine to get $6\sqrt{2}$ ✓
- 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?

Hint: Consider how square roots can be expressed as exponents.

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

Part 4: Evaluation and Creation

Which scenario correctly uses the concept of square roots?

Hint: Think about practical applications of square roots.

- A) Calculating the perimeter of a rectangle
- C) Determining the volume of a cube
- D) Measuring the circumference of a circle
- 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:

Hint: Consider the properties of square roots and their definitions.

- A) The square root of a negative number is imaginary. ✓**
- C) The square root of zero is zero. ✓**
- D) Every positive number has two square roots. ✓**
- 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.

Hint: Think of a scenario where you need to calculate a side length or area.

■ **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.**