LESSON MAKER PRO

Square Root Squares

Find positive square roots by thinking about square side lengths.

GRADE 7 · 7.NS.3

7.NS.3 "The student will recognize and describe the relationship between square roots and perfect squares. Determine the positive square root of a perfect square from 0 to 400.* Describe the relationship between square roots and perfect squares.*"

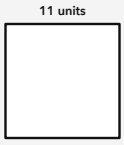
NAME _____ DATE _____

SQUARE AREAS AND ROOTS

A perfect square is the area of a square with a whole-number side length. The positive square root tells the side length when you know the area, so if $s \times s = A$, then $\sqrt{A} = s$.

WORKED EXAMPLE

Look at the square. What is the positive square root of its area?



1. The side length is 11 units.
2. Area = 11 × 11 = 121 square units.
3. $\sqrt{121} = 11$ because 11 × 11 = 121.

Answer: 11

PRACTICE 6 problems

1 Find the positive square root: $\sqrt{0}$

ANSWER _____

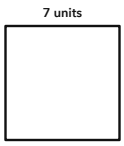
2 Find the positive square root: $\sqrt{64}$

ANSWER _____

3 Find the positive square root: $\sqrt{225}$

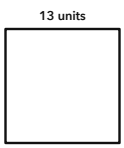
ANSWER _____

4 Look at the square. What is the positive square root of its area?



ANSWER _____

5 Look at the square. What is the positive square root of its area?



ANSWER _____

6 A square has an area of 324 square units. Find $\sqrt{324}$. Then give the length of one side of the square.

ANSWER _____

APPLY IT Show your work

1 The game club makes a square floor mat that covers 196 square feet. How long is each side of the mat?

WORK SPACE

ANSWER _____

2 A student designs a square album cover with an area of 400 square centimeters. What is the positive square root of 400, and what does it tell you about the cover?

WORK SPACE

ANSWER _____

CHALLENGE One step up

The area of a square is 300 square units. Between which two consecutive whole numbers does its positive square root lie? Explain using two nearby perfect squares.

WORK SPACE AND ANSWER

ANSWER KEY

Square Root Squares

GRADE 7 · 7.NS.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the positive square root: √0	**0**
2	Find the positive square root: √64	**8**
3	Find the positive square root: √225	**15**
4	Look at the square. What is the positive square root of its area?	**7**
5	Look at the square. What is the positive square root of its area?	**13**
6	A square has an area of 324 square units. Find √324. Then give the length of one side of the square.	**√324 = 18; side length = 18 units**

PART 2 · APPLY IT

1. **14 feet** Find √196. Since 14 × 14 = 196, each side is 14 feet.
2. **√400 = 20; each side of the cover is 20 centimeters.** Since 20 × 20 = 400, the positive square root is 20. A square root of the area gives the side length of a square.

CHALLENGE

Between 17 and 18, because 17 × 17 = 289 and 18 × 18 = 324, and 289 < 300 < 324.

Accept equivalent wording that identifies the positive root as the side length of a square. Require units when a problem asks for a side length.