LESSON MAKER PRO

Square Root Detectives

Find the positive roots hidden in perfect squares.

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 _____

THE BIG IDEA

A perfect square is the product of a whole number multiplied by itself. The positive square root tells which nonnegative number was multiplied by itself to make the perfect square.

WORKED EXAMPLE

Find sqrt(196).

1. Look for a number that multiplied by itself equals 196.
2. 14 x 14 = 196.
3. sqrt(196) = 14.

Answer: 14

PRACTICE 6 problems

1 Find sqrt(0).

ANSWER _____

2 Find sqrt(36).

ANSWER _____

3 Find sqrt(81).

ANSWER _____

4 Find sqrt(144).

ANSWER _____

5 Find sqrt(256).

ANSWER _____

6 Which number is a perfect square: 210, 225, or 230?

ANSWER _____

APPLY IT Show your work

1 A student art club makes a square digital poster with an area of 169 square centimeters. What is the positive length of one side?

WORK SPACE

ANSWER _____

2 At a school esports event, 324 seats are arranged in a square with the same number of seats in each row and column. How many seats are in each row?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Ravi says 399 is a perfect square because it is close to 400. Is Ravi correct? Explain your reasoning with two multiplication facts.

_____

_____

ANSWER KEY

Square Root Detectives

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find sqrt(0).	**0**
2	Find sqrt(36).	**6**
3	Find sqrt(81).	**9**
4	Find sqrt(144).	**12**
5	Find sqrt(256).	**16**
6	Which number is a perfect square: 210, 225, or 230?	**225**

PART 2 · APPLY IT

1. **13 centimeters** Find sqrt(169). Since 13 x 13 = 169, each side is 13 centimeters.
2. **18 seats** Find sqrt(324). Since 18 x 18 = 324, there are 18 seats in each row.

CHALLENGE

No. 19 x 19 = 361 and 20 x 20 = 400, so no whole number multiplied by itself equals 399.

Accept 0 as the square root of 0. For problem 6, students should identify 225 and may support it with 15 x 15 = 225.