

Square Root Search

Connect perfect squares to their square roots.

GRADE 7 • 7.NS.3.b

7.NS.3.b "Describe the relationship between square roots and perfect squares.*"

NAME _____

DATE _____

SQUARE ROOTS UNDO SQUARES

A perfect square is a number made by multiplying a whole number by itself. Its square root is the whole number that was multiplied twice, so square roots undo squaring.

WORKED EXAMPLE

Find $\sqrt{144}$.

1. Look for a whole number that multiplies by itself to make 144.
2. $12 \times 12 = 144$.
3. Therefore, $\sqrt{144} = 12$.

Answer: 12

PRACTICE 6 problems

- 1 Which perfect square has a square root of 9?

ANSWER _____

- 2 Find $\sqrt{49}$.

ANSWER _____

- 3 Is 72 a perfect square? Write yes or no.

ANSWER _____

- 4 Complete the equation: $\sqrt{\quad} = 11$

ANSWER _____

- 5 Find $\sqrt{169}$.

ANSWER _____

- 6 Find $\sqrt{36} + \sqrt{64}$.

ANSWER _____

APPLY IT Show your work

- 1** A game club arranges 225 trading cards in a square display with the same number of cards in each row and column. How many cards are in each row?

WORK SPACE

ANSWER _____

- 2** A student uses 196 small tiles to make a square design for a backpack patch. If each row has the same number of tiles, how many tiles are in each row?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Without using a decimal, decide which two consecutive whole numbers $\sqrt{300}$ is between. Explain using perfect squares.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Which perfect square has a square root of 9?	81
2	Find sqrt 49.	7
3	Is 72 a perfect square? Write yes or no.	no
4	Complete the equation: sqrt ____ = 11	121
5	Find sqrt 169.	13
6	Find sqrt 36 + sqrt 64.	14

PART 2 • APPLY IT

1. **15 cards** Find sqrt 225. Since $15 \times 15 = 225$, there are 15 cards in each row.
2. **14 tiles** Find sqrt 196. Since $14 \times 14 = 196$, each row has 14 tiles.

CHALLENGE

sqrt 300 is between 17 and 18 because $17 \times 17 = 289$ and $18 \times 18 = 324$, and 300 is between 289 and 324.

Accept square-root notation or multiplication facts that show the correct relationship. For the challenge, accept any clear explanation that compares 300 to 289 and 324.