

NAME: _____

Math _____, Period _____

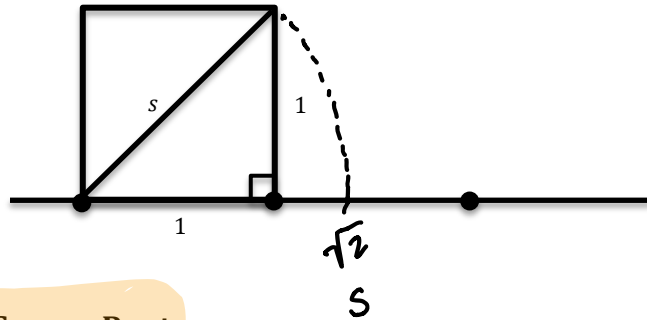
Mr. Rogove

Date: _____

LEARNING OBJECTIVE: We will estimate the value of square roots as between two integers. (G8M7L2)

CONCEPT DEVELOPMENT:

The Unit Square



Positive Square Roots

A positive number whose square is equal to a positive number b is denoted by the symbol \sqrt{b} . The symbol \sqrt{b} is automatically denotes a positive number. The number \sqrt{b} is called the positive square root of b .

Example:

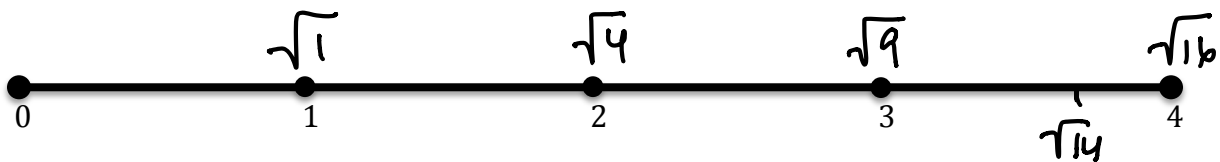
$\sqrt{9} = 3$

Non-Example

$\sqrt{9} = -3$

What is the positive square root of 25? 5

Estimating on a Number Line



Perfect squares have square roots that are equal to integers, but there are MANY numbers that are not perfect squares.

NAME: _____

Math _____, Period _____

Mr. Rogove

Date: _____

GUIDED PRACTICE:**Steps for Determining Square Roots**

1. Determine if the number you are finding the square root for is a perfect square. If so, identify the positive square root.
2. If the number is not a perfect square, identify the two integer numbers it falls between and determine which one is a better approximation.
3. Use a calculator to check your approximation.

$\sqrt{361}$ $= 19$	$\sqrt{576}$ $= 24$
$\sqrt{49}$ $\sqrt{51}$ $\sqrt{64}$ 7 8 closer to 7 $7\frac{2}{15}$	$\sqrt{64}$ $\sqrt{78}$ $\sqrt{81}$ 8 9 Closer to 9
$\sqrt{144}$ $\sqrt{164}$ $\sqrt{169}$ 12 13 closer to 13	$\sqrt{121}$ $\sqrt{123}$ $\sqrt{144}$ 11 12 closer to 11
$\sqrt{225}$ $\sqrt{247}$ $\sqrt{256}$ 15 16 closer to 16	$\sqrt{256}$ $\sqrt{281}$ $\sqrt{289}$ 16 17 closer to 17

NAME: _____

Math _____, Period _____

Mr. Rogove

Date: _____

ACTIVATING PRIOR KNOWLEDGE:

We know our square roots of perfect squares. Simplify if possible.

$\sqrt{324}$	$\sqrt{196}$
--------------	--------------

CLOSURE:

Give Exit Ticket for Lesson 2.

NOTES:

This maps to lesson 2 from Mod 7, Grade 8.
Do NCTM activity with this lesson?

$1^2 = 1$	$14^2 = 196$
$2^2 = 4$	$15^2 = 225$
$3^2 = 9$	$16^2 = 256$
$4^2 = 16$	$17^2 = 289$
$5^2 = 25$	$18^2 = 324$
$6^2 = 36$	$19^2 = 361$
$7^2 = 49$	$20^2 = 400$
$8^2 = 64$	$21^2 = 441$
$9^2 = 81$	$22^2 = 484$
$10^2 = 100$	$23^2 = 529$
$11^2 = 121$	$24^2 = 576$
$12^2 = 144$	$25^2 = 625$
$13^2 = 169$	