

Date: _____

KEY

3.3 Notes: Estimating Square Roots

Chris is 15 and is the oldest of 3 siblings. His sister, Jamie, is 10 and is the youngest. How old could their brother, Ryan, be?

10, 11, 12, 13, 14, 15

Many square roots are not easy to find out without using your calculator, but you can estimate how big they are if you know a number that is smaller and a number that is larger.

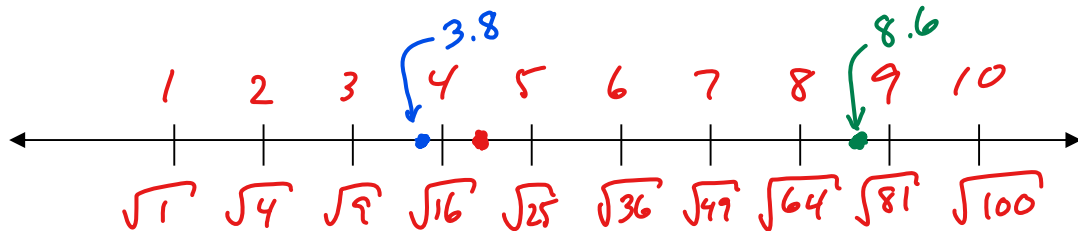
Finding square root on my calculator:

use the $\sqrt{\quad}$ button.

*on some calculators, you press $\sqrt{\quad}$ before the number. On others, you press it first.

Complete table for the first 10 natural numbers and what they are the square root of:

1	2	3	4	5	6	7	8	9	10
$\sqrt{1}$	$\sqrt{4}$	$\sqrt{9}$	$\sqrt{16}$	$\sqrt{25}$	$\sqrt{36}$	$\sqrt{49}$	$\sqrt{64}$	$\sqrt{81}$	$\sqrt{100}$



Without using a calculator, estimate each of the following and explain why you chose your answer

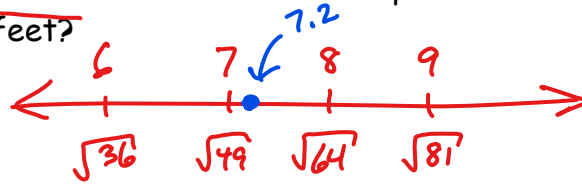
$\sqrt{14}$ \approx 3.8

I plotted $\sqrt{14}$ on the lower scale. Then, I used the upper scale to read the value, 3.8.

$\sqrt{75}$ \approx 8.6

Example:

Chang Mai buys a square mat with an area of 53 square feet. Will it fit in a room that measures 8 feet by 10 feet?

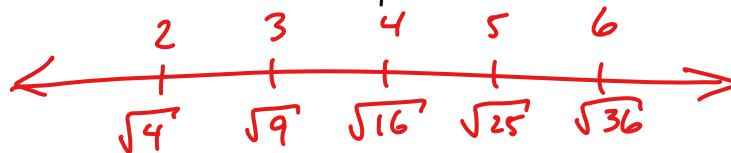


Calculator:
7.3 ft

7.3 ft + 7.3 ft
Yes... because 7.2 ft + 7.2 ft are the dimensions, and they're shorter than 8 ft and 10 ft.

Example:

What are 3 whole numbers that have a square root between 3 and 5?



Any 3 numbers from 10, 11, 12 ... 22, 23, 24

Exc 17, 23, 24

How many whole numbers are there that have a square root between 3 and 5?

15

10, 11, 12, 13, 14

15, 16, 17, 18, 19

20, 21, 22, 23, 24