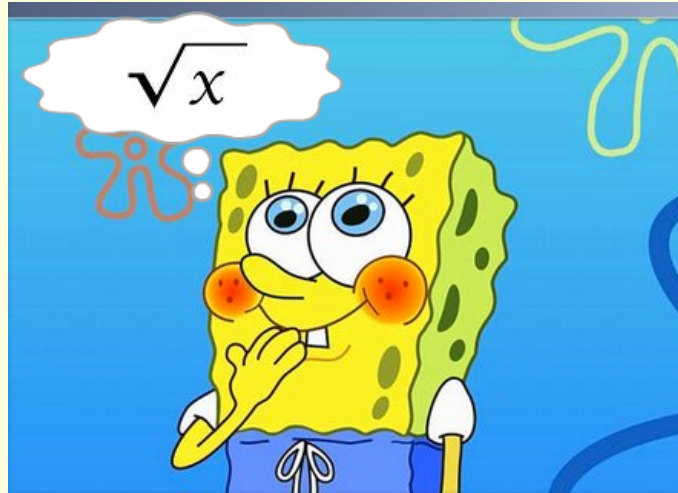


# Section 1.4- Estimating Square Roots



Sep 15-8:51 PM

Interactive interface with a blue border. At the top left are two buttons: "Edit" and "Reset". At the top right is a circular button with a question mark "?". On the left side, there is a vertical column of five circular buttons labeled "1", "2", "3", "4", and "5". The main area is a large white space for input.

Sep 15-8:55 PM

## Investigate- Page 22

$$1^2 = 1 \times 1 = 1 \quad \sqrt{1} = 1$$

$$2^2 = 2 \times 2 = 4 \quad \sqrt{4} = 2$$

Sep 15-8:58 PM

The **square root** of a **square number** will always be a **whole number** or an exact square root.

$$\text{Ex: } \sqrt{16} = \sqrt{4 \times 4} = 4$$

The **square roots** of numbers that are **not** square numbers will **not** be a whole number and must be **estimated**.

$$\text{Ex: } \sqrt{20}$$

Sep 15-9:06 PM

**To estimate square roots  
we need to know the first  
12 perfect square  
numbers!!!!!!!!!!!!**

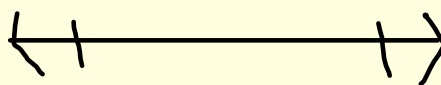
Sep 15-9:11 PM

## Estimating Square Roots

### 1. Using a number line

- Determine which two consecutive square numbers the number lies between.
- Estimate the square root on the number line.

Ex:  $\sqrt{45}$  45 is between the consecutive square numbers \_\_\_ and \_\_\_



Sep 15-9:12 PM

Ex:  $\sqrt{20}$

Sep 15-9:19 PM

## 2) Using a calculator to guess and test

- Determine which two consecutive square numbers the number lies between.
- Estimate the square root.
- Use calculator to guess and test.

Ex:  $\sqrt{93}$      $81 < 93 < 100$  so  $\sqrt{81} < \sqrt{93} < \sqrt{100}$

### Guess and Test!

Try 9.5  
Try 9.6  
Try 9.7  
Try 9.65  
Try 9.64

Sep 15-9:22 PM

Examples:

Sep 15-9:30 PM

### **3) Using square root button on a calculator**

Gives an approximate value!

Ex:  $\sqrt{33}$

Sep 15-9:31 PM

Textbook pages 25-26

Discuss #'s 1-3

Together #'s 7, 10, 13, 16

Own #'s 4, 5, 8, 9, 12abc, 15, 11

Sep 15-9:33 PM