

Name Key

Date \_\_\_\_\_

Mrs. Roubos

8R Math Period \_\_\_\_\_

Estimating Square Roots Day 2: To the Nearest Tenth and Hundredth

A) Steps:

1. Find the two consecutive integers the value is in between (from yesterday's lesson)
2. Find what integer it is closer to by using subtraction (from yesterday's lesson)
3. Use your calculator to get the value of the  $\sqrt{\quad}$  (write every # that is in the display)
4. Round your answer to the nearest tenth or hundredth

or  $\sqrt{0.5678}$

$\{\sqrt{0}, \sqrt{1}, \sqrt{4}, \sqrt{9}, \sqrt{16}, \sqrt{25}, \sqrt{36}, \sqrt{49}, \sqrt{64}, \sqrt{81}, \sqrt{100}, \sqrt{121}, \sqrt{144}, \sqrt{169}, \sqrt{196}, \sqrt{225}, \dots\}$

B) Examples:

1. Approximate  $\sqrt{88}$  to the nearest tenth.

$$\sqrt{81} < \sqrt{88} < \sqrt{100}$$

$$9 < \sqrt{88} < 10$$

$$\begin{array}{r} 88 \\ -81 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 100 \\ -88 \\ \hline 12 \end{array}$$

Calc:  $\sqrt{88} \approx 9.38083152\dots$

must have

9.4

$\sqrt{88}$  is between 9 & 10  
and closer to 9.

2. Approximate  $\sqrt{70}$  to the nearest hundredth.

$$\sqrt{64} < \sqrt{70} < \sqrt{81}$$

$$8 < \sqrt{70} < 9$$

$$\begin{array}{r} 70 \\ -64 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 81 \\ -70 \\ \hline 11 \end{array}$$

Calc:  $\sqrt{70} \approx 8.366600265\dots$

8.37

$\sqrt{70}$  is between 8 & 9  
and closer to 8.

3. Approximate  $\sqrt{15}$  to the nearest tenth.

$$\sqrt{9} < \sqrt{15} < \sqrt{16}$$

$$3 < \sqrt{15} < 4$$

$$\begin{array}{r} 15 \\ -9 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 16 \\ -15 \\ \hline 1 \end{array}$$

Calc:  $\sqrt{15} \approx 3.872983346\dots$

$\boxed{3.9}$

$\sqrt{15}$  is between 3 + 4  
and closer to 4

4. Approximate  $\sqrt{45}$  to the nearest hundredth.

$$\sqrt{36} < \sqrt{45} < \sqrt{49}$$

$$6 < \sqrt{45} < 7$$

$$\begin{array}{r} 45 \\ -36 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 49 \\ -45 \\ \hline 4 \end{array}$$

Calc:  $\sqrt{45} \approx 6.708203932\dots$

$\boxed{6.71}$

$\sqrt{45}$  is between 6 + 7  
and closer to 7