

## Estimating Irrational Numbers to the nearest tenth

Name: \_\_\_\_\_

Key

Estimate each problem to the nearest tenth.

1.)  $\sqrt{28}$

#1 answer: 5.3

2.)  $\sqrt{96}$

#2 answer: 9.8

3.)  $\sqrt{78}$

#3 answer: 8.8

4.)  $\sqrt{111}$

#4 answer: 10.5

5.)  $\sqrt{63}$

#5 answer: 7.9

6.)  $\sqrt{39}$

#6 answer: 6.2

7.)  $\sqrt{14}$

#7 answer: 3.7

8.)  $\sqrt{92}$

#8 answer: 9.6

9.)  $\sqrt{85}$

#9 answer: 9.2

10.)  $\sqrt{46}$

#10 answer: 6.8

$$1.) \sqrt{25} = 5$$

$$\sqrt{28} = 5.\underline{3}$$

$$\sqrt{36} = 6$$

$$\begin{array}{r} 5.2 \\ \times 5.2 \\ \hline 104 \\ 2600 \\ \hline 2704 \end{array}$$

$$\begin{array}{r} 5.3 \\ \times 5.3 \\ \hline 159 \\ 2650 \\ \hline 2809 \end{array}$$

$$2.) \sqrt{81} = 9$$

$$\sqrt{96} = 9.\underline{8}$$

$$\sqrt{100} = 10$$

$$\begin{array}{r} 9.8 \\ \times 9.8 \\ \hline 784 \\ 8820 \\ \hline 9604 \end{array}$$

$$\begin{array}{r} 9.7 \\ \times 9.7 \\ \hline 679 \\ 8730 \\ \hline 9409 \end{array}$$

$$3.) \sqrt{64} = 8$$

$$\sqrt{78} = 8.\underline{8}$$

$$\sqrt{81} = 9$$

$$\begin{array}{r} 8.7 \\ \times 8.7 \\ \hline 609 \\ 6960 \\ \hline 7569 \end{array}$$

$$\begin{array}{r} 8.8 \\ \times 8.8 \\ \hline 704 \\ 7040 \\ \hline 7744 \end{array} \quad \begin{array}{r} 8.9 \\ \times 8.9 \\ \hline 801 \\ 7120 \\ \hline 7921 \end{array}$$

$$4.) \sqrt{100} = 10$$

$$\sqrt{111} = 10.\underline{5}$$

$$\sqrt{121} = 11$$

$$\begin{array}{r} 10.4 \\ \times 10.4 \\ \hline 416 \\ 0000 \\ 10400 \\ \hline 10816 \end{array}$$

$$\begin{array}{r} 10.5 \\ \times 10.5 \\ \hline 525 \\ 0000 \\ 10500 \\ \hline 11025 \end{array}$$

$$5.) \sqrt{49} = 7$$

$$\sqrt{63} = 7.\underline{9}$$

$$\sqrt{64} = 8$$

$$\begin{array}{r} 7.9 \\ \times 7.9 \\ \hline 711 \\ 5530 \\ \hline 6241 \end{array}$$

6.) $\sqrt{36} = 6$	$6.1$	$6.2$	$6.3$
$\sqrt{39} = 6.2$	$\begin{array}{r} \times 6.1 \\ \hline 61 \\ 3660 \\ \hline 37.21 \end{array}$	$\begin{array}{r} \times 6.2 \\ \hline 124 \\ 3720 \\ \hline 38.44 \end{array}$	$\begin{array}{r} \times 6.3 \\ \hline 189 \\ 3780 \\ \hline 39.69 \end{array}$
$\sqrt{49} = 7$			

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7.) $\sqrt{9} = 3$	$3.8$	$3.7$
$\sqrt{14} = 3.7$	$\begin{array}{r} \times 3.8 \\ \hline 304 \\ 1140 \\ \hline 14.44 \end{array}$	$\begin{array}{r} \times 3.7 \\ \hline 259 \\ 1110 \\ \hline 13.69 \end{array}$
$\sqrt{16} = 4$		

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8.) $\sqrt{81} = 9$	$9.5$	$9.6$
$\sqrt{92} = 9.6$	$\begin{array}{r} \times 9.5 \\ \hline 475 \\ 8550 \\ \hline 90.25 \end{array}$	$\begin{array}{r} \times 9.6 \\ \hline 576 \\ 8640 \\ \hline 92.16 \end{array}$
$\sqrt{100} = 10$		

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9.) $\sqrt{81} = 9$	$9.1$	$9.2$	$9.3$
$\sqrt{85} = 9.2$	$\begin{array}{r} \times 9.1 \\ \hline 191 \\ 8190 \\ \hline 82.81 \end{array}$	$\begin{array}{r} \times 9.2 \\ \hline 184 \\ 8280 \\ \hline 84.64 \end{array}$	$\begin{array}{r} \times 9.3 \\ \hline 279 \\ 8370 \\ \hline 86.49 \end{array}$
$\sqrt{100} = 10$			

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10.) $\sqrt{36} = 6$	$6.7$	$6.8$
$\sqrt{46} = 6.8$	$\begin{array}{r} \times 6.7 \\ \hline 469 \\ 4020 \\ \hline 44.89 \end{array}$	$\begin{array}{r} \times 6.8 \\ \hline 544 \\ 4080 \\ \hline 46.24 \end{array}$
$\sqrt{49} = 7$		