

Name \_\_\_\_\_

# Estimating Square Roots

1. Explain what a perfect square is.

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2. Complete the table below by listing the first 15 perfect squares and their square roots.

<b>Perfect Squares</b>	
1	$\sqrt{\quad} = \quad$
4	$\sqrt{\quad} = \quad$
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3. You can approximate the value of non-perfect squares using what you know about perfect squares.

Between which two perfect squares would you find the number 65? \_\_\_\_\_ and \_\_\_\_\_

What are their square roots? \_\_\_\_\_ and \_\_\_\_\_

Knowing that, between which two integers would you find  $\sqrt{65}$ ? \_\_\_\_\_ and \_\_\_\_\_  
Approximate \_\_\_\_\_ to the nearest tenth then check yourself with a calculator.

4. Without using your calculator, approximate the value of each of the following square roots by identifying the perfect squares the radicand falls between.

$\sqrt{12}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

$\sqrt{38}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

$\sqrt{75}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

$\sqrt{130}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

$-\sqrt{29}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

$-\sqrt{57}$  is between  $\underline{\quad}$  and  $\underline{\quad}$ . Therefore, it is between the integers  $\underline{\quad}$  and  $\underline{\quad}$ .

5. Write instructions on how to estimate the square root of a number that is not a perfect square.

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6. Tricia estimates that  $\sqrt{85}$  is about eight. Do you agree or disagree? Explain.

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7. Is  $\sqrt{37}$  more or less than 6? Explain.

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8. Is 9.5 a good first guess for  $\sqrt{\quad}$ ? Why or why not?

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