**Estimating Square Roots**

**1.** Explain what a perfect square is.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

|  |  |
| --- | --- |
| ***Perfect Squares*** |  |
| 1 | = |
| 4 | **=** |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |
|  | = |

**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? \_\_\_\_\_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.

is between and .Therefore, it is between the integers \_\_\_\_\_ and \_\_\_\_\_.

 is between and .Therefore, it is between the integers \_\_\_\_\_ and \_\_\_\_\_.

 is between and .Therefore, it is between the integers \_\_\_\_\_ and \_\_\_\_\_.

is between and .Therefore, it is between the integers \_\_\_\_ and \_\_\_\_\_.

–is between and .Therefore, it is between the integers \_\_\_\_ and \_\_\_\_\_.

–is between and .Therefore, it is between the integers \_\_\_\_ and \_\_\_\_\_.

**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  is about eight. Do you agree or disagree? Explain.

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**7.** Is more or less than 6? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8.** Is 9.5 a good first guess for ? Why or why not?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_