

3

Family Letter

Dear Parent or Guardian:

It is very important that we learn about all real numbers. Not all of the numbers we encounter in life are integers, decimals, or fractions. Even in construction, sports, and art, numbers are not always "nice and neat." Knowing how to find square roots, how to apply the Pythagorean Theorem are skills that we can use to help us deal with all real numbers.

In **Chapter 3, Real Numbers and the Pythagorean Theorem**, your child will learn how to find and estimate square roots, to identify and classify real numbers, and to use the Pythagorean Theorem. Your child will also learn how to solve problems by drawing Venn diagrams and how to find the distance between two points on a coordinate plane. In this chapter, your child will complete a variety of daily classroom assignments and activities and possibly a chapter project.

By signing this letter and returning it with your child, you agree to encourage your child by getting involved. Enclosed is an activity you can do with your child that practices how the math we will be learning in Chapter 3 might be tested. You may also wish to log on to www.msmath3.com for self-check quizzes and other study help. If you have any questions or comments, feel free to contact me at school.

Sincerely,

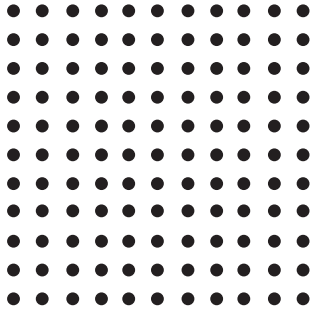
Signature of Parent or Guardian _____ Date _____

3 Family Activity

State Test Practice

Fold the page along the dashed line. Work each problem on another piece of paper. Then unfold the page to check your work.

1. Use the array shown below to help answer the question.



What is the square root of 121?

- A 12
- B 9
- C 13
- D 11

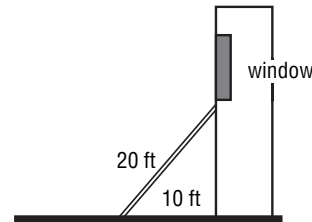
Fold here

Solution

1. The array shows 121 dots in a square with 11 rows of 11 dots. The number of dots in each row shows the square root of 121. Since there are 11 dots in each row, the square root is 11.

The answer is **D**.

2. Gerri is attempting to install a new window for a second floor room. She is not sure how far off the ground the window is, but she does know that the ladder is 20 feet long. She also knows that she is standing 10 feet from the house.



Which equation will allow you to find how far the window is from the ground (h)?

- A $20 - 10 = h$
- B $20^2 - 10 = h^2$
- C $20^2 - 10^2 = h^2$
- D $h^2 + 10^2 = 20$

Solution

2. *Hint: The Pythagorean Theorem can help you find the answer to questions of distance in cases where a right triangle is formed. The Pythagorean Theorem states that the sum of the squares of the legs of a right triangle is equal to the square of the hypotenuse ($a^2 + b^2 = c^2$). You can use the rules of mathematics to change the form of this to an equation involving subtraction rather than addition.*

The ladder, ground, and wall form a right triangle. The ladder represents the hypotenuse or the c value. Let the ground distance be the b value, and use h to represent the height, which is the a value.

$$a^2 + b^2 = c^2 \text{ becomes } h^2 + 10^2 = 20^2$$

If you subtract 10^2 from each side, the equation becomes $h^2 = 20^2 - 10^2$. This is the same as the equation in Choice C.

The answer is **C**.