

## Chapter 7 The Pythagorean Theorem

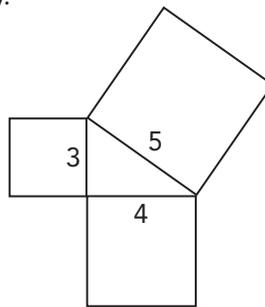
### Dear Family,

In this chapter, your student will learn about the Pythagorean Theorem. Some of the skills your student will practice are:

- using the Pythagorean Theorem to find side lengths in triangles
- using the converse of the Pythagorean Theorem to decide if a triangle is a right triangle
- solving real-world problems involving the Pythagorean Theorem
- using the Pythagorean Theorem to solve problems involving three-dimensional figures, including finding volumes of solids

### Activity

- The Pythagorean Theorem is an important result that students will use in many different math classes. You can help your student understand the theorem with this activity.
- Sketch a right triangle with side lengths 3, 4, and 5. Then sketch a square on each side of the triangle, as shown.
- With your student, find the area of each of the squares.
- Discuss how the areas of the squares represent the terms in the Pythagorean Theorem, and notice that the sum of the areas of the two smaller areas (9 and 16) equals the larger area (25).



Repeat the activity with a triangle that does not have a right angle. Do the areas of two of the squares add up to the area of the third square? Why or why not?

### Vocabulary to Practice

In a right triangle, the longest side is called the **hypotenuse**. The two shorter sides are called the **legs**.

The **Pythagorean Theorem** states that if the lengths of the legs of a right triangle are  $a$  and  $b$ , and the length of its hypotenuse is  $c$ , then  $a^2 + b^2 = c^2$ .



### Online Resources

For additional Parent Resources [my.hrw.com](http://my.hrw.com)