

PYTHAGOREAN ACTIVITY

Essential Question

How are the lengths of the sides of a right triangle related?

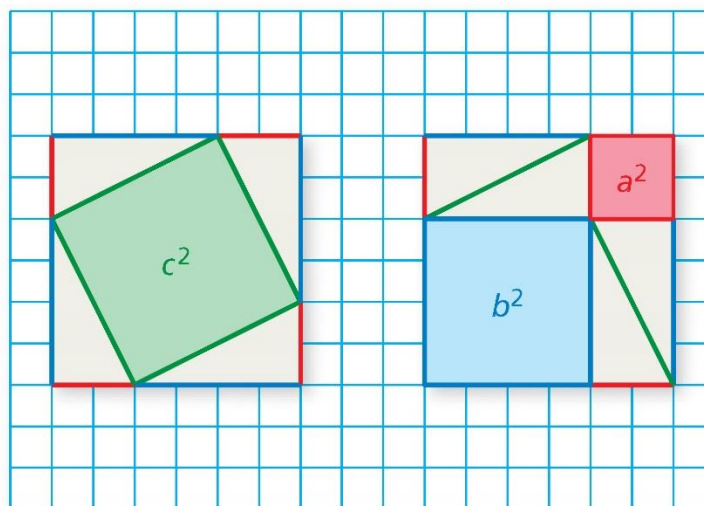
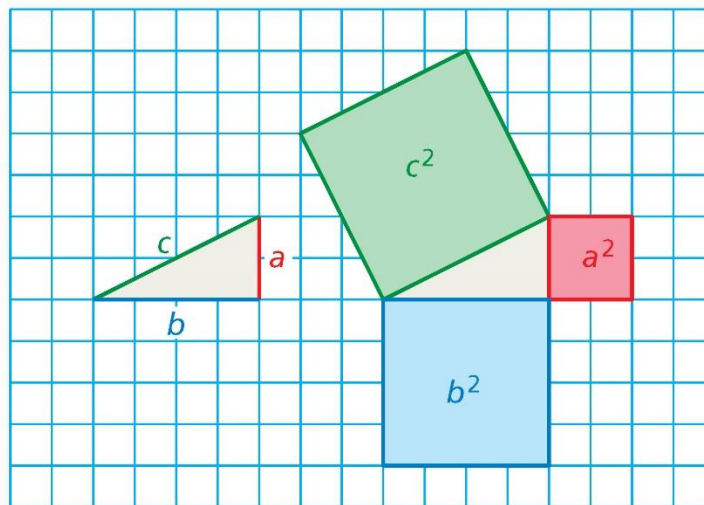
Pythagoras was a Greek mathematician and philosopher who discovered one of the most famous rules in mathematics. In mathematics, a rule is called a **theorem**. So, the rule that Pythagoras discovered is called the Pythagorean Theorem.



Pythagoras
(c. 570–c. 490 B.C.)

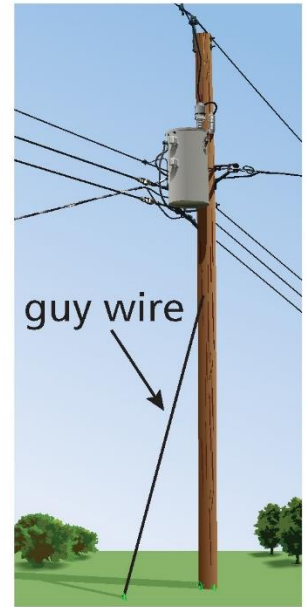
Work with a partner.

- On grid paper, draw any right triangle. Label the lengths of the two shorter sides a and b .
- Label the length of the longest side c .
- Draw squares along each of the three sides. Label the areas of the three squares a^2 , b^2 , and c^2 .
- Cut out the three squares. Make eight copies of the right triangle and cut them out. Arrange the figures to form two identical larger squares.
- MODELING** The Pythagorean Theorem describes the relationship among a^2 , b^2 , and c^2 . Use your result from part (d) to write an equation that describes this relationship.



Work with a partner. A guy wire attached 24 feet above ground level on a telephone pole provides support for the pole.

- a. **PROBLEM SOLVING** Describe a procedure that you could use to find the length of the guy wire without directly measuring the wire.
- b. Find the length of the wire when it meets the ground 10 feet from the base of the pole.



-What Is Your Answer?

4. **IN YOUR OWN WORDS** How are the lengths of the sides of a right triangle related? Give an example using whole numbers.
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