Pythagoras was a **Greek Mathematician** born in 569 B.C. who studied math, music, and astronomy.

Pythagoras was the first to prove that the **square of the hypotenuse** is the **sum** of the squared sides.

Today this is called Pythagoras’ theorem.

**Pythagorean Theorem:** \( a^2 + b^2 = c^2 \)
Discovering the Pythagorean Theorem

Let’s see how Pythagoras discovered his theorem: \( a^2 + b^2 = c^2 \)

Using Side A, draw a square that extends to the left of A.
What is the area of the square?

Using Side B, draw a square that extends below B.
What is the area of the square?

Using Side C, draw a square that extends out from C.
The length and width must be the same and the square must have right angles.
Plot a point that is three up and four over from the endpoints of line C.
Draw lines to complete your square.

Without a ruler it is difficult to calculate the length of C or the area of the resulting square. However Pythagoras says we don’t have to. Instead, we can take the area of the A square and add it to the area of the B square in order to find the area of the C square.
What is the area of the square?

If we take the square root of the area of C then we will have the length of C.
What is the length of C?
Pythagoras’ Theorem – Does It Really Work?

Instructions:
1) Cut off the small and medium squares. (Numbered 1-4 and 5)
2) Cut the medium square along the dotted lines.
3) Try to arrange the pieces (1-5) inside the larger, darker square.

What can you conclude from this exercise? _____________________________________
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