Warm Up

Find the range of values for a triangle with sides of 7 inches and 14 inches. What is a possible value for the third side of this triangle?
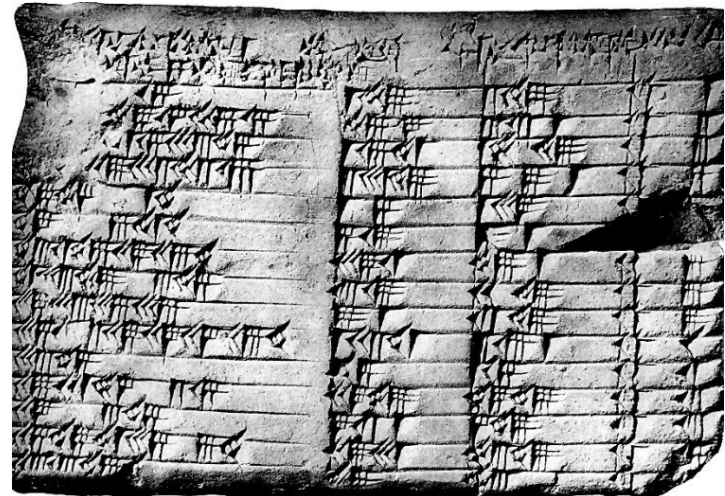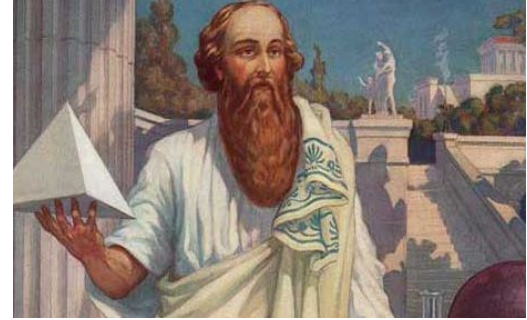
2.3.2 - Pythagorean Theorem

Aim: How can I determine the length of the third side of a right triangle?

Some history...

Named after Pythagoras - Greek mathematician (569-475 BC)

Evidence of ancient Babylonians knowing the Pythagorean Theorem on Plimpton 322 (1790-1750 BC)
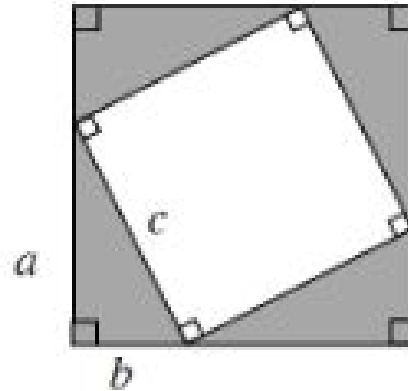
Let's explore...

Cut the shaded triangles out of the sheet provided to you

Arrange your triangles in the square so that you have something that looks like the image to the right - **what is the area of the unshaded region?**
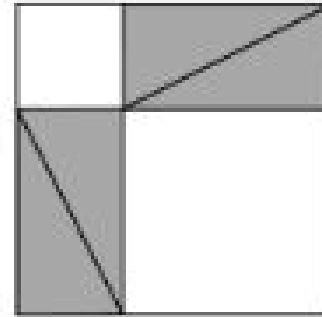
Will this area change if we rearrange the shaded triangles? Why or why not?

Let's explore...

Now, arrange your triangles in the square so that you have something that looks like the image to the right - **now what is the area of the unshaded region?**

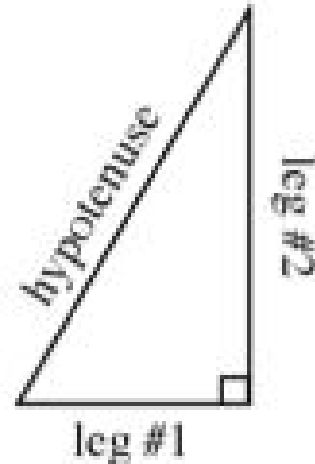How can this area be related to the area from the previous example?

The Pythagorean Theorem

What we have just shown is known as the **Pythagorean Theorem**. The Pythagorean Theorem says:
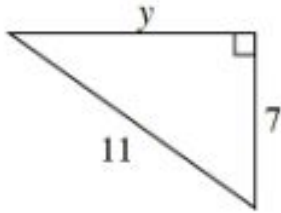
leg² + leg² = hypotenuse²
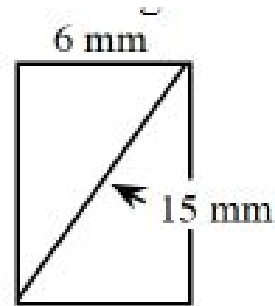
or, a² + b² = c²

Example

Find the value of y.

Find the area of the rectangle below.

Practice

Work on page 420 in the purple textbook.

#1-15 odd, 16, 17, 27-30