Date_____ **Math 105 Activity** **Your Names**_____

The Pythagorean Theorem

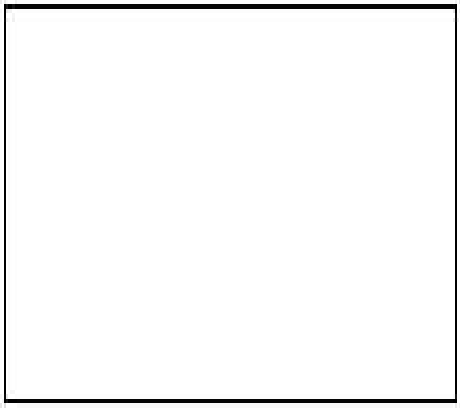
I. For this activity you will work with **four** congruent right triangles and three squares, one for each side of the triangle. Suppose that the triangle sides have length *a*, *b*, and *c*. (The hypotenuse has length *c*.)

A. Use the four triangles and the two smaller squares to make a single square.
What is the length of one side of this square? Ans._____

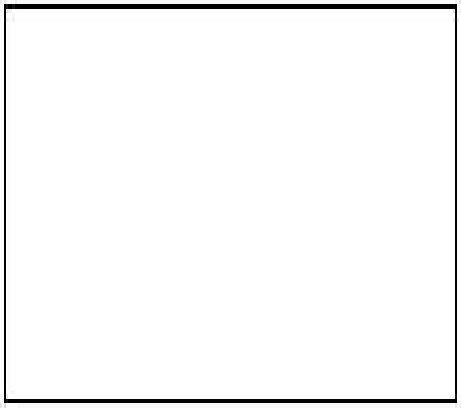
Record below the pattern you use in the square labeled A.

B. Use the four triangles and the largest square to make a single square.
What is the length of one side of this square? Ans._____

Record the pattern you use below in the square labeled B.



A



B

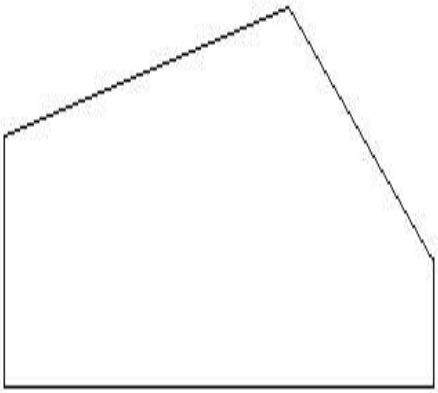
II. For this activity you will work with **two** congruent right triangles and the same three squares, one for each side of the triangle.

A. Use two triangles and the two smaller squares to make a single pentagon.
Record below the pattern you use on the pentagon labeled A.

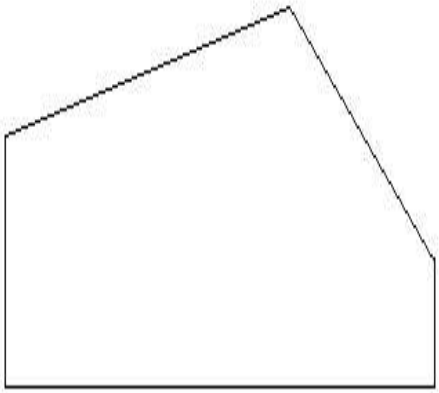
What are the lengths of the sides of the pentagon? Ans._____

B. Use two triangles and the largest square to make a single pentagon.
Record below the pattern you use on the pentagon labeled B.

What are the lengths of the sides of the pentagon? Ans._____



A



B

III. Using either Activity I or II, write an explanation of why this activity shows that the area of the largest square is the same as the area of the two smaller squares combined.