


Materials:


- 1- Geometric set.
- 2- Pencil and eraser.
- 3- GeoGebra.


I- Consider the right triangle ABC of hypotenuse $[BC]$.

a. Draw a square on each side of the triangle.

b. Find the area of each of the formed squares.

 Area of $Square_a = \dots\dots\dots$

 Area of $Square_b = \dots\dots\dots$

 Area of $Square_c = \dots\dots\dots$

c. Determine the sum of the areas formed by the legs.

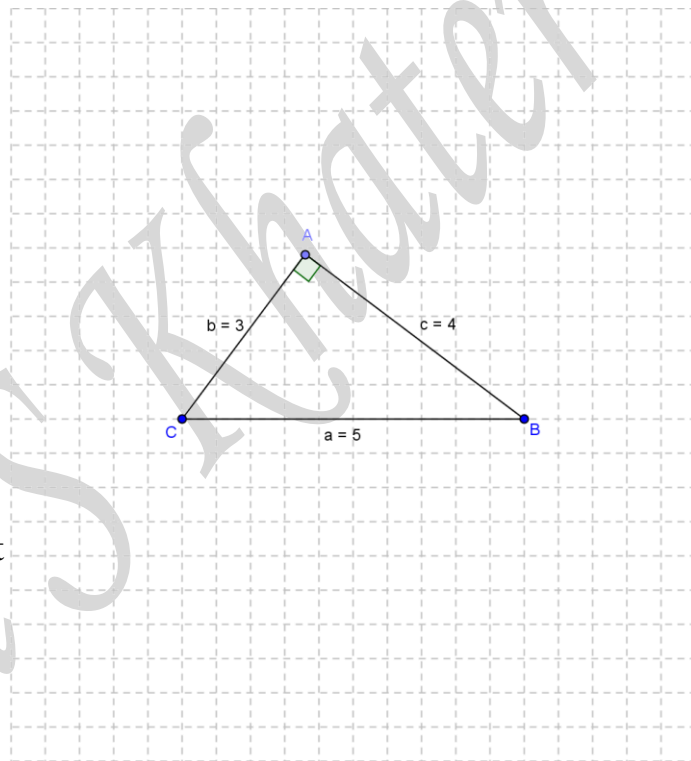
d. Compare the formed sum with the area of the square formed by the hypotenuse.
.....

e. What relation exists among the sides of a right triangle?
.....

f. Write the formed relation in words.
.....

g. Why do you think, we can use this relation?
.....

h. Does this relation work for any triangle?



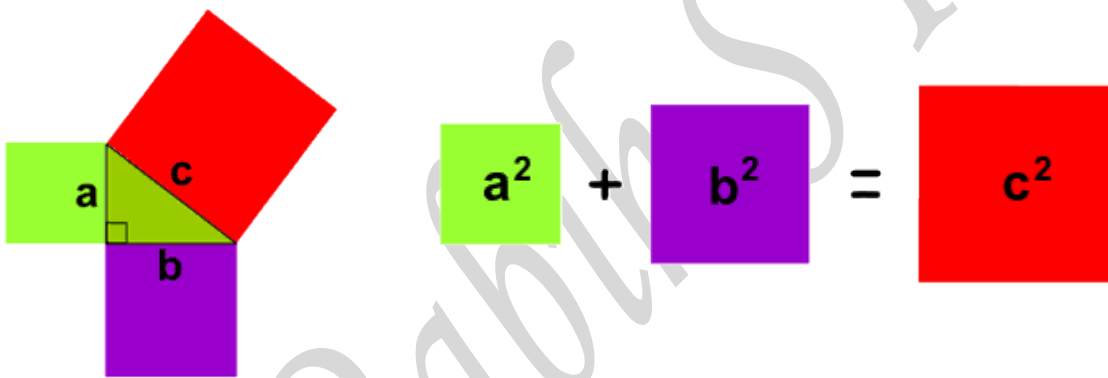
The relation $hyp^2 = leg_1^2 + leg_2^2$ is known as "Pythagoras' Theorem"

Pythagoras' theorem

Statement In a right triangle, the *square* of the *hypotenuse* is equal to the *sum* of *squares* of the other *legs*.

Conditions To apply Pythagorean theorem:
1- Triangle should be right.
2- The measure of any two sides should be given.

Usages 1- To find the measure of a missing side
2- To find relation among sides of right triangle.




Assessment:



2.5 min



2.5 min

 **Historical Note:** while we call it Pythagoras' Theorem, it was also known by Indian, Greek, Chinese and Babylonian mathematicians well before he lived!

useful site: [Math is fun.](#)