# VISUAL DEMOSTRATION OF THE PYTHAGOREAN THEOREM - 4

You will surely know the classic statement of the **Pythagorean Theorem**, *the square of the hypotenuse is equal to the sum of the squares of the legs*. If *a* is the hypotenuse and *b* and *c* the legs: $a^2 ? b^2 ? c^2$ But this statement also has a very interesting geometric interpretation. Look: you will surely remember that the measurement of the area of a square is the square of the length of its side. Considering this, Pythagoras' Theorem could also be enunciated this way: ***the area of the square that has the hypotenuse as a side, is equal to the sum of the areas of the squares whose sides are the legs***. You are going to verify this with the aid of this puzzle. You will have to prove that the square constructed on the hypotenuse has exactly the same area that both squares constructed on the legs, but you are going to prove it indirectly, using the pieces of the puzzle indicated in each case to fill in the square drawn in the pattern, that indeed has the sum of the legs as a side.

- With the four triangles and the big square (the one that has as a side the hypotenuse) you must fill in all the square in the pattern:

- Now, using the four triangles as well and changing the big square by two other smaller (those than have the legs as sides) you have also to complete the square in the pattern:

YOU WILL NEED: