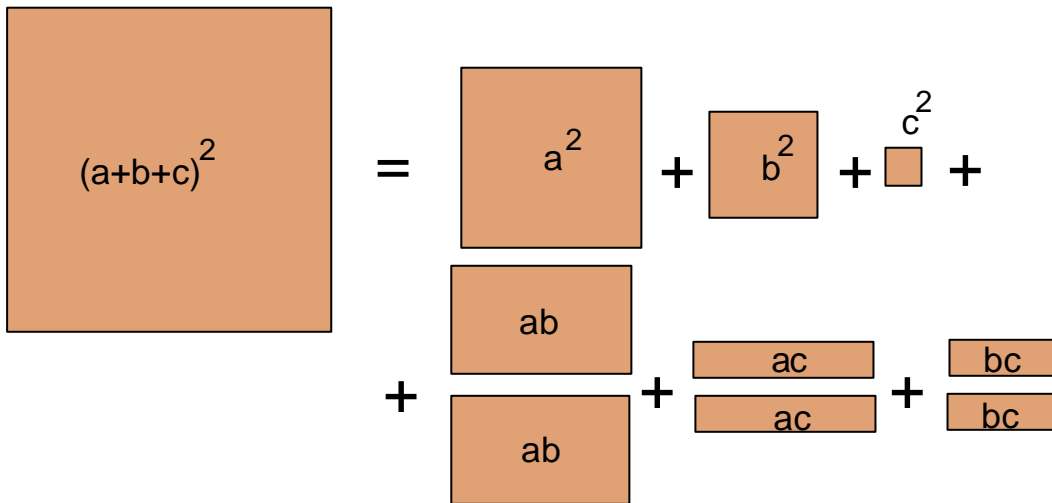


GEOMETRY IN ALGEBRA-4

The fact that there is a great connection between Geometry and Algebra it is surely no news for you. Without a doubt, many formulae that you have used to calculate perimeters, areas, volumes, etc will come to your memory. But that is not the only relation that exists between these two parts of the Mathematics, far from it. Thus, for example, the geometric demonstrations of algebraic relations are particularly beautiful. This is what we are going to do in the following activity with an algebraic equality:

$$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$$

We can interpret the squares as expressions of areas of squares and the products of two factors as expressions of areas of rectangles. Therefore, the previous equality would have the following geometric meaning: *the area of the square $a+b+c$ is equal to the sum of the areas of three squares of respective sides a , b and c , plus the ones of two equal rectangles of sides a and b , plus the ones of two equal rectangles of sides a and c , and lastly, plus the ones of two equal rectangles of sides b and c .* We can represent this statement in the following way:



Try to check it with the pieces of the puzzle

YOU WILL NEED:
Puzzle (9 pieces) and the checking board.