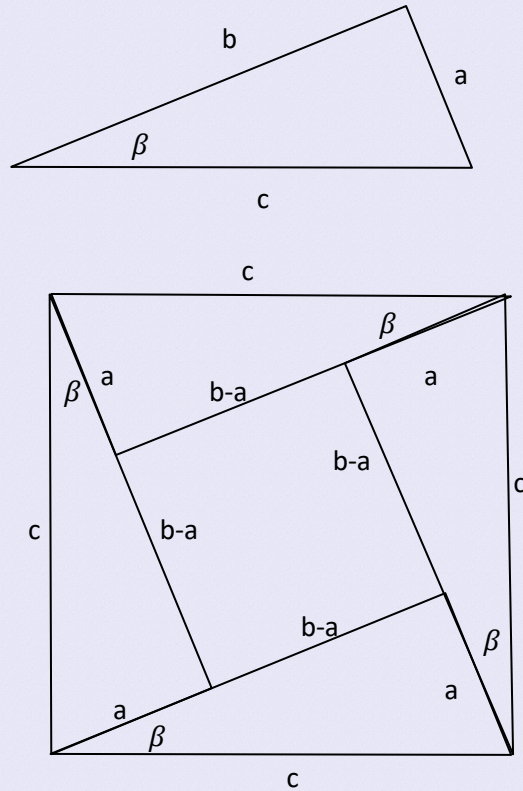**<u>Proof of theorem of Pythagoras</u>**

So to proof for the rectangular lines a and b that the following relationship is always true:
$$c^2 = a^2 + b^2$$

Proof:

- The area of the total square is c^2.
- This total area consists of 4 equal triangles and 1 remaining square.
- 2 equal triangles form a square. So the area of a triangle is: 1/2×ab.
- The area of the remaing square is: $(b-a)(b-a) = a^2 - 2ab + b^2$

So the total area is equal to 4 times the triangle and 1 remaining square in the middle.
$$c^2 = 4 \times \frac{1}{2} ab + a^2 - 2ab + b^2 = a^2 + b^2$$

Thus:
$$c^2 = a^2 + b^2$$

q.e.d.