Pythagoras' theorem

a   b

b

c

a

c

c

b   a

c
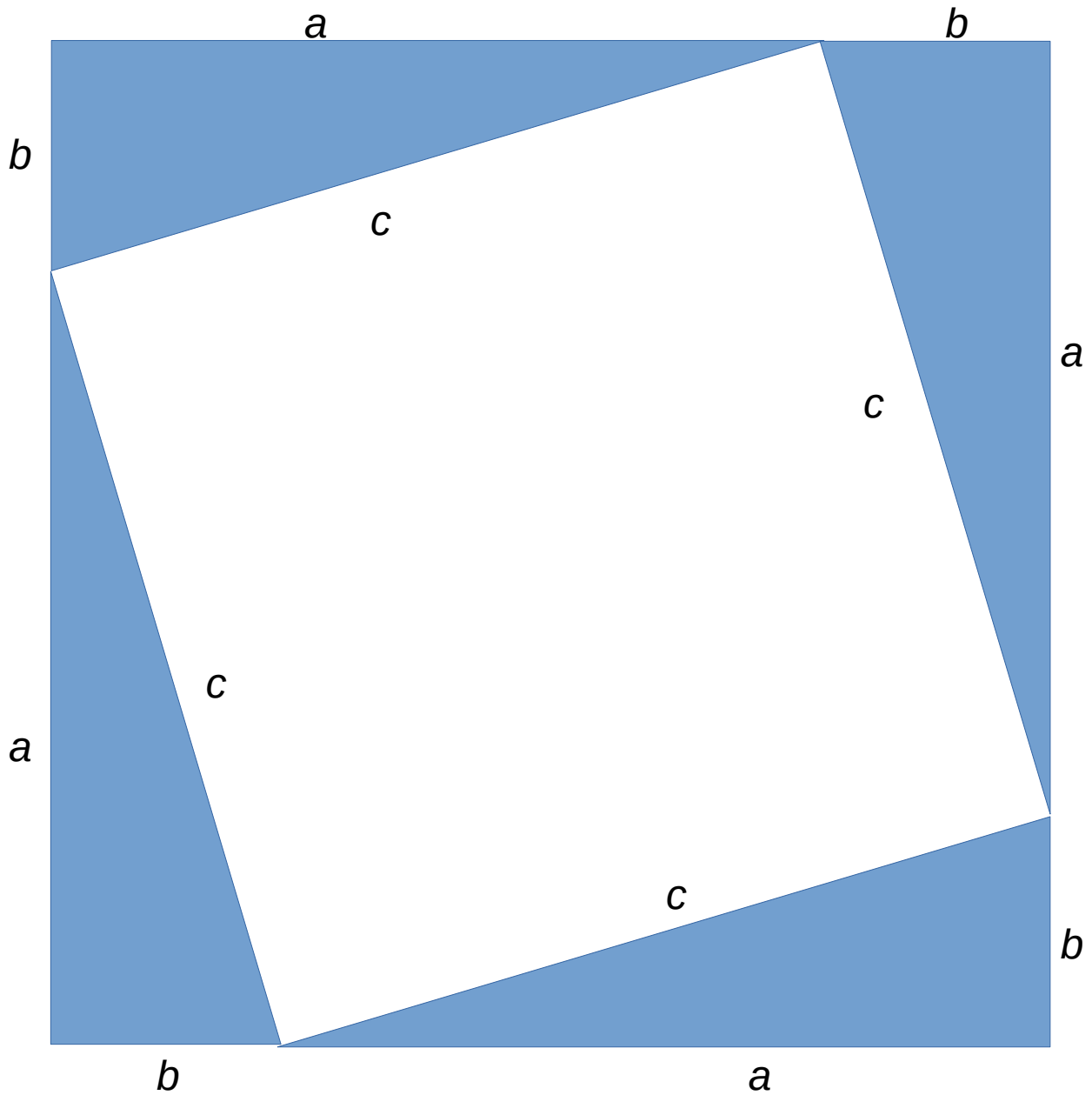
a

b

The area of the large square is equal to the area of the four right angled triangles plus the area of the small square

$$(a + b)^2 = c^2 + ab/2 \times 4$$

$$a^2 + b^2 + 2ab = c^2 + 2ab$$

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