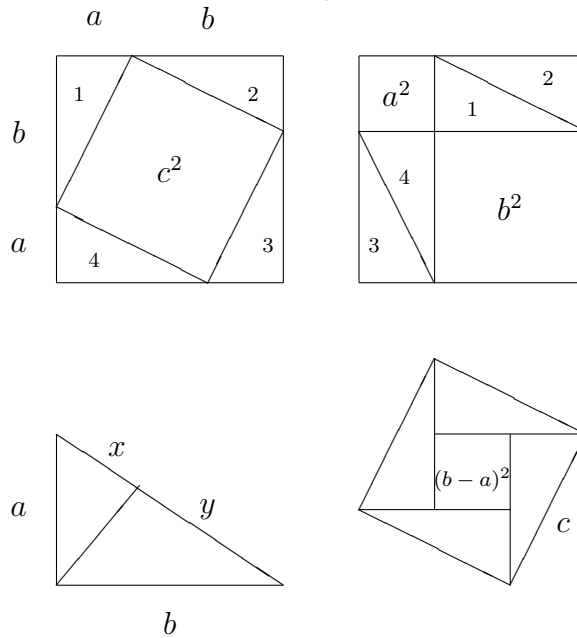


Pythagorus 500 BC

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



Four proofs of Pythagorus's Theorem

1. Popular Ureka proof - Consider the top two squares and remove the four triangles.

2. Use the figure on top left and some algebra:

$$(a + b)^2 = c^2 + 4\left(\frac{ab}{2}\right)$$

3, Use the figure on bottom right and some algebra. Middle square has side $b - a$ so

$$c^2 = (b - a)^2 + 4\left(\frac{ab}{2}\right)$$

4. This one is apparently in Euclid. Use the figure on the bottom left. Draw a perpendicular from the right angle to the hypotenuse splitting c into x plus y . The two inner triangles are similar to the big triangle. Using similar triangles write $a/c = x/a$ and $b/c = y/b$. Solving algebraically to get $c = x + y = a^2/c + b^2/c$.