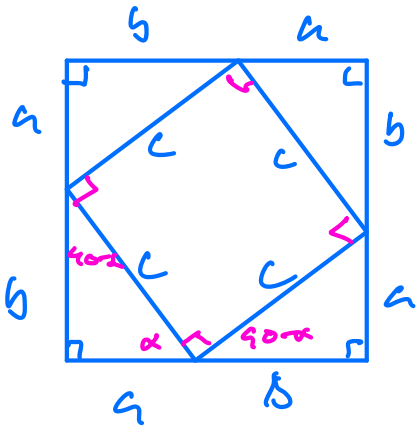
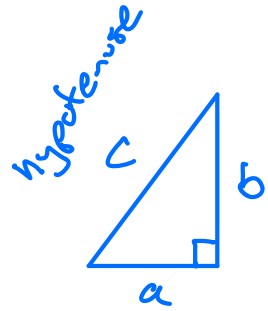
Pythagoras Theorem





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

Area of large square

$$= (a+b)(a+b)$$

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

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

Area is equal to 4 Δs + small square

$$= 4\left(\tfrac{1}{2}ab\right) + c^2$$

$$= 2ab + c^2$$

Shape can have only one area

$$\therefore \quad a^2 + b^2 + \cancel{2ab} = c^2 + \cancel{2ab}$$

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