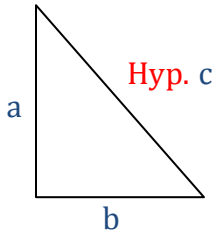
7.3 Pythagorean Theorem

Part B: Exploring the Pythagorean Relationship

The sum of the squares on side a and side b equals the square on side c.
Only applies to RIGHT triangles.

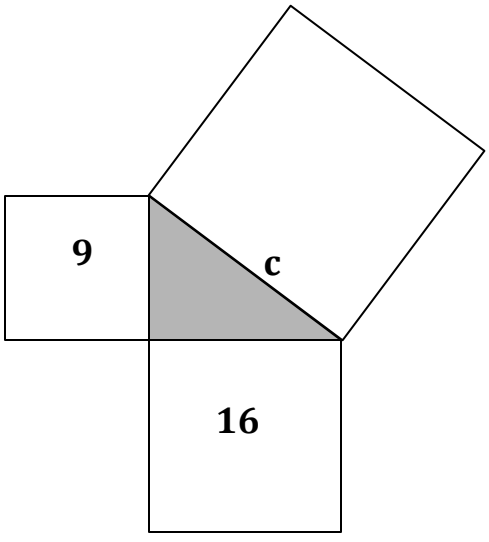
The two shorter sides that form the right angle.

Hypotenuse: The longest side of a right triangle. The side opposite the right angle.



Examples:

1. a) Find the area of the square on c.



9 + 16 = 25

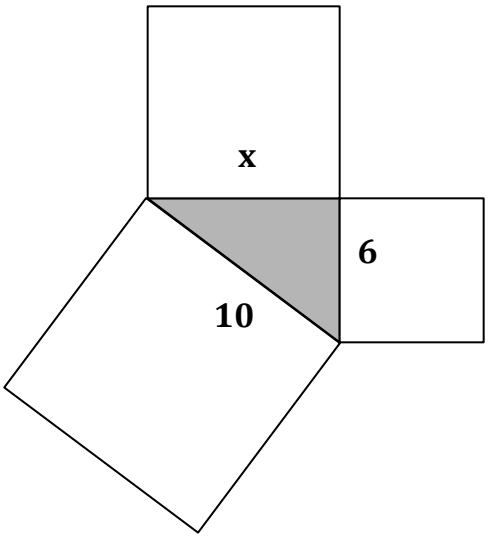
b) Find the length of side c.

S = $\sqrt{25}$ = 5

a) Write the relationship between the three sides of the triangle.

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

2. a) Find the area of the square on x.



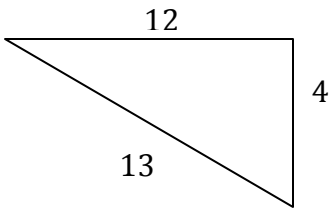
10 – 6 = 4

b) Find the length of side x.

S = $\sqrt{4}$ = 2

3. Is ΔABC a right triangle.

a)



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

$4^2 + 12^2 = 13^2$

16 + 144 = 169

160 ≠169

No, this is not a right triangle.

b) side lengths 9, 15, 12

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

$9^2 + 12^2 = 15^2$

81 + 144 = 225

225 = 225

Yes, this is a right triangle.

Part B: Assignment: p.92 #6ab, 8-12, 14, 15, 17, 21