

Today is: **Friday, September 2nd**

Lesson: **Unit 2 - Day 1** Pythagorean Theorem

Learning Targets:

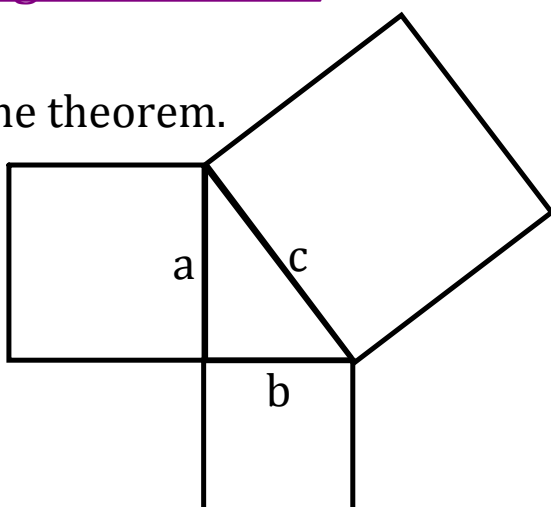
- I can state the Pythagorean theorem
- I can identify some samples of Pythagorean triples
- I can use algebra to solve for missing sides.

Assignment: **Day 1 Worksheet**

I. Stating the Theorem

Pythagorean Theorem

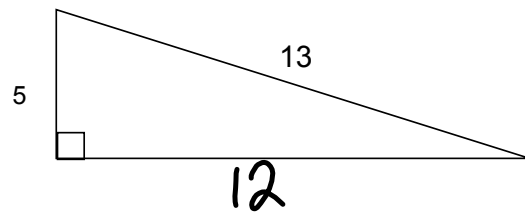
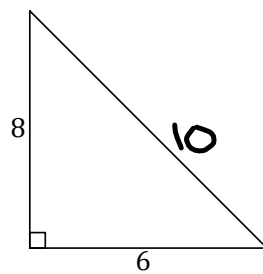
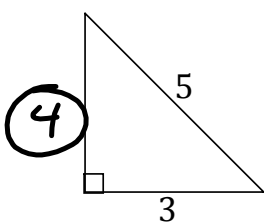
State the theorem.



Does it matter which sides are placed where in the formula?

II. Pythagorean Triples

- Pythagorean Triples are 3 numbers that will always form a right triangle
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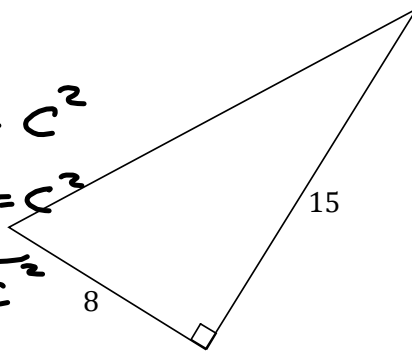


$$8^2 + 15^2 = c^2$$

$$64 + 225 = c^2$$

$$\sqrt{289} = \sqrt{c^2}$$

$$c = 17$$



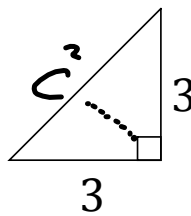
$$5^2 + ?^2 = 13^2$$

$$25 + b^2 = 169$$

$$\sqrt{b^2} = \sqrt{144}$$

$$b = 12$$

III. Sample Problems, Solving for x and missing side

a) 

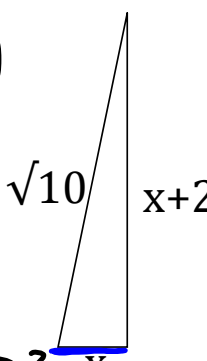
$$3^2 + 3^2 = c^2$$

$$9 + 9 = c^2$$

$$\sqrt{18} = \sqrt{c^2}$$

$$\sqrt{9} \sqrt{2} = c$$

$3\sqrt{2} = c$

b) 

$x = -3,1$

Only $x = 1$

$$\sqrt{10} = x^2 + (x+2)^2$$

$$10 = 2x^2 + 4x + 4$$

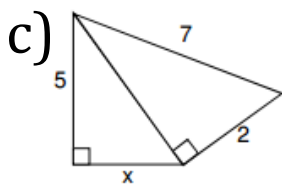
$$-10 \quad -10$$

$$0 = 2x^2 + 4x - 6$$

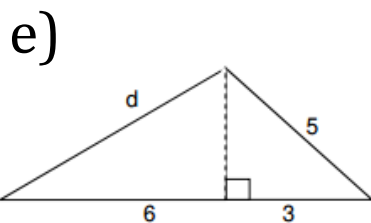
$$0 = x^2 + 2x - 3$$

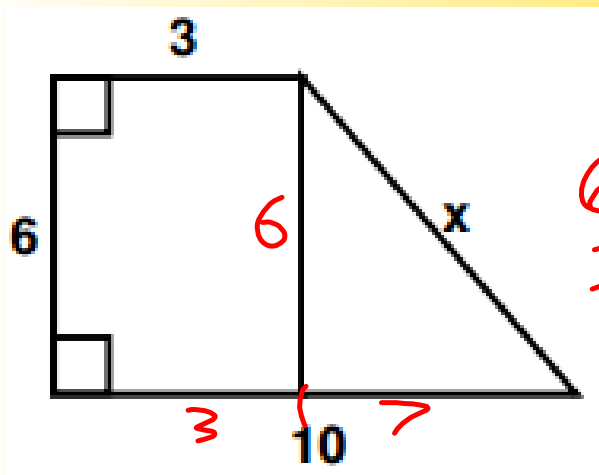
$$0 = (x+3)(x-1)$$

$x = -3,1$



d)





$$6^2 + 7^2 = c^2$$
$$36 + 49 = \sqrt{85}$$
$$\sqrt{5} \quad \sqrt{17}$$

$$x = \sqrt{85}$$

IV. Sample Problems, Solving for x and missing side

Find b if $a = 5$, $c = 10$

Find c if $a = 2$, $b = 2\sqrt{3}$

