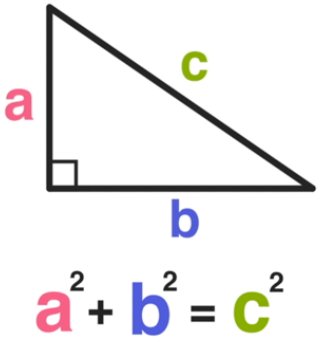
Name: _____

Lesson Guide

This lesson guide accompanies the following video lesson:



The Pythagorean Theorem

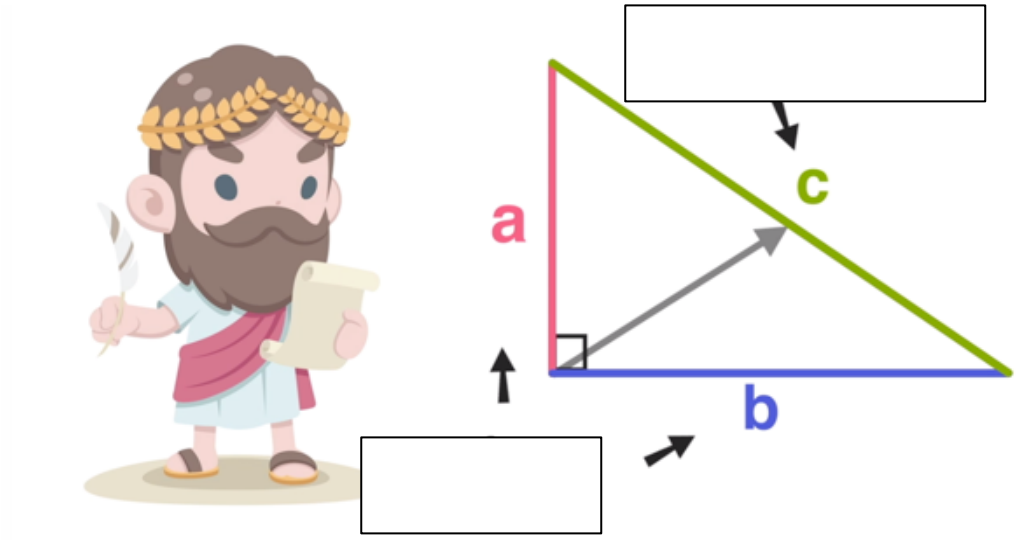
Key Questions

- **What is the Pythagorean Theorem?**
- **What are the properties of right triangles?**
- **How can you use the Pythagorean Theorem to solve problems?**

What is the Pythagorean Theorem?

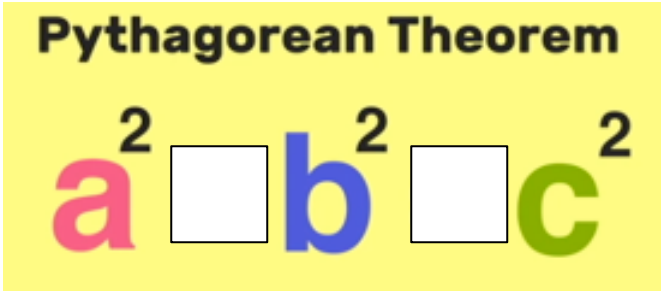
The Pythagorean Theorem is named after an ancicent Greek philosopher and mathematician named Pythagoras.

Pythagoras discovered that…



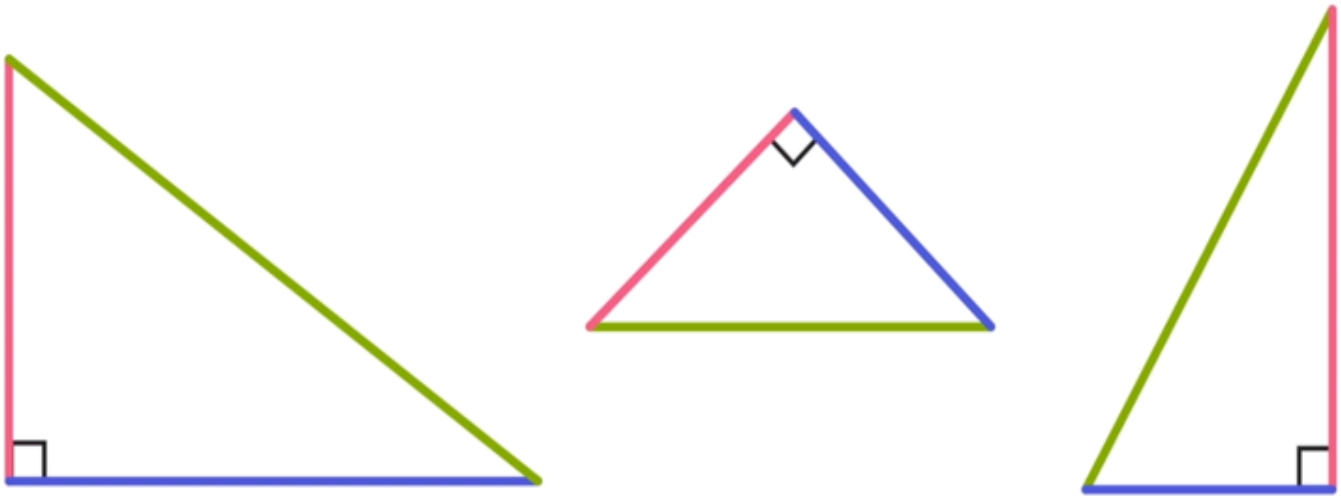
In any right triangle with legs *a* and *b*, and a hypotenuse of *c*, the following relationship is always true:

*The Pythagorean Theorem only applies to _____ triangles.



What are the properties of right triangles?

(label a, b, and c for each triangle)



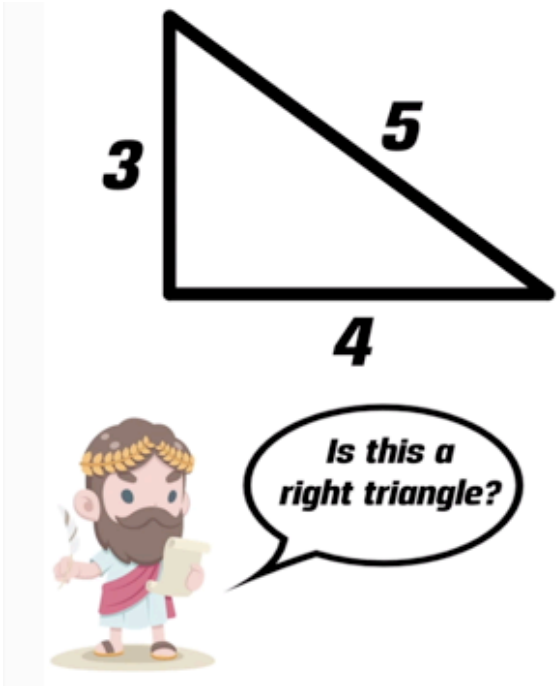
A right triangle has one right angle that is equal to _____ degrees.

The longest side of a right triangle is called the _____ and is always located _____ the right angle.

The two shorter sides of a right triangle that make up the right angle are called the _____.

Note that *a* and *b* are _____ and that *c* is always _____ the right angle.

How can you use the Pythagorean Theorem to solve problems?



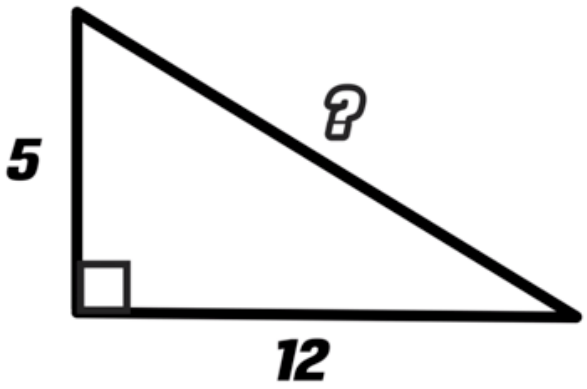
$$a^2 + b^2 = c^2$$

Conclusion:

The triangle above is a right triangle because….

Practice Problem #1

Find the missing length:

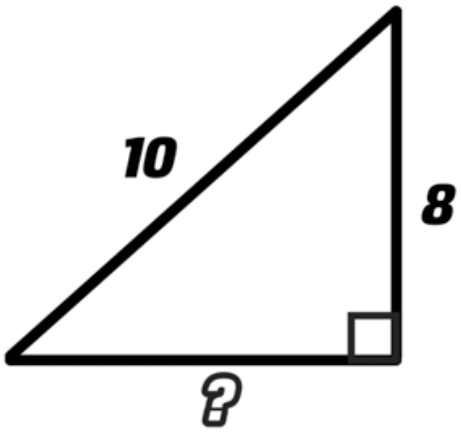


$$a^2 + b^2 = c^2$$

? = _____

Practice Problem #2

Find the missing length:

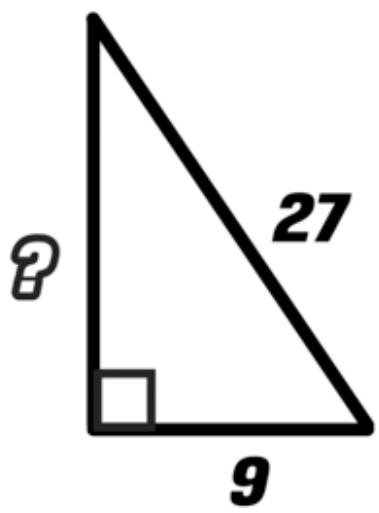


$$a^2 + b^2 = c^2$$

? = _____

Practice Problem #3

Find the missing length

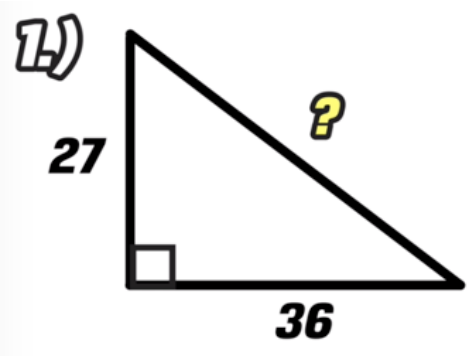


TRY ON YOUR OWN!

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

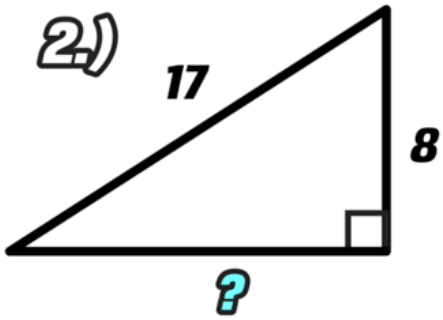
Find the missing lengths:

1.)



? = _____

2.)



? = _____

ANSWER KEY

Practice Problem #1: $c = 13$

Practice Problem #2: $b = 6$

Practice Problem #3: $a = 25.4558\ldots$

Try On Your Own:

1.) $c = 45$
2.) $a = 15$