Name:_____ Date:_____

Period:____ Mr. Valentino

Aim: What is the Pythagorean Theorem?

Do Now: Answer the following questions based on the video you are about to watch.

1. What is the Pythagorean Theorem?

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

2. What is the Pythagorean Theorem use for?

to find the missing sides of a right △

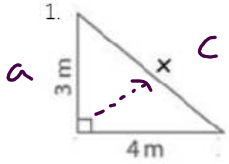
3. What kind of triangles can the Pythagorean Theorem be used for?

right △'s

$a^2+b^2=c^2$ pythagorean theorem a,b → legs c → hypotenuse

What is the length of x in simplest radical form?

1.



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

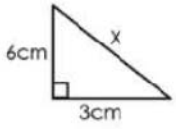
$3^2+4^2=c^2$

$9+16=c^2$

$\sqrt{25}=\sqrt{c^2}$

$5=c$

2.



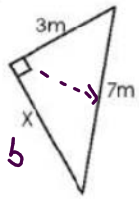
$\sqrt{45}=\sqrt{c^2}$

$\sqrt{45}=c$

$\sqrt{9}\sqrt{5}=c$

$3\sqrt{5}=c$

3.



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

$3^2+b^2=7^2$

$9+b^2=49$

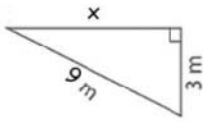
$-9 \quad -9$

$\sqrt{b^2}=\sqrt{40}$

$b=\sqrt{4}\cdot\sqrt{10}$

$2\sqrt{10}$

4.



$b^2=72$

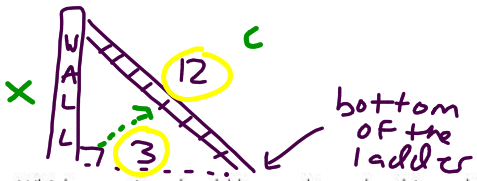
$b=\sqrt{72}$

$b=\sqrt{36}\sqrt{2}$

$b=6\sqrt{2}$

Practice!

The bottom of a ladder must be placed 3 feet from a wall. The ladder is 12 feet long. How far above the ground does the ladder touch the wall?



Which equation should be used to solve this problem?

1) $3^2 + 12^2 = x^2$

2) $3^2 + x^2 = 12^2$

3) $x^2 + 12^2 = 3^2$

4) $3 + x = 12$

Which set of numbers could be the lengths of the sides of a right triangle?

A) {12, 19, 30} B) {10, 24, 26} C) {3, 4, 6} D) {4, 7, 8}

$12^2+19^2=30^2$ $10^2+24^2=26^2$

$505 \neq 900$ $676 = 676$

✓

What we know about the Pythagorean Theorem:

1. It can be used to find...

2. It can be used to determine...

3. It will only work for...