Pythagorean Theorem Intro

Mental Floss - Fri, Aug 19th

Solve the equations below.
Leave your answers in radical form (square root, no decimals)

1.) $13^2 + x^2 = 25^2$

$-169 + x^2 = 625$
$-169 \quad -169$
$x^2 = 456$
$x = \sqrt{456}$ → DECIMAL, → LEAVE

2.) $\left(\sqrt{5}\right)^2 + x^2 = 12^2$

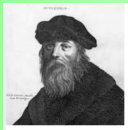
$5 + x^2 = 144$
$-5 \quad -5$
$x^2 = 139$
$x = \sqrt{139}$

Pythagorean Theorem

I can...

- Use the Pythagorean Theorem
- ~~Use the converse of the Pythagorean Theorem~~
- ~~Classify triangles~~

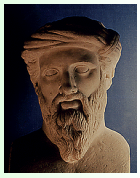
Who is Pythagoras?



Pythagoras

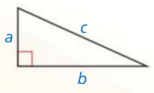
Pythagoras of Samos was an Ionian Greek philosopher, mathematician, and founder of the religious movement called Pythagoreanism.

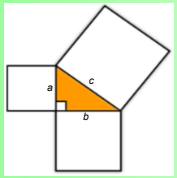
Born: 570 BC, Samos Island
Died: 495 BC, Metapontum
Full name: Pythagoras of Samos



Theorem 9.1 Pythagorean Theorem

In a right triangle, the square of the length of the hypotenuse is equal to the sum of the squares of the lengths of the legs.

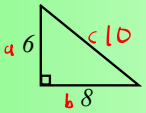




If right triangle, then $a^2 + b^2 = c^2$.

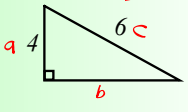
Do It Together - Example #1

Using the **Pythagorean Theorem**, determine the lengths of the missing sides of the right triangles below. Express your answer as a either a **whole number** or in **radical form**.



$6^2 + 8^2 = c^2$
$36 + 64 = c^2$
$100 = c^2$
$c = 10$

NOT $\sqrt{52}$

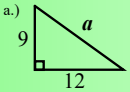


$4^2 + b^2 = 6^2$
$16 + b^2 = 36$
$b^2 = 20$
$b = \sqrt{20}$

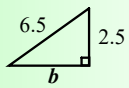
Do It In Your Groups - Example #2

Find the missing side lengths in the right triangles below.

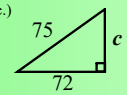
a.)



b.)



c.)



d.)