U8D1_T Pythagorean Theorem

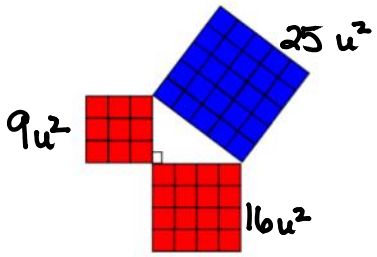
Friday, May 11, 2018 5:33 PM

U8D1_T Pythagor...

https://www.youtube.com/watch?v=PrjTkWGLk2Q

U8D1 MPM 1DI Unit 8: 2-D Measurement
Lesson 1: Pythagorean Theorem Review

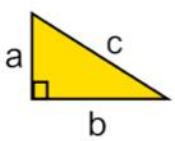
Exploring the Pythagorean Relationship



$9 + 16 = 25$

$16 = 25 - 9$

The Sum of the area of squares on the two shorter sides of a right angled triangle equals the area of the square on the third side, the hypotenuse.



OR

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

$b^2 = c^2 - a^2$

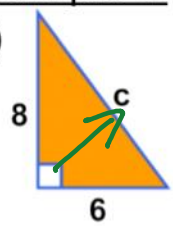
The Pythagorean Theorem can be used to find the length of the third side of a right triangle when the lengths of the other two sides are known.

U8D1 HW: Page 423 #1ac, 2ac, 3, 4ac, 5 – 8

Tiger Woods wants to play this par 3 hole by making it in one hit. How can he do that?

Example 1:

a)



$c^2 = 8^2 + 6^2$

$c^2 = 64 + 36$

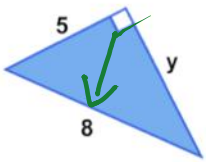
$c^2 = 100$

$\sqrt{c^2} = \pm\sqrt{100}$

$c = 10$ or -10 ✗

A negative side-length makes no sense.

b)



$y^2 = 8^2 - 5^2$

$y^2 = 64 - 25$

$y^2 = 39$

$y = \pm\sqrt{39}$

$\sqrt{}$ means take the 'principle' or 'positive' square root

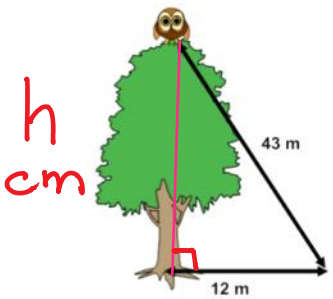
$y = 6.2$ or ~~-6.2~~

6.24499...

$\approx$ $\doteq$ $\simeq$

Example 2:

How far above the ground is Ollie the owl?



$h^2 = 43^2 - 12^2$

$h^2 = 1849 - 144$

$h^2 = 1705$

$h = \pm\sqrt{1705}$

$h \doteq 41.3$ OR -41.3

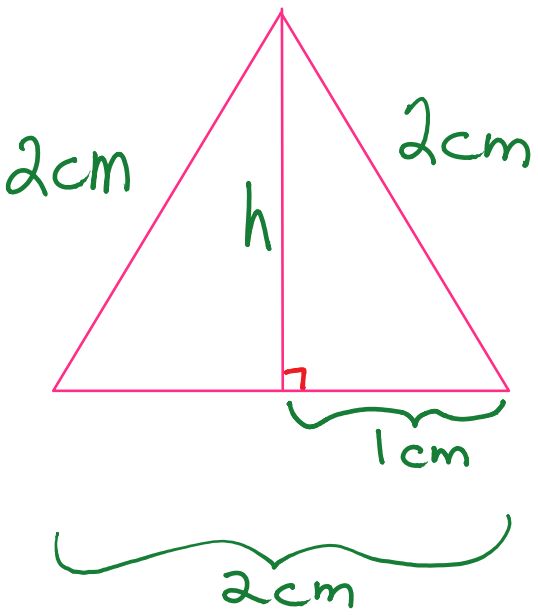
tens ones tenth

41.2 (1)

$\therefore$ Ollie is about 41.3 m above the ground.

Example 3:

Determine the height of an equilateral triangle with sides 2 cm long. Round your answer to one decimal place.



$h^2 = 2^2 - 1^2$

$h^2 = 4 - 1$

$\sqrt{h^2} = \pm\sqrt{3}$

$h \doteq 1.7$ OR -1.7

1.7 (3)

$\therefore$ the height of the triangle is about 1.7 cm.