3.2 Notes - Intro to the Pythagorean Theorem

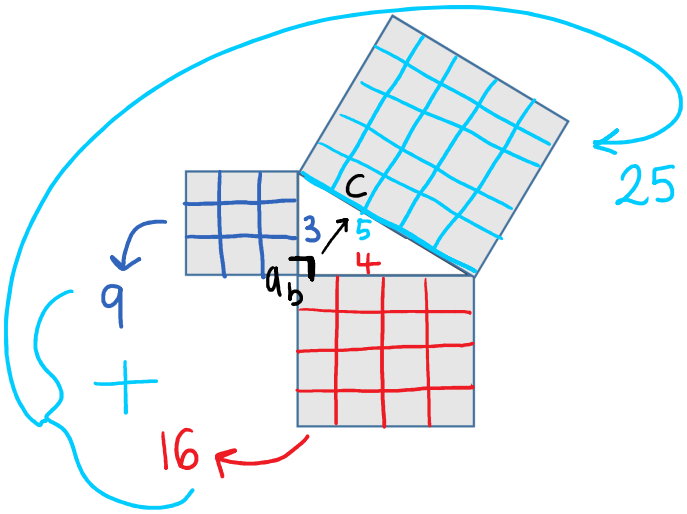
March 6, 2020 9:39 AM

Name: _____ Date: _____ Block: _____

Mrs. van der Vossen Math 8

3.2 Notes - The Pythagorean Theorem

*The 3 SQUARES make the RIGHT (90°) Angle Triangle



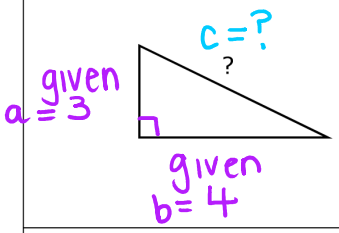
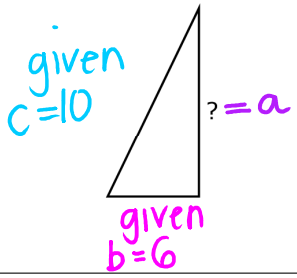
LEGS: Make 90° angle ∟
Always shorter than "other side". Labels a & b no order.
Sum (add) of a^2 and $b^2 = c^2$

HYPOTENUSE: "c"
area of c is equal to sum of legs area.
* is always Longest side
* always across from 90°

The general form used to find a missing side on a Right angle triangle is

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

, but we shorten it:

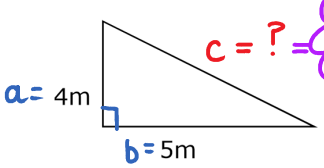
	When you want to find the hypotenuse $\mathbf{c} = \sqrt{a^2 + b^2}$ $\sqrt{3^2+4^2} = 5$ $\sqrt{(3^2+4^2)} =$
	When you want to find either Leg (call it a) $\mathbf{a} = \sqrt{c^2 - b^2}$ $\sqrt{10^2 - 6^2} = 8$

→ look at hundredth. If

look at hundredth. If 5 or more, tenth value gets +1.

Solve for the missing side in the following, to the nearest tenth.

$11.3\,7982 = 11.4$ (ignore; up)

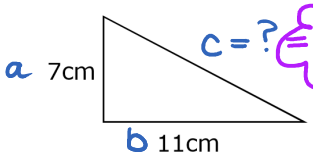


$c = ? = 6.4m$

$c = \sqrt{a^2 + b^2}$

$\sqrt{4^2 + 5^2}$

$\sqrt{41} \rightarrow 6.4\,03\ldots$ drop

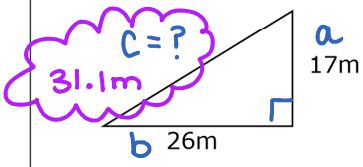


$c = ? = 13.0cm$

$c = \sqrt{a^2 + b^2}$

$\sqrt{7^2 + 11^2}$

$\sqrt{170} \rightarrow 13.0\,38\ldots$ leave. drop.



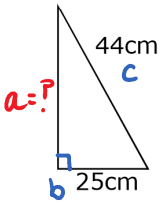
$c = ?$ $31.1m$

$c = \sqrt{a^2 + b^2}$

$\sqrt{17^2 + 26^2}$

$\sqrt{965} \rightarrow 31.0\,64\ldots$ up

31.1

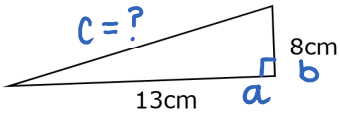


$a = \sqrt{c^2 - b^2}$

$\sqrt{44^2 - 25^2}$

$36.2\,07\ldots$ drop

$a = 36.2cm$

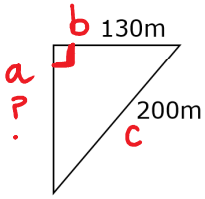


$c = \sqrt{a^2 + b^2}$

$\sqrt{13^2 + 8^2}$

$\sqrt{233} \rightarrow 15.2\,64\ldots$ tenth; up

$15.3cm$



$a = \sqrt{c^2 - b^2}$

$\sqrt{200^2 - 130^2}$

$\sqrt{23100}$

$10\sqrt{231}$

$151.9\,8\ldots$ up

152.0

$a = 152.0m$