Name __Key__ Date _____ Pd ___

9.1 – 9.3 Stations NOTES

This is your notes for these sections. 9 mins at each station. Watch videos, take notes, and complete the mini quiz. The mini quizzes add to a daily grade at the end of the period.

Station 1:

Word	Definition	Example
Pythagorean Triple:	3 whole #, positive integers that always create a Rt △	3,4,5 Station 2
Right Triangle:	One angle is Rt = 90° opp. the hyp. the other 2 ∡'s acute	4 5 3
Legs of a Right Triangle:	not the hyp. These create the Rt ∡	
Hypotenuse:	Always opp. the Rt ∡ of a △; c	
Isosceles Triangle:	At least 2 legs are ≅ or = in measure	
Geometric Mean:	the den. of 1st ration & num. of 2nd ration of a proportion $\frac{-}{x} = \frac{x}{-}$	
Altitude of a Triangle:	height of a △. segment from vertex to opp side ⊥	
Similar Figures:	≅ ∡'s proportionate sides	
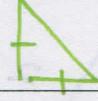
Station 2: 9.1 Pythagorean Theorem

Formula: $a^2 + b^2 = c^2$ When is the only time you can use this theorem? **Right Triangle**

$l_1^2 + l_2^2 = h^2$

$a^2 + b^2 < c^2$ $a^2 + b^2 > c^2$
obtuse △ acute △

main

List the triples:
^

3,4,5
5,12,13 } **and the multiples of these**
8,15,17
7,24,25

Station 3: 9.2 $45^\circ - 45^\circ - 90^\circ$ Triangles

Draw the original triangle and label it.

Choose your favorite method and write an example below!

leg	leg	hyp
1	1	$\sqrt{2}$

leg	leg	hyp
1	1	$\sqrt{2}$
x	x	$3\sqrt{2}$

$\dfrac{1}{x} = \dfrac{\sqrt{2}}{3\sqrt{2}}$ $\boxed{x = 3}$
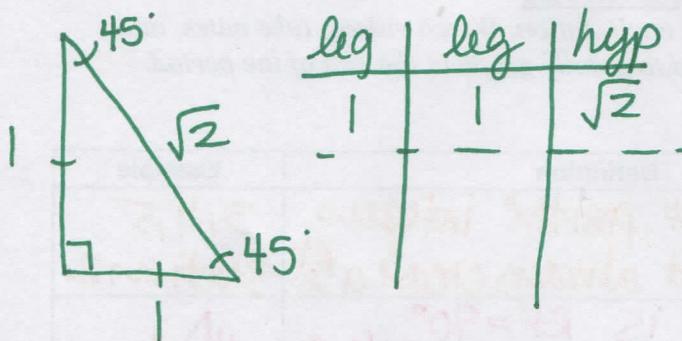
or **Pythagorean Thm**

$x^2 + x^2 = (3\sqrt{2})^2$

$\dfrac{2x^2}{2} = \dfrac{9 \cdot 2}{2} \Rightarrow \sqrt{x^2} = \sqrt{9} \Rightarrow \boxed{x = 3}$

Station 4: 9.2 $30^\circ - 60^\circ - 90^\circ$ Triangles

Draw the original triangle and label it.

Choose your favorite method and write an example below!

sl	ll	hyp
1	$\sqrt{3}$	2

sl	ll	hyp
1	$\sqrt{3}$	2
x	$10\sqrt{3}$	y

$\dfrac{1}{x} = \dfrac{\sqrt{3}}{10\sqrt{3}}$

$x\sqrt{3} = 10\sqrt{3}$

$\boxed{x = 10}$

$\dfrac{\sqrt{3}}{10\sqrt{3}} = \dfrac{2}{y}$

$y\sqrt{3} = 20\sqrt{3}$

$\boxed{y = 20}$
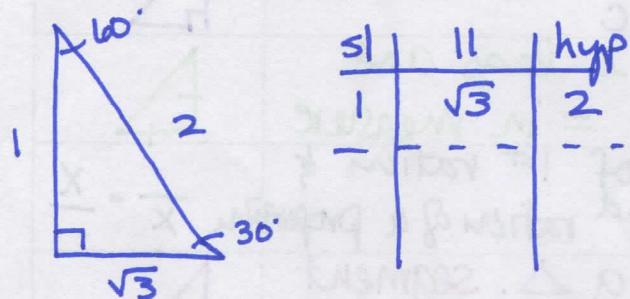
Station 5: 9.3 Similar Right Triangles

First theorem: **Altitude Thm**

Formula: $h^2 = x \cdot y$

Example:
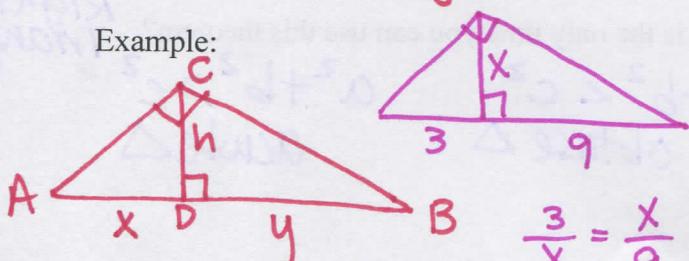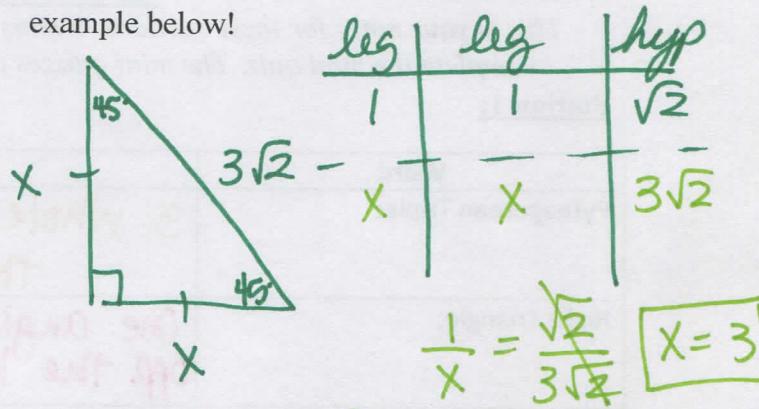
$\dfrac{3}{x} = \dfrac{x}{9}$

$x^2 = 27$
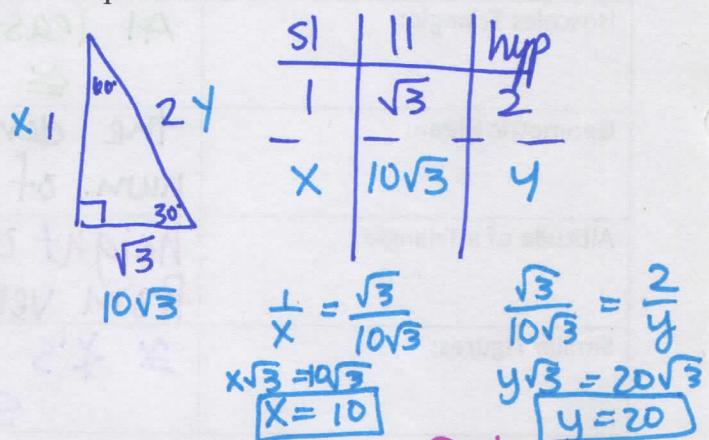
Second Theorem: **Leg Rule**

Formula: $a^2 = y \cdot c$ OR $b^2 = x \cdot c$

Example:

$\dfrac{3}{b} = \dfrac{b}{12}$
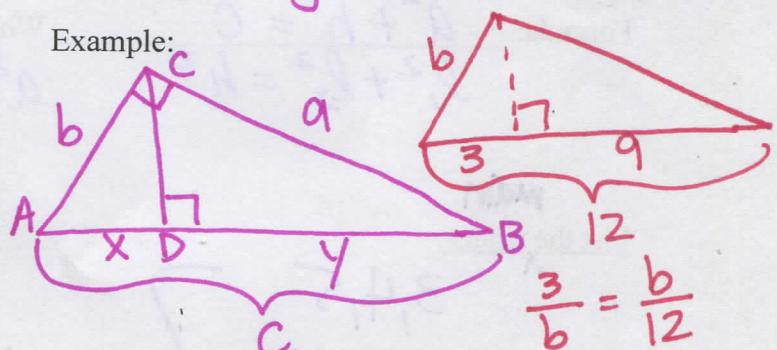
Pg. 468: 3, 7, 11 – 17(o), 21, 31, 44 – 47; pg. 475: 3, 7, 9, 11, 17, 27; pg. 482: 3, 5, 9, 11, 13, 19, 23, 27, 31, 46 - 49

$x = \sqrt{27}$

$= \sqrt{3 \cdot 9}$

$\boxed{x = 3\sqrt{3}}$

$b^2 = 36$

$\boxed{b = 6}$