Geometry 2: Trigonometry
Unit Review

Name _____

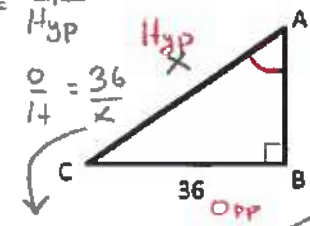
Period _____ Date _____

G.SRT.6 *Learning Target:* *Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute ratios.*

SOH CAH TOA

1) Given the following trig ratios, what is the length of *AC*?

SIN = Opp / Hyp



$\sin A = \frac{12}{13}$ O/H

$\cos A = \frac{5}{13}$

$\tan A = \frac{12}{5}$

SIN A = O/H = 36/x = 12/13

x = 39

Answer: AC = 39

2). Complete the following trig ratios for $\triangle ACB$

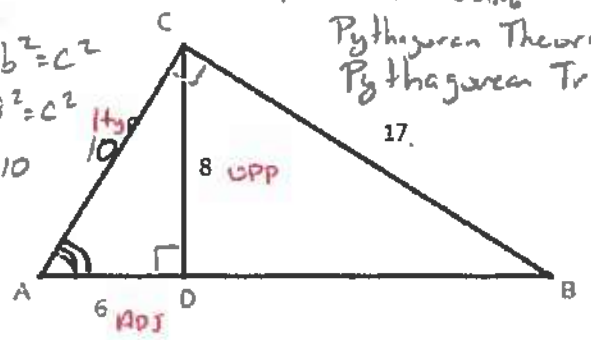
FIND AC

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

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

$c=10$

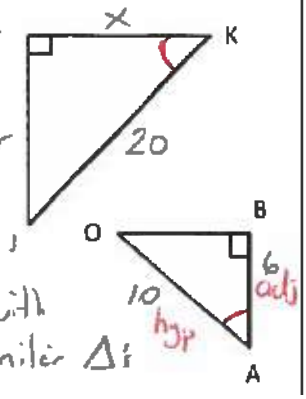
FIND AC USING Pythagorean Theorem or Pythagorean Triples



$\sin A = \frac{O}{H} = \frac{8}{10}$ $\cos A = \frac{A}{H} = \frac{6}{10}$ $\tan A = \frac{O}{A} = \frac{8}{6}$

SIN A = 4/5 COS A = 3/5 TAN A = 4/3

3) Given $\Delta ABO \sim \Delta KLJ$. If the cos $A = 0.6$ and JK $= 20$, what is the length of LK?



Sim. Δs
- SIDES ARE PROPORTIONAL
- ANGLES ARE CONGRUENT

COS A = .6 = 6/10 = Adj/Hyp

∠A ≅ ∠K

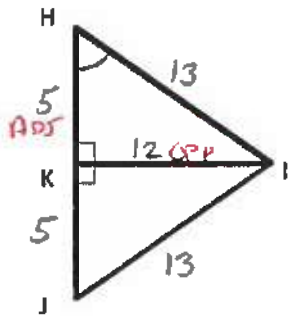
Set up a proportion with the similar Δs

Answer: LK = 12

6/10 = x/20

x = 12

4) Darren started with a 5-12-13 right triangle ($\triangle HKJ$) and then reflected it horizontally to get a congruent triangle, $\triangle JKI$. The length of $\overline{HK}$ is 5 cm.



Then, Darren claimed the following:

- Since HK is 5 cm, then JK is also 5 cm. (OK) and KI is 12 cm.
- Using the Pythagorean Theorem, the length (OK) of HI and JI is 13 cm.
- The length of HJ is 10 cm. (OK)
- Therefore, tan ($\angle IHK$) = $\frac{5}{12} = 0.42$ (rounded) TAN(∠H) = O/A = 12/5

Sadly, Darren went wrong somewhere in his assumptions. Find his mistake and correct it.

The mistake is in the last bullet. He did not set TAN (H) up as Opp over adj. He did adj over opp.