

Good morning: no warm up, we'll randomize and start learning about trig and right triangles :)

Reminders/Announcements

- First Q3 assessment: Monday
- Tutoring today 4-5p
- Tech/eLab club Thursday 4-530p

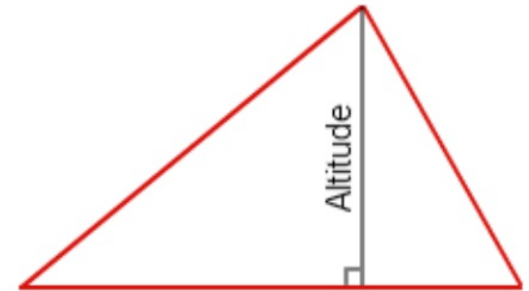
Similarity Within Right Triangles

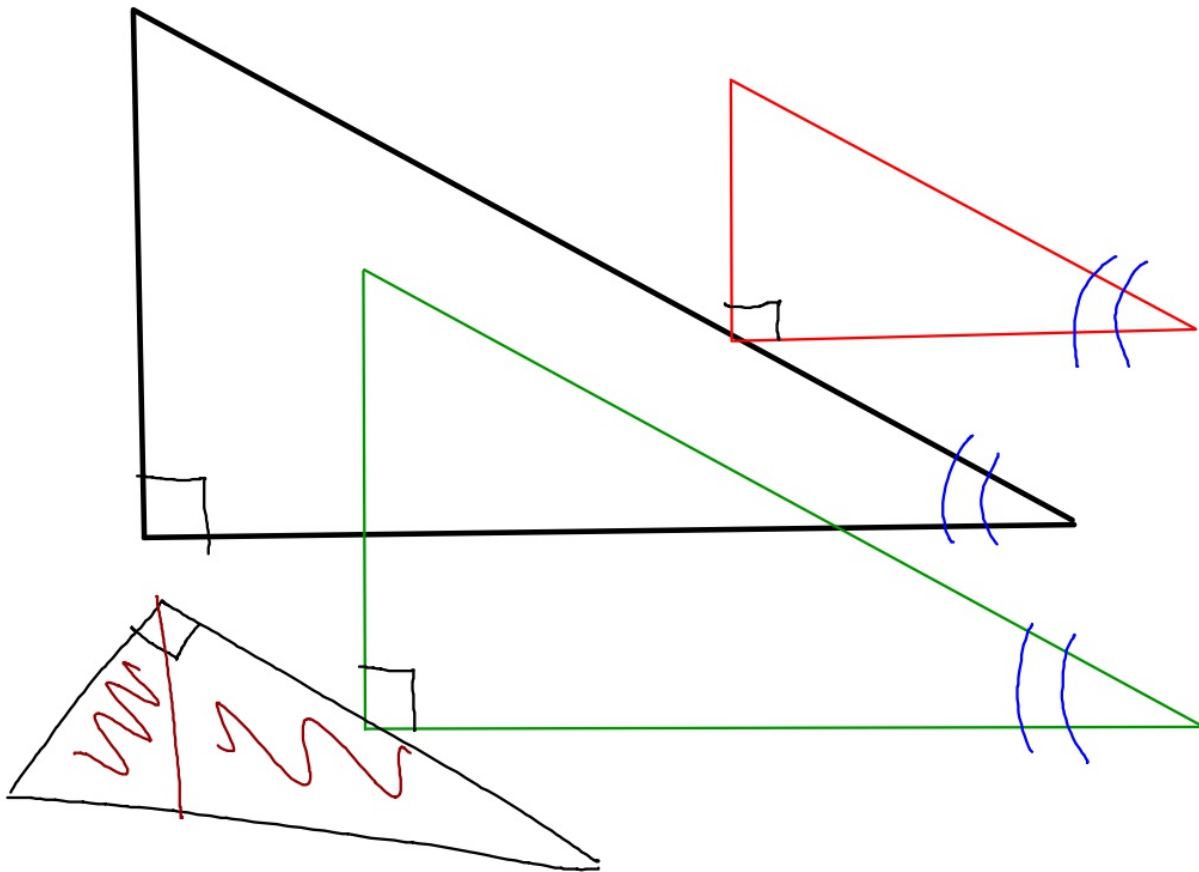
1. Create 2 congruent right triangles using all of the construction paper.

2. Using one of the triangles, fold to create an altitude that connects the right angle to the hypotenuse. Think about how you know its an altitude.

3. Cut along this altitude. You should now have 3 triangles.

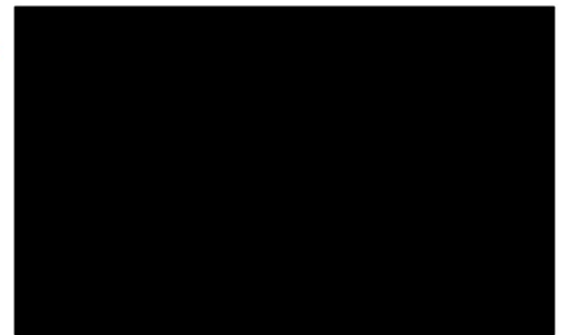
4. Play around with the 3 triangles and make a conjecture about their relationship. Can you prove anything about them?



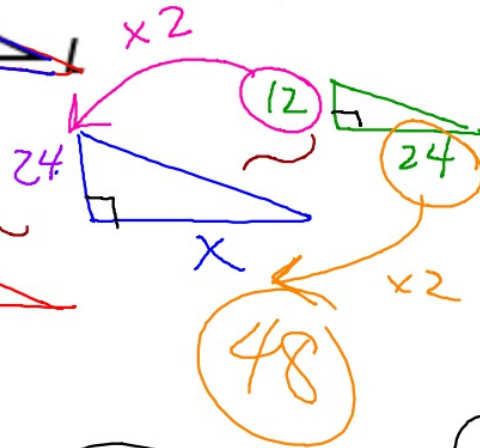
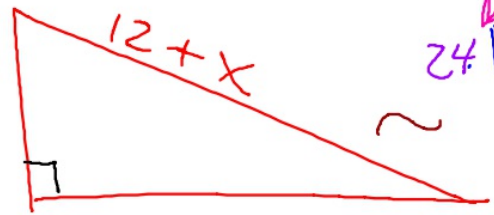
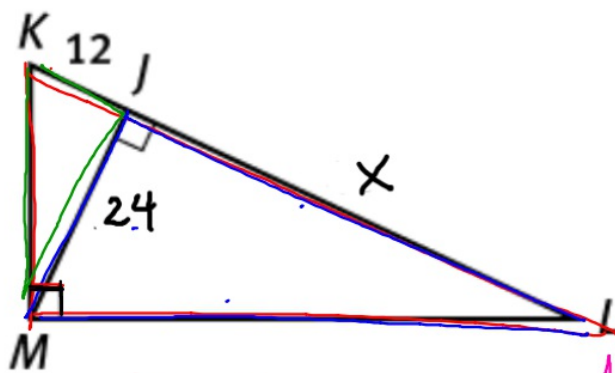


They're all similar to each other!

AA~

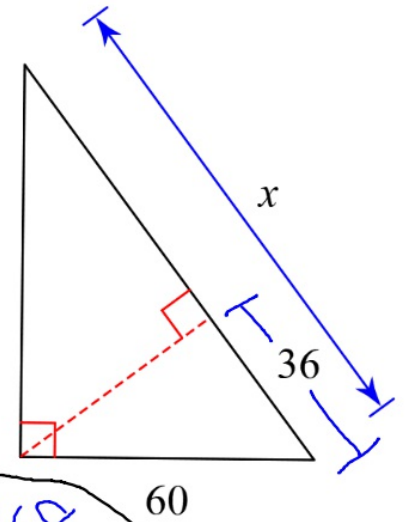


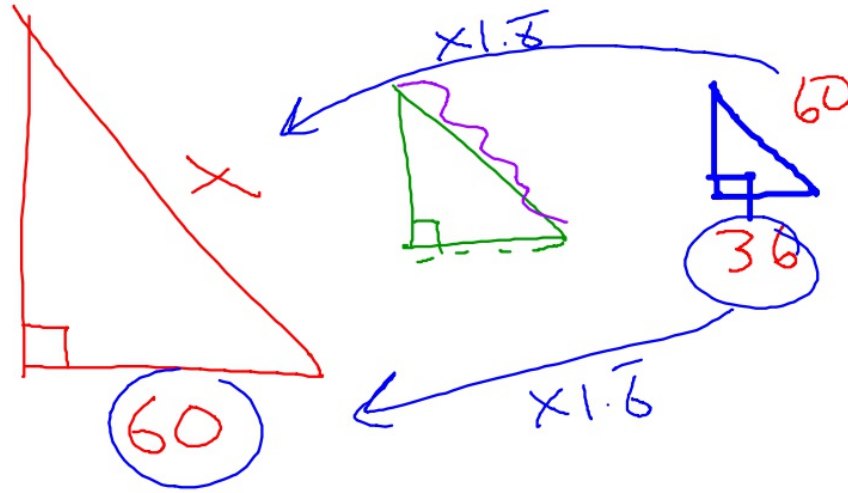
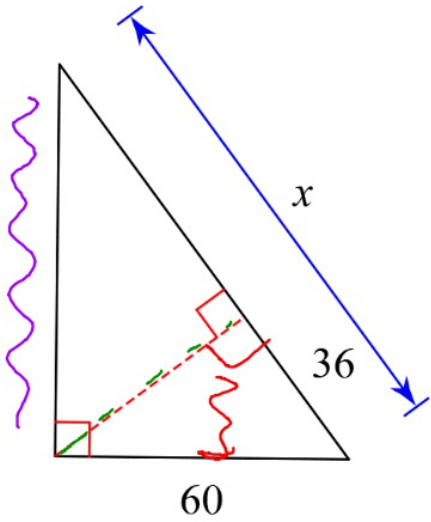
Find the value of x in each



$$\frac{12}{24} = \frac{24}{x}$$

$x = 48$



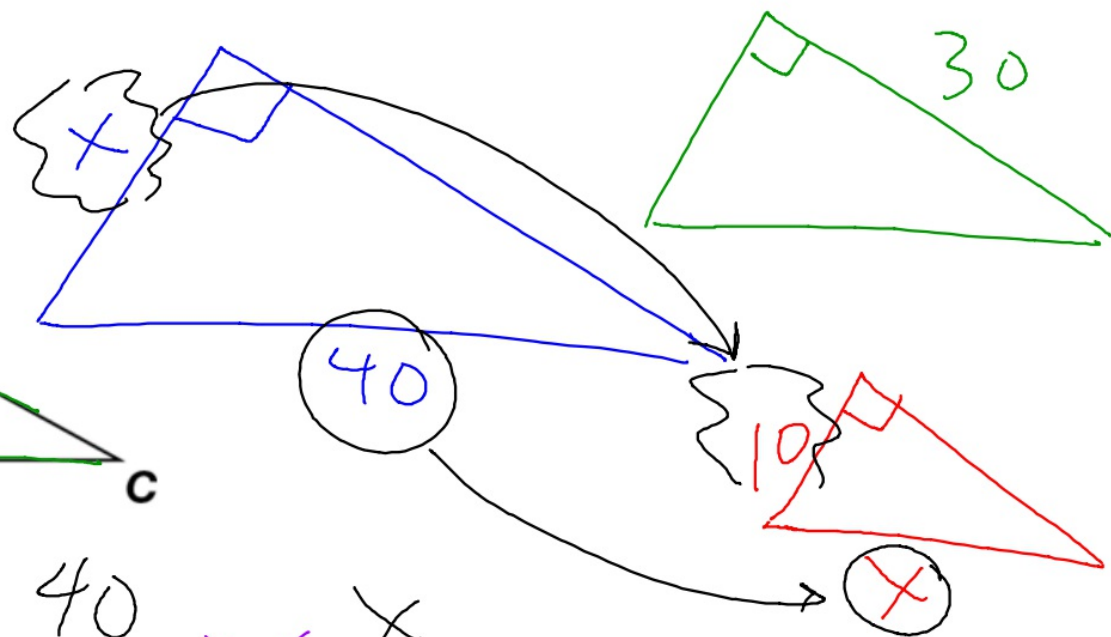
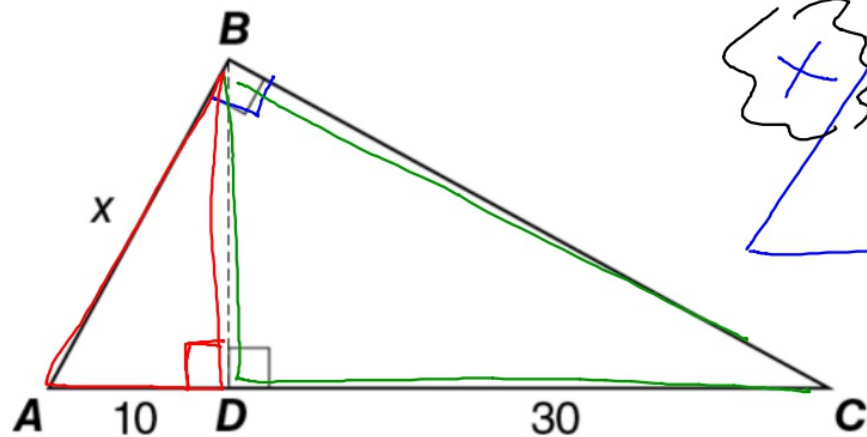


$$\begin{array}{r} 60 \\ \times 1.6 \\ \hline \end{array}$$

100

$$\frac{60}{36} = 1.6$$

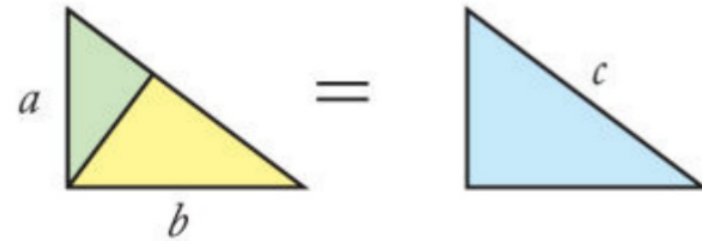
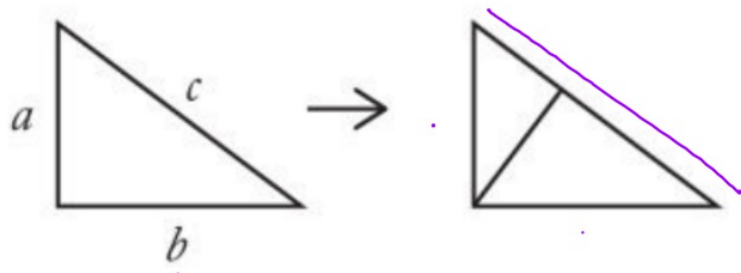
Scale



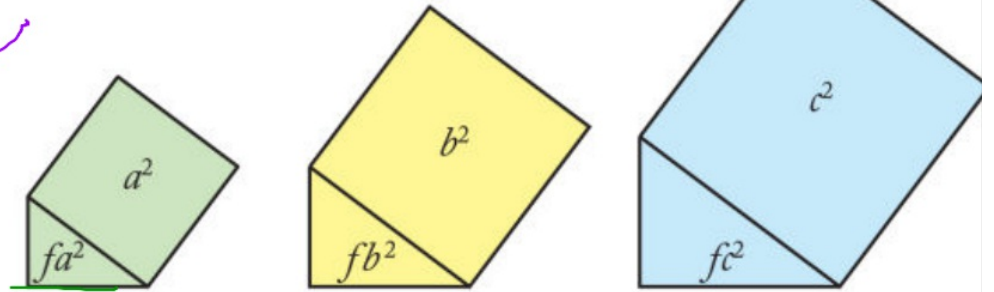
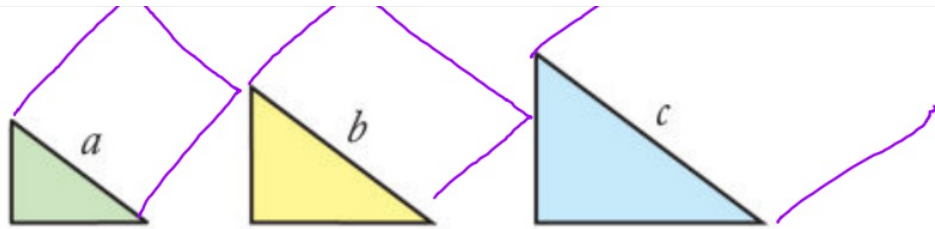
$$\frac{40}{x} \neq \frac{x}{10} \rightarrow 400 = x^2$$

$$(20 = x)$$

Einstein's Childhood Proof of the Pythagorean Theorem

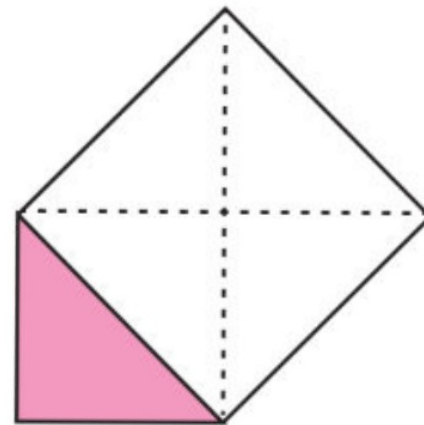


$$A_{\text{green}} + A_{\text{yellow}} = A_{\text{blue}}$$



$$\cancel{fa^2} + \cancel{fb^2} = \cancel{fc^2}$$

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



Share with your face partner something you have learned so far today

Trigonometry!!!!

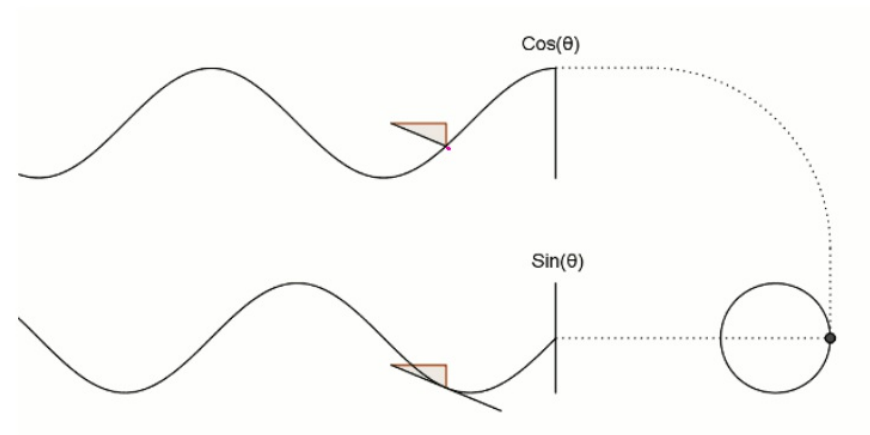
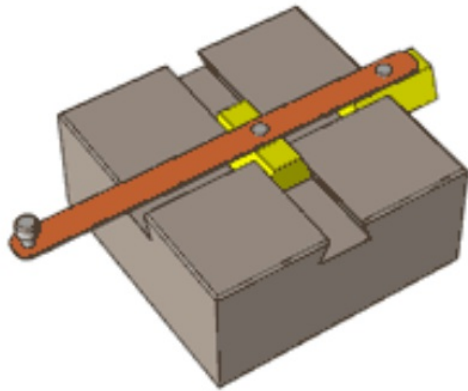




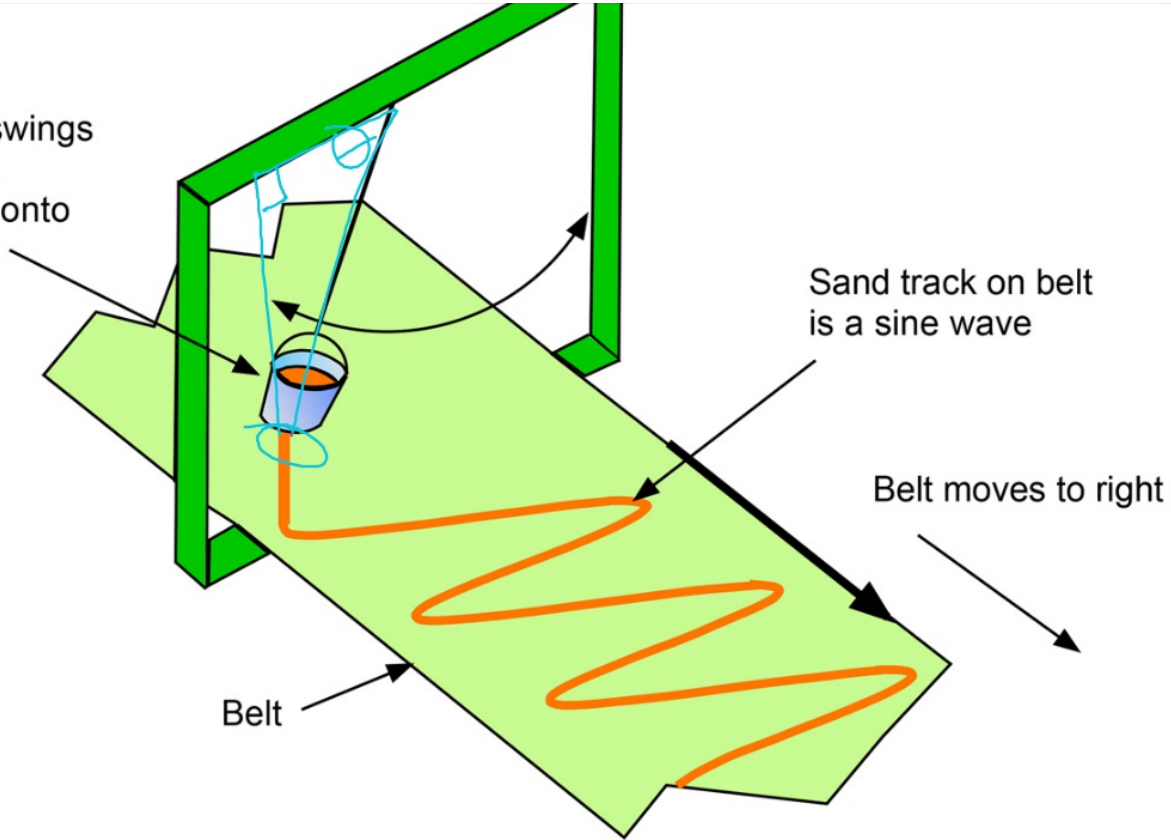
<https://www.youtube.com/watch?v=vmU7XKdt3w>

Triangles.....

Waves??



Leaky bucket swings
back and forth,
dribbling sand onto
belt



https://www.youtube.com/watch?v=EBzIZZJQ-_Y

https://www.youtube.com/watch?v=P-Umre5Np_0

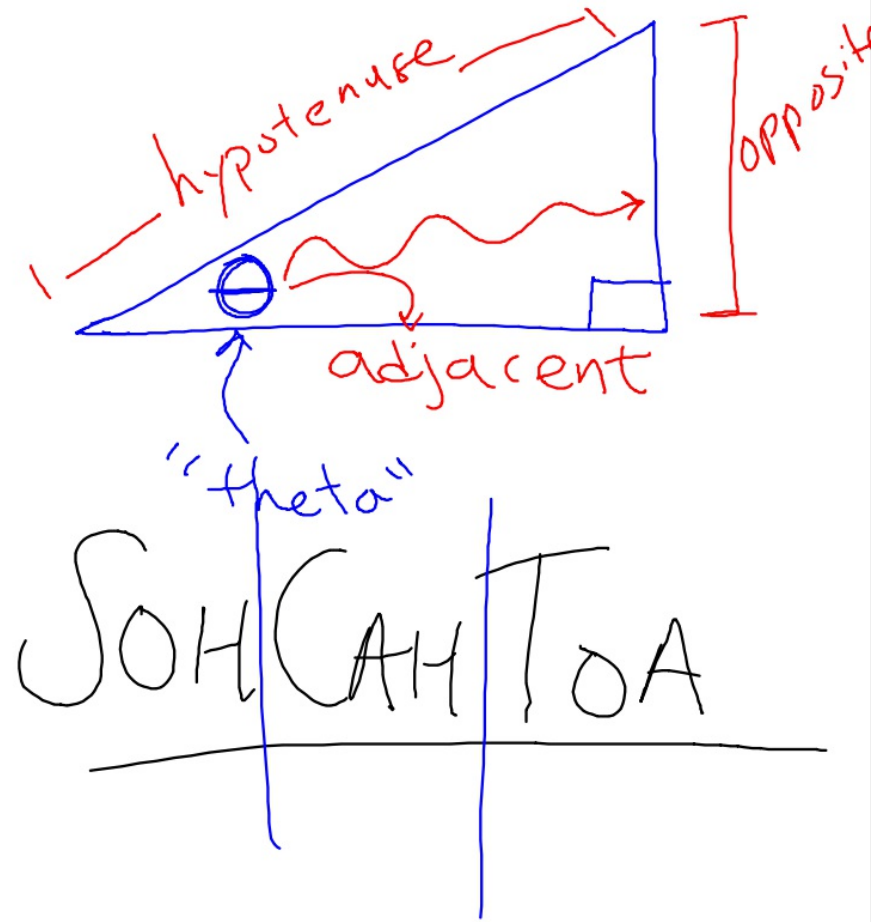
<https://www.youtube.com/watch?v=Q55T6LeTvs>

The 3 primary trig ratios

$$\underline{\text{Sine}} = \frac{\text{opposite}}{\text{hypotenuse}}$$

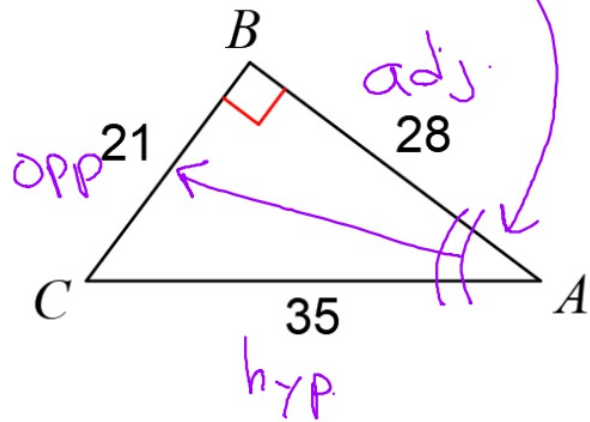
$$\underline{\text{Cosine}} = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\underline{\text{Tangent}} = \frac{\text{opposite}}{\text{adjacent}}$$



SohCahToa

Find $\tan A$

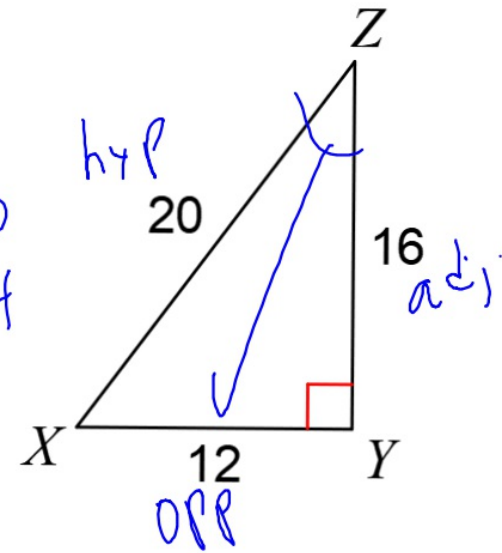


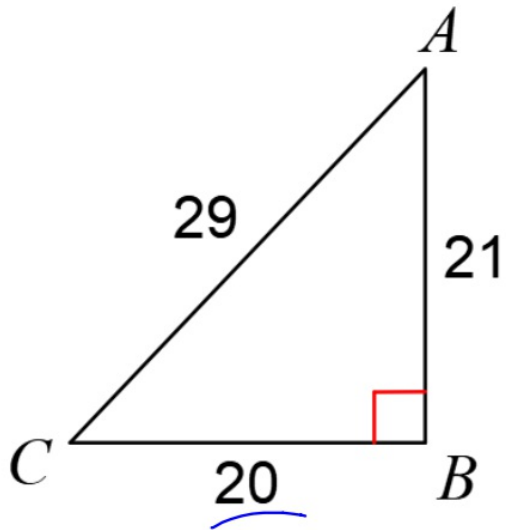
$$\tan = \frac{\text{opp}}{\text{adj}} = \frac{21}{28} \xrightarrow{\div 7} \frac{3}{4}$$

Find $\cos Z$
SOH CAH TOA

$$\frac{\text{ADJ}}{\text{HYP}} \Rightarrow \frac{16}{20}$$

$$\frac{4}{5} \xrightarrow{\div 4}$$





Write two trig ratios that equal 20/29

~~or~~ $\sin B$

$\cos C$

$\sin A$

HW

handout #1-12