

Essential Question:

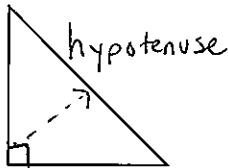
How can I find the sine, cosine, and tangent for an angle of a right triangle?

NOTES

Trigonometry means triangle measurement

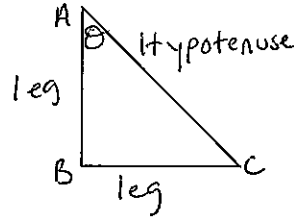
Vocabulary:

Hypotenuse



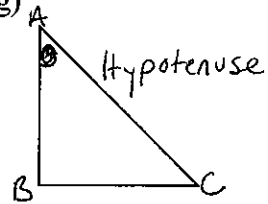
Opposite Side (Leg)

$$\frac{BC}{AC}$$

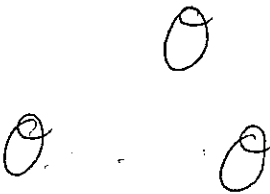


Adjacent Side (Leg)

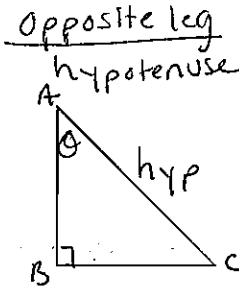
$$\frac{AB}{AC}$$



Theta

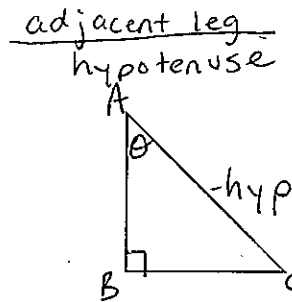


Sine
"Sin"
 $\sin \theta = \frac{BC}{AC}$



Cosine

"cos"
 $\cos \theta = \frac{AB}{AC}$

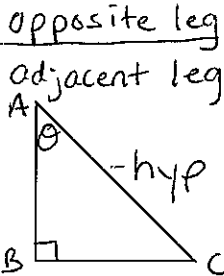


1st find the hyp.

Missing angle

Tangent
"Tan"

$$\tan \theta = \frac{BC}{AB}$$



SOH CAH TOA

$$SOH = \sin = \frac{\text{Opposite}}{\text{Hypotenuse}}$$

$$CAH = \cos = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$TOA = \tan = \frac{\text{opposite}}{\text{adjacent}}$$

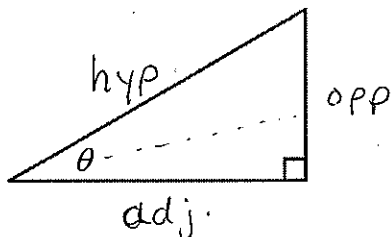
SOH CAH TOA

Example A:

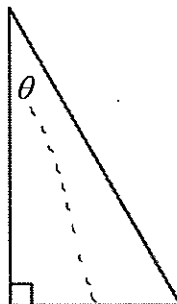
-label on board

Identify the side **opposite** to θ (theta), the side **adjacent** to θ , and the **hypotenuse** of each triangle.

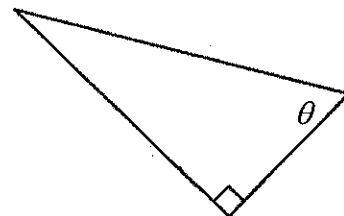
1.



2.

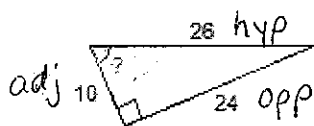


3.



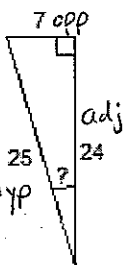
SOH CAH TOA

4.



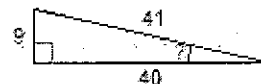
$$\begin{aligned} \sin \theta &= \frac{24}{26} = \frac{12}{13} \\ \cos \theta &= \frac{10}{26} = \frac{5}{13} \\ \tan \theta &= \frac{24}{10} = \frac{12}{5} \end{aligned}$$

5.



$$\begin{aligned} \sin \theta &= \frac{7}{25} \\ \cos \theta &= \frac{24}{25} \\ \tan \theta &= \frac{7}{24} \end{aligned}$$

6.



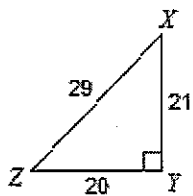
$$\begin{aligned} \sin \theta &= \\ \cos \theta &= \\ \tan \theta &= \end{aligned}$$

Example B:

Find the value of each trigonometric ratio.

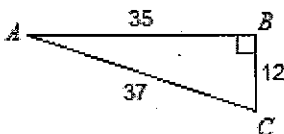
SOH CAH TOA

7.



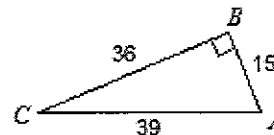
$$\begin{aligned} \sin X &= \frac{20}{29} \\ \cos X &= \frac{21}{29} \\ \tan X &= \frac{20}{21} \end{aligned}$$

8.



$$\begin{aligned} \sin C &= \underline{\hspace{2cm}} \\ \cos C &= \underline{\hspace{2cm}} \\ \tan C &= \underline{\hspace{2cm}} \end{aligned}$$

9.



$$\begin{aligned} \sin A &= \underline{\hspace{2cm}} \\ \cos C &= \underline{\hspace{2cm}} \\ \tan C &= \underline{\hspace{2cm}} \end{aligned}$$