

Yes the EOI is over!
 Yes you are still going to learn!



Trig Functions

5-9-16

Trigonometric ratio- a ratio of the lengths of two sides of a right triangle.

- Sine – abbreviated as sin
- Cosine – abbreviated as cos
- Tangent – abbreviated as tan

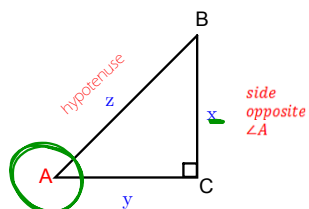


$$\sin \theta = \frac{\text{side opposite of the angle}}{\text{hypotenuse}}$$

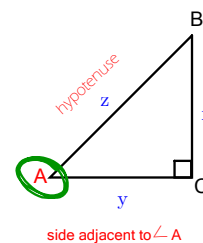
$$\cos \theta = \frac{\text{side adjacent to the angle}}{\text{hypotenuse}}$$

next to or connected to

$$\sin \angle A = \frac{x}{z}$$

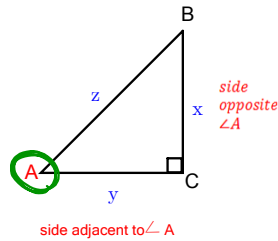


$$\cos \angle A = \frac{y}{z}$$



$$\tan \angle \theta = \frac{\text{side opposite of the angle}}{\text{side adjacent to the angle}}$$

$$\tan \angle A = \frac{x}{y}$$



SOH CAH TOA

Sine: Opposite/Hypotenuse Cosine: Adjacent/Hypotenuse Tangent: Opposite/Adjacent

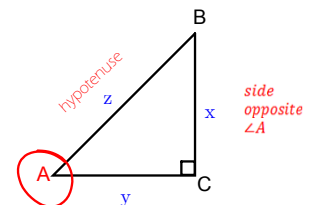
Some Old Hippie-
Caught Another Hippie
Trippin on Acid

Now the reciprocals...

- Cosecant – abbreviated as $\csc = \frac{1}{\sin} = \frac{\text{Hyp}}{\text{opp}}$
(reciprocal to sine)
- Secant – abbreviated as $\sec = \frac{1}{\cos} = \frac{\text{Hyp}}{\text{Adj}}$
(reciprocal to cosine)
- Cotangent – abbreviated as $\cot = \frac{1}{\tan} = \frac{\text{Adj}}{\text{opp}}$
(reciprocal to tangent)

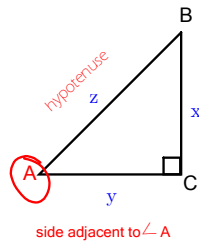
$$\csc \angle \theta = \frac{\text{hypotenuse}}{\text{side opposite of the angle}}$$

$$\csc \angle A = \frac{z}{x}$$



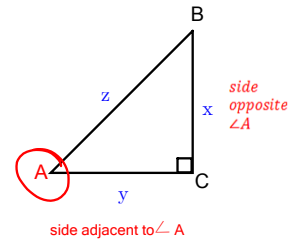
$$\sec \angle \theta = \frac{\text{hypotenuse}}{\text{side adjacent to the angle}}$$

$$\sec \angle A = \frac{2}{1} \quad \frac{1}{\cos}$$



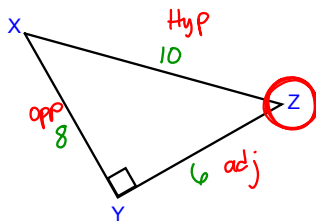
$$\cot \angle \theta = \frac{\text{side adjacent to the angle}}{\text{side opposite of the angle}}$$

$$\cot \angle A = \frac{1}{\tan} = \frac{y}{x}$$



Find all 6 trig functions for the given triangle.

$$\begin{aligned} \sin Z &= \frac{8}{10} = \frac{4}{5} & \csc Z &= \frac{5}{4} \\ \cos Z &= \frac{6}{10} = \frac{3}{5} & \sec Z &= \frac{5}{3} \\ \tan Z &= \frac{8}{6} = \frac{4}{3} & \cot Z &= \frac{3}{4} \end{aligned}$$



Conclusion...

1. What is the reciprocal of $\cos \theta$? $\sec \theta$
2. How many trig functions are there? 6
3. Can you use the trig function on any triangle? NO must be Rt. Δ
4. Questions???

Assignment:
Trig Functions WS