

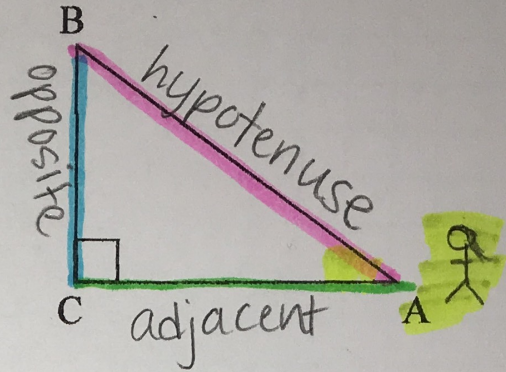
Right Triangle Trigonometry

In RIGHT triangle ABC, suppose you are standing at $\angle A$.

The longest side, opposite the right angle, is called the hypotenuse.

The leg nearest you is called the adjacent leg.

The leg farthest away is called the opposite leg.



Certain ratios of sides of right triangles are given *specific* names.

$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}}$$

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

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

Most people just remember one thing...

SohCahToa

$$\sin \angle = \frac{\text{opp}}{\text{hyp}} \quad \cos \angle = \frac{\text{adj}}{\text{hyp}} \quad \rightarrow \tan \angle = \frac{\text{opp}}{\text{adj}}$$

Examples: Solve for x.

1) $\sin 31^\circ = \frac{x}{10}$
 $x = 10(\sin 31^\circ)$
 $x \approx 5.15u$

2) $\cos 40^\circ = \frac{x}{27}$
 $x = 27(\cos 40^\circ)$
 $x \approx 20.68m$

3) $\tan 26^\circ = \frac{x}{4}$
 $x = 4(\tan 26^\circ)$
 $x \approx 1.95''$

4) $\cos 37^\circ = \frac{500}{x}$
 $\frac{x(\cos 37^\circ)}{\cos 37^\circ} = \frac{500}{\cos 37^\circ}$
 $x = \frac{500}{\cos 37^\circ}$
 $x \approx 626.07 \text{ Km}$