

For angle A , find the ratio of the opposite leg to the hypotenuse.

$$\frac{\text{Opposite}}{\text{Hypotenuse}} = \frac{3}{5}$$

Find the same ratio for angle B .

$$\frac{\text{opp}}{\text{hyp}} = \frac{5}{13}$$

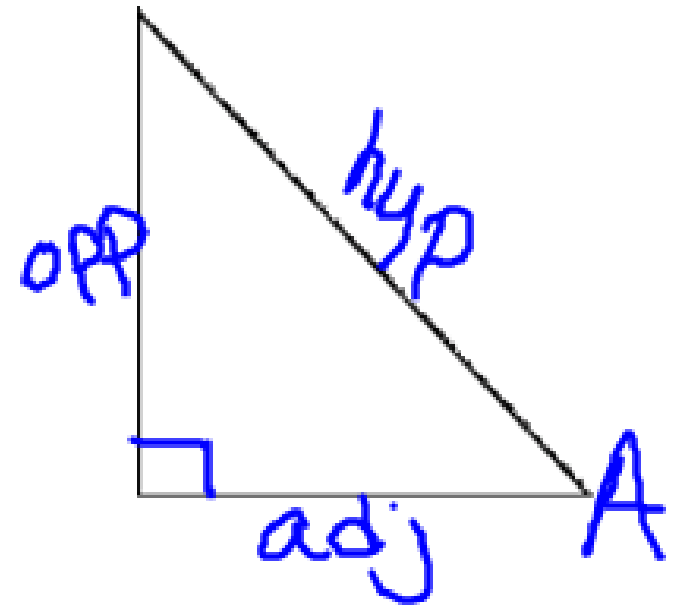
The ratio of the lengths of any 2 sides of a right triangle is a trigonometric ratio.

There are three main trigonometric ratios.

$$\text{(sin) Sine} = \frac{\text{leg opposite to the angle}}{\text{hypotenuse}}$$

$$\text{(cos) Cosine} = \frac{\text{leg adjacent to the angle}}{\text{hypotenuse}}$$

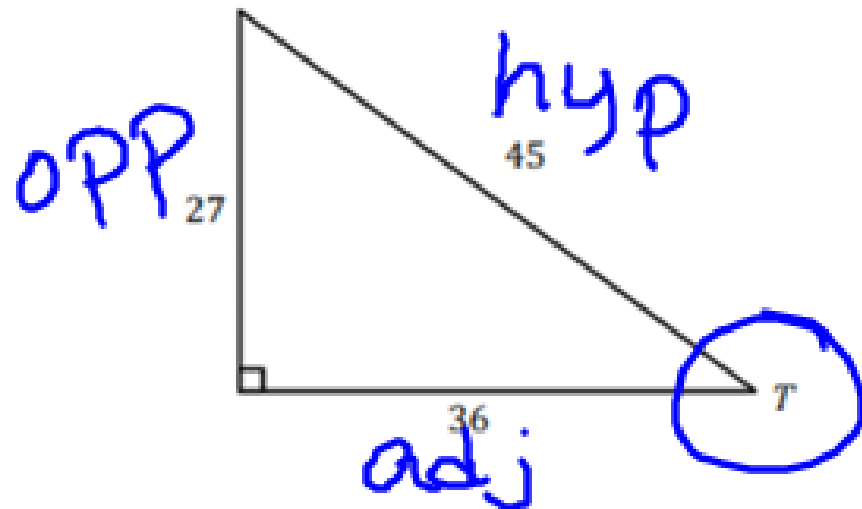
$$\text{(tan) Tangent} = \frac{\text{leg opposite to the angle}}{\text{leg adjacent to the angle}}$$



Sohcahtoa
n-p y o d y a o o
n p p s u p n p u

Let's Practice!

1. Consider the figure below.

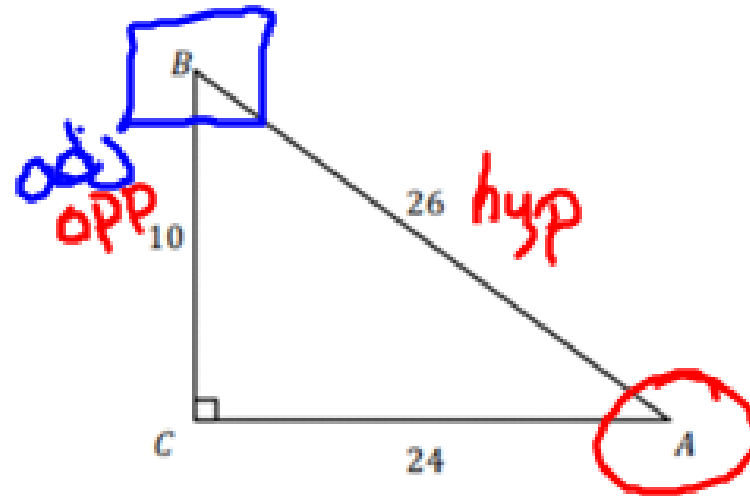


Find the sine, cosine, and tangent of $\angle T$ for the figure.

$$\sin T = \frac{o}{h} = \frac{27}{45}$$
$$\tan T = \frac{o}{a} = \frac{27}{36}$$

$$\cos T = \frac{a}{h} = \frac{36}{45}$$

2. Consider the figure below.



a. Find $\sin A$ for the above triangle.

$$\sin A = \frac{10}{26} = \frac{5}{13}$$

b. Find $\cos B$ for the above triangle.

$$\cos B = \frac{10}{26} = \frac{5}{13}$$

c. What do you notice about the values of $\sin A$ and $\cos B$?

They are =
 $\sin A = \cos B$