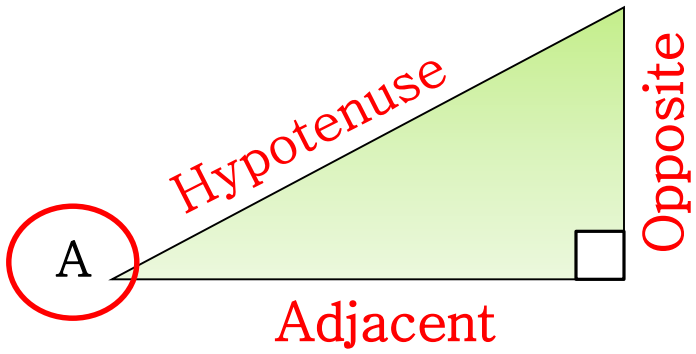
Trigonometry
Part 1

Trigonometry Part 1

- A trigonometric ratio is a ratio (fraction) of the lengths of 2 sides of a right triangle.
- The 3 basic ratios are sine, cosine and tangent. These are abbreviated as sin, cos and tan respectively.

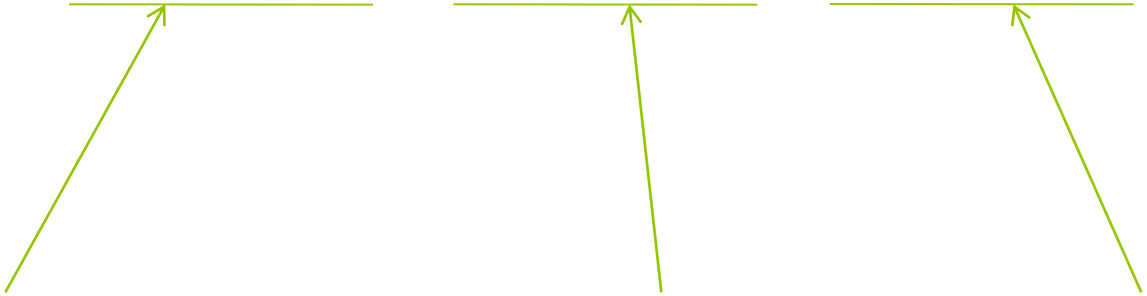
Label Your Triangle



The side directly across from the angle.

The side next to the angle, but not the hypotenuse.

SOHCAHTOA!!!

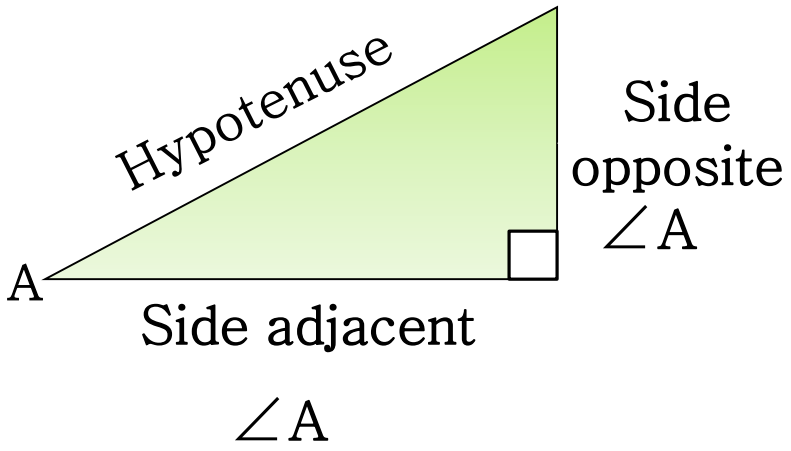


S = O/H C=A/H T=O/A

Let ΔABC be a right triangle

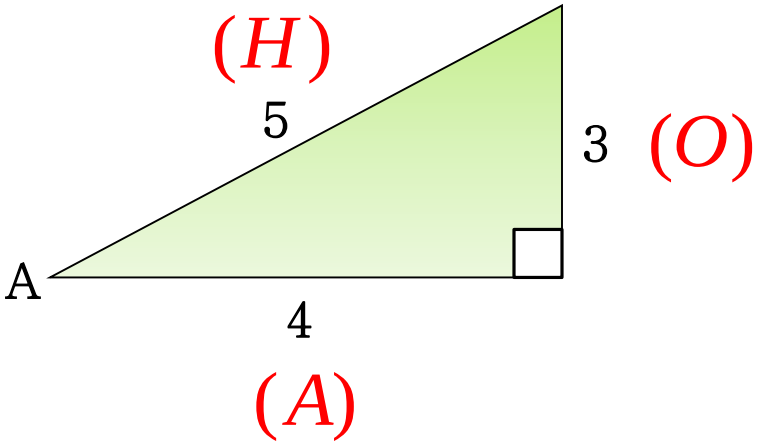
- The sine, cosine, and tangent of the acute angle A are defined as:

  - $\sin A = \dfrac{opposite}{hypotenuse} = \dfrac{o}{h}$
  - $\cos A = \dfrac{adjacent}{hypotenuse} = \dfrac{a}{h}$
  - $\tan A = \dfrac{opposite}{adjacent} = \dfrac{o}{a}$

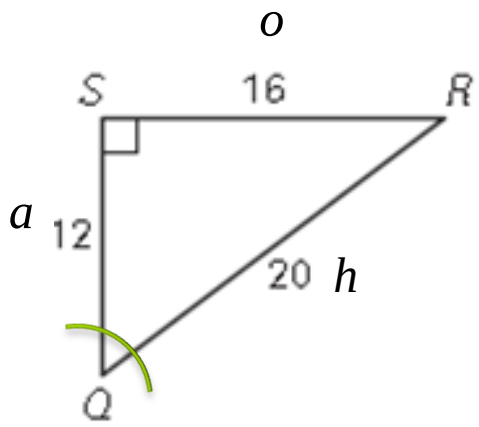


Find the sine, cosine and tangent of a $\angle$ A.

- $\sin A = \frac{o}{h} = \frac{3}{5}$
- $\cos A = \frac{a}{h} = \frac{4}{5}$
- $\tan A = \frac{o}{a} = \frac{3}{4}$



Find the sine, cosine and tangent ratios for ∠Q. Simplify your fraction! ☺



$$\sin Q = \frac{o}{h} = \frac{16}{20} = \frac{4}{5}$$

$$\cos Q = \frac{a}{h} = \frac{12}{20} = \frac{3}{5}$$

$$\tan Q = \frac{o}{a} = \frac{16}{12} = \frac{4}{3}$$