Quick Reference: SOHCAHTOA

Important Points Regarding SOHCAHTOA:

- SOHCAHTOA is an acronym that you can use to remember what sine, cosine, and tangent are equal to in terms of **opposite**, **adjacent**, and **hypotenuse** (see their equations below)
- You can ***only*** use SOHCAHTOA with **right triangles**
- With SOHCAHTOA, you are always taking the sine, cosine, etc. of ***an acute angle*** (NEVER the right angle)
- The ***legs*** of a right triangle are the sides that form the right angle (labeled ***a*** and ***b*** below)
- The ***hypotenuse*** (**not** a leg) is the side that's **across from the right angle** (labeled ***c*** below)
- The ***opposite*** side is the leg that's **across from the angle theta (θ)** (labeled ***b*** below)
- The ***adjacent*** side is the leg that's **next to the angle theta (θ)** (labeled ***a*** below)

$$sin(\theta) = \frac{opposite}{hypotenuse} = \frac{b}{c}$$

$$cos(\theta) = \frac{adjacent}{hypotenuse} = \frac{a}{c}$$

$$tan(\theta) = \frac{opposite}{adjacent} = \frac{b}{a}$$

$$csc(\theta) = \frac{1}{sin(\theta)} = \frac{hypotenuse}{opposite} = \frac{c}{b}$$

$$sec(\theta) = \frac{1}{cos(\theta)} = \frac{hypotenuse}{adjacent} = \frac{c}{a}$$

$$cot(\theta) = \frac{1}{tan(\theta)} = \frac{adjacent}{opposite} = \frac{c}{a}$$