Trigonometry in Geometry

Objective:

- Learning about tangent, sine, and cosine ratios for an acute angle
- Using tangent, sine, and cosine ratios to solve right triangle problems

Tangent Ratio: The measure of the leg opposite of the angle over the measure of the leg adjacent of the angle.

\[
\text{Tangent of } \angle A = \frac{\text{Leg opposite } \angle A}{\text{Adjacent leg } \angle A}
\]

Tangent of $\angle A = \frac{3}{4}$

Sine: The measure of the leg opposite of the angle over the measure of hypotenuse
Sine of $\angle A = \frac{\text{Leg opposite } \angle A}{\text{Hypotenuse}}$

Sine of $\angle A = \frac{4}{5}$

Cosine: The measure of the leg adjacent to the angle over the measure of the hypotenuse

cosine of $\angle A = \frac{\text{Leg adjacent to } \angle A}{\text{Hypotenuse}}$

cosine of $\angle A = \frac{3}{5}$

Easy way to remember trigonometric ratios:

*Soh, Cah, Toa* or *Oh Heck, Another Hour of Algebra*

Sin $A = \text{Opp}/\text{hyp}$

Cos $A = \text{Adj}/\text{hyp}$

Tan $A = \text{Opp}/\text{adj}$