We will now apply our techniques to solving oblique triangles (those with no right angles.)

How to label sides and angles:

Law of Sines: If ABC is a triangle with sides a, b, c then

\[ \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \]
Proof: Given triangle ABC
Draw altitude CD to side AB
Let CD = h

\[
\begin{align*}
\sin A &= \frac{h}{a} \\
\sin B &= \frac{h}{b} \\
\end{align*}
\]

In \( \triangle ADC \), \( \sin A = \)
In \( \triangle BCD \), \( \sin B = \)

Solve each for \( h = \)

Example 1:
Solve for the missing sides and angle.
Example 2: What if we are looking for an angle?

Triangle MKL with $\angle M = 100^\circ$  
m = 15'  
k = 10'  

Solve for the remaining parts of the triangle.

Example 3: The ambiguous case

Remember from Geometry the dreaded SSA?

Given triangle RST with $\angle R = 40^\circ$, $t = 8$ cm and $r = 6$ cm, solve for the rest of the triangle.
Finding the area of a triangle.

Area of triangle = \( \frac{1}{2} bh \)