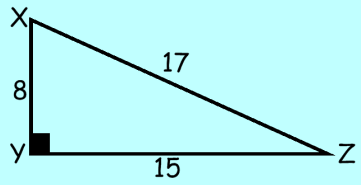
Warm Up

For the triangle at the right, find the sine, cosine, and tangent of $\angle Z$.

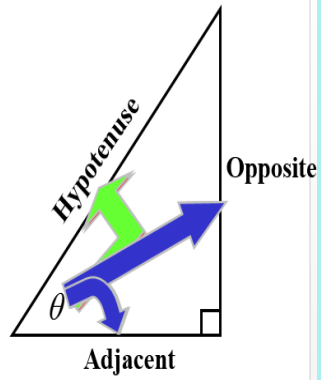


Today's Objective:
How do you use trig ratios to find angles of a triangle?

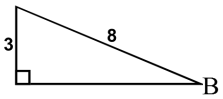
$sin\theta = \frac{O}{H}$

$cos\theta = \frac{A}{H}$

$tan\theta = \frac{O}{A}$



We will begin by setting up the problem like we are finding a side measure



sin B = 3/8

Next we will solve the equation by taking the inverse of the sin ratio to both sides

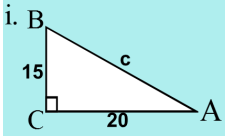
$\sin^{-1}(\sin B)=\sin^{-1}(3/8)$

Locate the following keys on your calculator

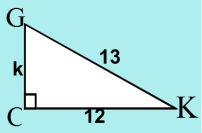
$\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$

Example 1) You are given 2 sides of the triangle. Find the other side and the two acute angles.

i.

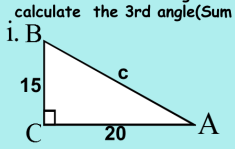


ii.

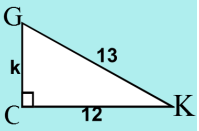


1B. Use an inverse trig function to get an angle, then use that angle to calculate the 3rd angle(Sum of the angles = 180°)

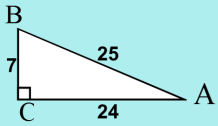
i.



ii.



Example 2) You are given all 3 sides of the triangle. Find the two non-right angles.



1. Use 2 different trig ratios to get each of the angles.