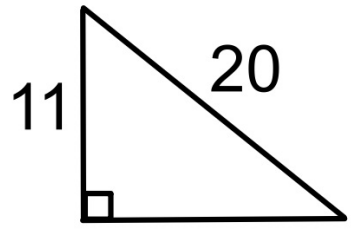
Bellwork

1. Set up the 6 basic trigonometric functions for the given triangle using angle A.



2. How many degrees is the sum of all three angles in a triangle?

Solving Triangles

Given Information Possibilities:

1. The measure of 1side and 1angle
2. The measure of 2 sides

Wanted Information:

1. The measure of all 3 sides
2. The measure of all 3 angles

Solving Right Triangles:

Given 1 side and 1 angle

Procedure:

1. Find the third angle.
   Do so by 90^0 - Given Angle = ?

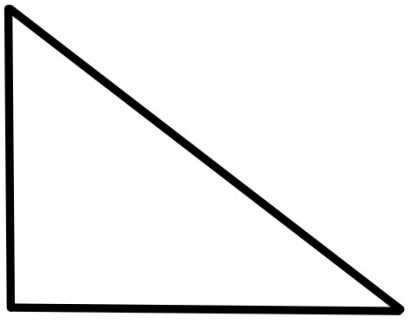
2. Using SOH-CAH-TOA,
   Set up one of these trig functions and solve for the missing side/hypotenuse.

3. Use the Pythagorean Theorem to find the remaining missing side.

Example

Solve the given triangle, round all decimals to the nearest tenth:

1. $\angle A = 65^{\circ}$ & $b = 17$



Finding Angles Given Only Sides

Inverse Functions:

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

} Will require you to use the 2nd key and then press sin, cos, or tan

Finding the measure of the angle:

1. Set up the ratio of the sides using SOH-CAH-TOA
2. Then:
   $\sin^{-1}(\frac{\text{Opp}}{\text{Hyp}}) = A$, $\cos^{-1}(\frac{\text{Adj}}{\text{Hyp}}) = A$, $\tan^{-1}(\frac{\text{Opp}}{\text{Adj}}) = A$
3. Round off to the nearest tenth of a degree

Solving Right Triangles:

Given 2 sides

Procedure:

1. Find the third side of the triangle using Pythagorean Theorem.
2. Set up the regular trigonometic functions: SOH-CAH-TOA
3. Find one of the angles using the inverse functions discussed on the previous page.
4. Find the third angle by taking...
   90° - Angle found in step 3
   This is because one angle is already 90°

Example

Solve the given triangle, round all decimals to the nearest tenth:

1. a = 7 & c = 15