Math 11 Foundations

Unit 3 – Acute Triangle Trigonometry

Lesson 1

Date: _____

Lesson Objective: To understand the relationship between each side in an acute triangle and the sine of its opposite angle.

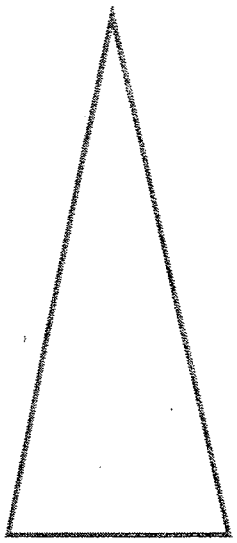
The triangle below is an example of an _____ triangle.

Explain why _____

Activity 1:

1. **Label the vertices of the triangle, ABC. The capital letters represent** _____
2. **Label the corresponding sides of the triangle abc. The small case letters represent** _____
3. **Write three ratios (fractions) showing the corresponding side / angle relationship:**

   $\frac{\quad}{\quad}$; $\frac{\quad}{\quad}$; $\frac{\quad}{\quad}$;



Activity 2: Construct the following _____ triangle:

Angle A:	**50.4°**	**Side Length a: 39.7 cm**
Angle B:	**46.5°**	**Side Length b: 37.3 cm**
Angle C:	**83.3°**	**Side Length c: 51.2 cm**

In your diagram include:

1. **Altitude (height) with right angle.**
2. **All measures of side and angles as given above.**

<u>Write</u> the corresponding side / angle ratios for all three sides / angles.
Substitute the numerical values and divide:

Are the quotients the same for all three ratios? _____
<u>Try</u>: dividing the corresponding side with the sin of the angle.

Are the quotients the same for all three ratios? _____
<u>Write</u> a key idea for the relationship between the length of corresponding side and the angle.

Solve for the height of the above triangle.

Think: Can you use the sin ratios to solve for height?

What other methods might work? (SOH CAH TOA?)

Redraw the triangle below; include all the dimensions; show all formulas and work.

Assignment #1: p117 #1-5