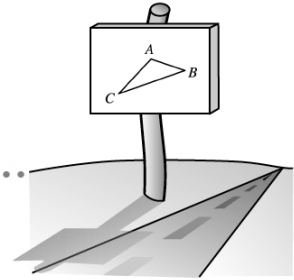CW#___   Name:_____

6.1.3   How do I solve SSA?

The Ambiguous Case of the Law of Sines

Situation
Sharika, Ivan, and Maria are having a snowball fight. Maria and Sharika have teamed up against Ivan. Maria is 24 feet to the right of Sharika and 18 feet away from Ivan who is hiding behind a tree. From where Sharika is standing, the angle between Ivan and Maria is 43º.

Slide 1	**Slide 2**
Sketch a diagram depicting the position of everyone involved in the snowball fight. Include all given dimensions and angles.	Calculate the angle between Sharika and Maria from Ivan's hiding spot behind the tree.

Slide 3
Sharika knows that Ivan cannot throw much farther than 20 feet, is she safe? Justify your answer.

Slide 5 Uh oh! Sharika is getting slammed with snowballs from Ivan! He must be less than 20 feet away from her. Sketch another possible triangle that positions Ivan closer to Sharika and still satisfies the original conditions.	**Slide 6** How many triangles are possible under these conditions? How do you know?
Slide 8 What is the actual angle between Sharika and Maria from where Ivan is standing? How did you get your answer? Explain completely.	**Slide 9** Why is there more than one possible location for Ivan? Use the unit circle and your knowledge of the inverse sine to explain completely.
Slide 10 Calculate Ivan's actual distance from Sharika.	

Slide 12 Sketch the diagram below. How many triangles were you able to make? What do you notice about the relationship among a, b, and h? Be as descriptive as possible.	**Slide 13** Sketch the diagram below. How many triangles were you able to make? What do you notice about the relationship among a, b, and h? Be as descriptive as possible.
Slide 14 Sketch the diagram below. How many triangles were you able to make? What do you notice about the relationship among a, b, and h? Be as descriptive as possible.	**Slide 15** Sketch the diagram below. How many triangles were you able to make? What do you notice about the relationship among a, b, and h? Be as descriptive as possible.

Slide 17
Given: ΔDEF with DF = 24 un, EF = 6 un, and angle E = 38º

Sketch the situation. How many triangles can be formed?

Calculate all side lengths and angles for every possible triangle.

Slide 18
Given: ΔABC with AB = 92 un, AC = 120 un, and angle C = 42º

Sketch the situation. How many triangles can be formed?

Calculate all side lengths and angle measures for every possible triangle.