Law of Sines: **Name:**_____
The Ambiguous Case **Date:** _____ **Period:** ____

So far in your studies of the Law of Sines you have solved triangles given the measure of two angles and a side. In this exploration you will examine the use of the Law of Sines when given the measures of two sides and a non-included angle (sides a and b and angle A). Open the TI-Nspire Document ***Ambiguous LOS*** *and complete the following.*

1. Move point *C* on the figure so that when you rotate point *B* only one oblique triangle is formed with the marked angle *A*. Write an inequality relating *a* and *b.*

2. Move point *C* so that when you rotate point *B* two triangles can be formed with the marked angle *A.* Write an inequality relating *a, b,* and *h*.

3. Move point *C* so that when you rotate point *B* a right triangle is formed. How does *a* compare to *h*?

4. Move point *C* so that when you rotate point *B* no triangle is formed. How does *a* compare to *h*?

5. Make conjectures about how the measures of *a, b,* and *h* can be used to determine the number of triangles possible when given the measures of two sides and a non-included angle.

    a. One oblique triangle

    b. Two triangles

    c. One right triangle

    d. No triangles