After watching the video, *Law of Sines*, complete the following problems.

1. Draw, as best you can, a triangle with side b=10, side c = 3, and angle C = 11°. Compute measures of angles A and B and length of side a. (NOTE: There are actually TWO such triangles!)

2. We have a triangle with side a = 100, and angle A = 50°. Find a value of b for which there are two triangles (as in example 1). Find a value of b for which there are *no* possible triangles.

3. The Law of Cosines is used to find missing angle measures and lengths of sides in any triangle. The Law of Cosines states: $c^2 = a^2 + b^2 - 2ab\cos C$

    a. What happens to the Law of Cosines in the case of a right triangle, if angle C is the right angle?

    b. -2ab cos C can be thought of an "adjustment" to the Pythagorean Theorem. If angle C is obtuse, how does the length of side c compare to the length of side c in a right triangle?

MakingSense
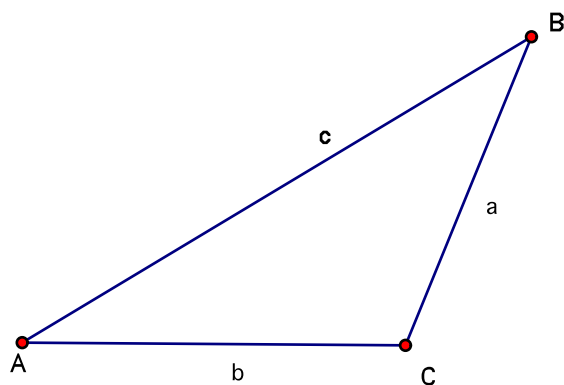
c. If angle C is acute, how does the length of side c compare to the length of side c in a right triangle?
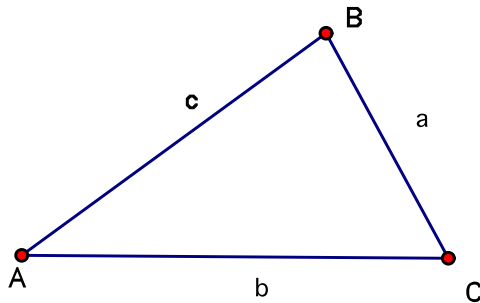
4. Two planes are refueling at the same time. The distance from plane A to the refueling plane is 100 ft. The distance from plane B to the refueling plane is 150ft. The angle that separates the two planes receiving fuel is approximately 45°. How far apart are plane A and plane B?