Law of Cosines (Section 6.2)

Warm-up: Because of prevailing winds, a tree grew so that it was leaning 6 degrees from the vertical. At a point 30 meters from the tree, the angle of elevation to the top of the tree is 22.5 degrees. Find the height of the tree.

Law of Sines Required Info to Solve a Triangle

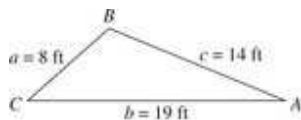In order to use the law of sines, you must be given:

1. _____

2. _____

The Law of Sines can not be used to solve an oblique triangle if you are given:

1. _____

2. _____

In this case use the _____.

Law of Cosines

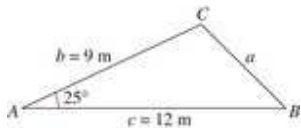**Standard Form**   **Alternative Form**

Example 1: Find the three angles of the triangle shown below.

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Practice Problem 1: Find the three angles of the triangle with sides 8, 6, 12.

Example 2: Find the remaining angles and side of the triangle shown below.

Practice Problem 2: Find the remaining angles and side of triangle with sides b = 16, c = 12, and angle A = 80 degrees.

Example 3: A ship travels 60 miles due east, then adjusts its course northward, as shown in the figure below. After traveling 80 miles in the new direction, the ship is 139 miles from its point of departure. Describe the bearing from point B to point C.