Unit 2 Day 4 & 5 CW - Law of Sines/Cosines Word Problems

1. A post is supported by two wires (one on each side going in opposite directions) creating an angle of 80° between the wires. The ends of the wires are 12m apart on the ground with one wire forming an angle of 40° with the ground. Find the lengths of the wires.

2. Two ships are sailing from Halifax. The Nina is sailing due east and the Pinta is sailing 43° south of east. After an hour, the Nina has travelled 115km and the Pinta has travelled 98km. How far apart are the two ships?

3. 3 friends are camping in the woods, Bert, Ernie and Elmo. They each have their own tent and the tents are set up in a Triangle. Bert and Ernie are 10m apart. The angle formed at Bert is 30°. The angle formed at Elmo is 105°. How far apart are Ernie and Elmo?

4. Two scuba divers are 20m apart below the surface of the water. They both spot a shark that is below them. The angle of depression from diver 1 to the shark is 47° and the angle of depression from diver 2 to the shark is 40°. How far are each of the divers from the shark?

5. To estimate the length of a lake, Caleb starts at one end of the lake and walks 95m. He then turns and walks on a new path, which is 120° to the direction he was first walking in, and walks 87m more until he arrives at the other end of the lake. Approximately how long is the lake?

6. Two observers are standing on shore ½ mile apart at points F and G and measure the angle to a sailboat at a point H at the same time. Angle F is 63° and angle G is 56°. Find the distance from each observer to the sailboat.

7. Jack and Jill both start at point A. They each walk in a straight line at an angle of 105° to each other. After 45 minutes Jack has walked 4.5km and Jill has walked 6km. How far apart are they?

8. Points A and B are on opposite sides of the Grand Canyon. Point C is 200 yards from A. Angle B measures 87° and angle C measures 67°. What is the distance between A and B?

9. A 4m flag pole is not standing up straight. There is a wire attached to the top of the pole and anchored in the ground. The wire is 4.17m long. The wire makes a 68° angle with the ground. What angle does the flag pole make with the wire?