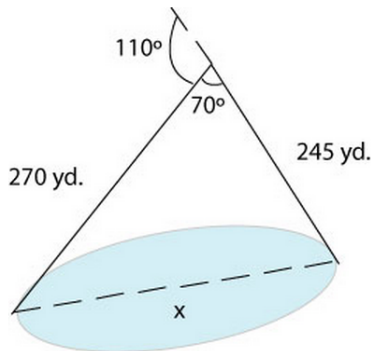
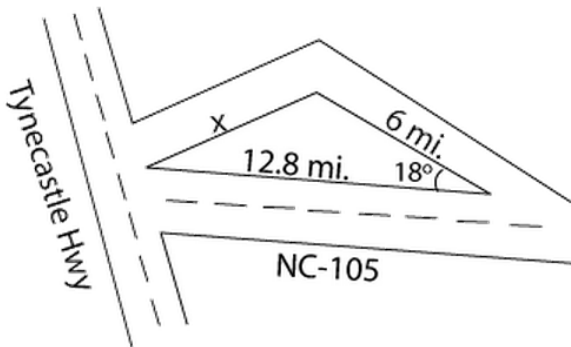


Law of Sines and Law of Cosines Word Problems

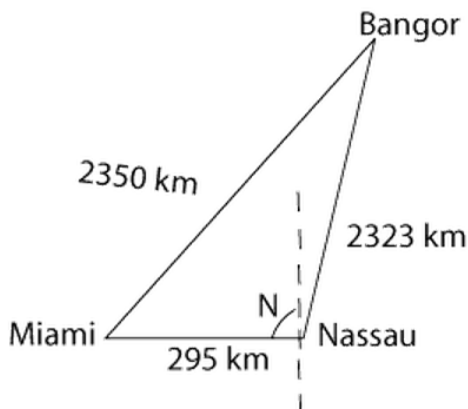
1. To approximate the length of a lake, a surveyor starts at one end of the lake and walks 245 yards. He then turns 110° and walks 270 yards until he arrives at the other end of the lake. Approximately how long is the lake?



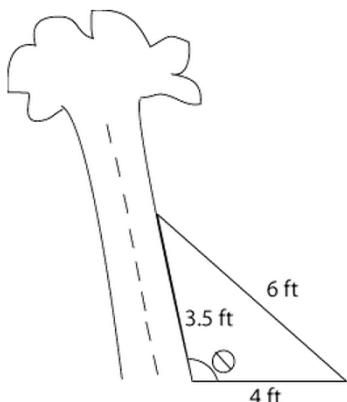
2. You are heading to Beech Mountain for a ski trip. Unfortunately, state road 105 in North Carolina is blocked off due to a chemical spill. You have to get to Tynecastle Highway which leads to the resort at which you are staying. NC-105 would get you to Tynecastle Hwy in 12.8 miles. The detour begins with a 18 veer off onto a road that runs through the local city. After 6 miles, there is another turn that leads to Tynecastle Hwy. Assuming that both roads on the detour are straight, how many extra miles are you traveling to reach your destination?



3. The distance on a map from the airport in Miami, FL to the one in Nassau, Bahamas is 295 kilometers due east. Bangor, Maine is northeast of both cities; its airport is 2350 kilometers from Miami and 2323 kilometers from Nassau. What bearing would a plane need to take to fly from Nassau to Bangor?



4. After the hurricane, the small tree in my neighbor's yard was leaning. To keep it from falling, we nailed a 6-foot strap into the ground 4 feet from the base of the tree. We attached the strap to the tree $3\frac{1}{2}$ feet above the ground. How far from vertical was the tree leaning?



5. A piece of wire 5.5 m long is bent into a triangular shape. One side is 1.5 m long and another is 2 m long. Find the angles of the triangle.

6. A baseball diamond is a square 90 ft. on a side. The pitcher's mound is 60.5 ft from home. How far does the pitcher have to run to cover first?

7. Points A and B are on opposite sides of a lunar crater. Point C is 50 m from A. The measure of angle BAC is determined to be 112° and the measure of angle ACB is determined to be 42° . What is the width of the crater?