

AP PreCalculus
Unit 3 Wkst B: Oblique Triangles

Name: _____ **Per:** _____

Directions: Draw a picture and solve each problem below. Give exact and approximate answers. Round all approximate values to the nearest hundredth.

1. 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?
2. Two observers are standing on shore $\frac{1}{2}$ mile apart at points A and B and measure the angle to a sailboat at a point C at the same time. Angle A is 63° and angle B is 56° . Find the distance from each observer to the sailboat.

3. A person at point A looks due east and sees a UFO with an angle of elevation of 40° . At the same instant, another person, 1.0 miles due west of point A looks due east and sights the same UFO with an angle of elevation of 25° . Find the distance between A and the UFO. How far is the UFO above the ground?

4. A vertical flagpole is attached to the top edge of a building. A man stands 400 feet from the base of the building. From his viewpoint, the angle of elevation to the bottom of the flagpole is 60° ; to the top is 62.5° . Determine the height of the flagpole.
5. Two sides and the included angle of a parallelogram have measures 3.2, 4.8, and 54° respectively. Find the lengths of the diagonals.
6. A bridge is supported by triangular braces. If the sides of each brace have lengths 63 feet, 46 feet and 40 feet, find the measure of the angle opposite the 46 ft side.
7. The measures of two sides of a parallelogram are 28 in and 42 in. If the longer diagonal has measure 58 in, find the measures of the angles at the vertices.
8. On a map, Orlando is 178 mm due south of Niagara Falls, Denver is 273 mm from Orlando, and Denver is 235 mm from Niagara Falls. Find the approximate compass heading from Orlando to Denver. Find the approximate compass heading from Niagara Falls to Denver.



9. Nancy shines a light from a window of a light house on a cliff 250 feet above the water level. Nick Danger 10 feet above the water level in a ship off shore, finds that the angle of elevation of the light is 3° . Find the length of the line of sight (light beam) from the ship to Nancy.
10. Yogi bear is out walking with Boo Boo looking for a pic-i-nic basket and Boo Boo sights a bee hive up in a tree at an angle of elevation of 36° . They walk 120 meters closer to get a better look and then look up at an angle of elevation of 51° How far are Yogi and Boo Boo from the bottom of the tree from their current spot?

