

Right Triangle Applications

Complete the following exercises without using a calculator.

1. A radio tower is anchored to the ground by a guy wire 45 feet from the base of the tower with an angle of elevation of 30° . Assume that the tower is on flat, level ground.

a) How tall is the tower?

b) How long must the wire be to reach the tower?

2. Susan is in a hot-air-balloon. On her right, she notices a farmhouse at an angle of depression of 60° . While on her left, she sees a pond at an angle of depression of 45° . The tour guide indicates that he knows that the pond and the farmhouse are 1320 feet apart. What is the altitude of the balloon?