

Practice Worksheet for Lesson 8-7

Name:

Mailbox #:

Solve each problem using the given information and the appropriate trig function. You must draw and label a diagram for each problem and round all answers to the nearest tenth. Be sure to label all answers.

1) When the sun's angle of elevation is 57° , a building casts a shadow 21 m long. How high is the building?

2) At a certain time, a vertical pole 3 m tall casts a 4 m shadow. What is the angle of elevation of the sun?

3) A kite is flying at an angle of elevation of about 40° . All 80 m of string have been let out. Ignoring the sag in the string, find the height of the kite.

4) An advertising blimp hovers over a stadium at an altitude of 125 m. The pilot sights a tennis court at an 8° angle of depression. Find the ground distance in a straight line between the stadium and tennis court.

5) An observer located 3 km from a rocket launch site sees a rocket at an angle of elevation of 38° . How high is the rocket at that moment?

6) To land, an airplane will approach an airport at a 3° angle of depression. If the plane is flying at 30,000 ft, find the ground distance from the airport to the point directly below the plane when the pilot begins descending.

7) Martha is 180 cm tall and her daughter Heidi is just 90 cm tall. Who casts the longer shadow, Martha when the sun is 70° above the horizon, or Heidi when the sun is 35° above the horizon?

8) Two buildings on opposite sides of a street are 40 m apart. From the top of the taller building, which is 185 m high, the angle of depression to the top of the shorter building is 13° . Find the height of the shorter building.