Geometry Trig Word Problems Worksheet

Make a drawing for each problem, set up a trig ratio and solve to the nearest tenth. Include the units.

1. A kite is flying 115 feet above the ground. The length of the string to the kite is 150 feet, measured from the ground. Find the angle of elevation of the string.

2. A 20-foot ladder is leaning against a wall. The base of the ladder is 3 feet from the wall. What angle does the ladder make with the ground?

3. An air force pilot must descend 1500 feet over a horizontal distance of 9000 feet to land smoothly on an aircraft carrier. What is the plane's angle of descent?

4. Steve needs to walk up a 150 meter hill to get to the flannel factory. He knows he is a horizontal distance of 120 meters from the factory. What is the angle of elevation of the hill?

5. Steve is biking down a mountain. If the trail is 1200 feet long, and the angle of depression at the top of the mountain is 46°, what is the horizontal distance covered by Steve?

6. Find the angle of elevation of the sun when a 7.6 meter flagpole casts an 18.2 meter shadow.

7. Jill is going down a ski run that is 1000 yards long with a vertical drop of 208 yards. Find the angle of depression from the top of the ski run to the bottom.

8. From his position in a hot-air balloon, Paul can see a kangaroo in a field. If the angle of depression is 8° and Paul is 38 meters above the ground, what is the straight-line distance from Paul to the kangaroo?

9. A plane takes off at an elevation of 20°. In its path is the tower of 170 feet. If the plane at takeoff is 500 feet away from the tower, what is the altitude of plane? Will it clear the height of the tower? If yes, by how much?

10. An archer stands 95 feet away from the base of a wall. He knows that in order to get an arrow over the wall he must shoot the arrow with an angle of elevation of 50°. The release point of the arrow is 6.5 feet above the ground. How high is the wall?