

Angle of Elevation and Depression Worksheet

Name: \_\_\_\_\_

Draw a picture to represent each situation, then use angles of elevation or depression to find the missing value.

1. At a point on the ground 50 feet from the front of a tree, the angle of elevation to the top of the tree is  $48^\circ$ . Find the height of the tree.
  
2. A ladder is leaning against a wall. The foot of the ladder is 6.5 feet from the wall. The ladder makes an angle of  $74^\circ$  with the level ground. How high on the wall does the ladder reach?
  
3. A wooden beam 24 feet long leans against a wall and makes an angle of  $71^\circ$  with the ground. How high up the wall does the beam reach?
  
4. A plane took off from a field and rose at an angle of  $8^\circ$  with the horizontal ground. As the plane flies over a water tower, it has covered a distance from the take off point of 2000 feet. How far apart are the take off point and the water tower?
  
5. A 20 foot ladder leans against a building and makes an angle of  $72^\circ$  with the ground. Find the distance between the foot of the ladder and the building.
  
6. A straight road to the top of a hill is 2500 feet long and makes an angle of  $12^\circ$  with the horizontal. Find the height of the hill.

7. Find the measure of the angle of elevation of the sun when a boy 5 feet tall casts a shadow 5 feet long.

8. Find the measure of the angle of elevation of the sun when a vertical post 15 feet tall casts a shadow 20 feet long.

9. After takeoff, a plane flies in a straight line for a distance of 4000 feet in order to gain an altitude of 800 feet. Find the angle of elevation from the ground to the plane.

10. A 40 foot ladder which is leaning against a wall reaches the wall at a point 36 feet above the ground. Find the measure of the angle created between the ladder and the ground.