

Unit 2 Day 2 HW(1)

1. The angle of elevation of the top of a building from a point 100 feet away from the building is 22° . Find the height of the building.
2. The Sears Tower stands 1,451 feet tall. A person across the street is 30 feet away from the foot of the tower. Find the angle of elevation to the top of the tower.
3. An airplane is flying at a height of 2 miles above the ground. The distance along the ground from the airplane to an airport is 5 miles. Find the airplane's angle of elevation.
4. The angle of depression of a buoy from a point on a lighthouse 100 feet above the surface of the water is 3° . Find the distance the buoy is from the lighthouse.
5. A bird sits on top of a 15-foot lamppost. The angle of depression from the bird to the feet of an observer standing away from the lamppost is 35° . Find the distance between the bird and the observer.

6. If a plane that is cruising at an altitude of 30,000 feet wants to land at Bush Field, it must begin its descent so that the angle of depression to the airport is 7° . How far is the plane from the airport?

7. From the top of a 35 meter cliff, Lori spots a hiker at an angle of depression of 62° . Assuming Lori can sprout tentacles with which to snatch the hiker from the path (to eat the hiker, natch), how long must Lori's new demon pawn appendages be to reach the tasty morsel of a hiker?

8. Josee wanted to measure the depth of the sink hole that opened on Amelia Avenue this morning. She measured the angle of depression to the lowest point to be 35° . She also measured the distance across the sinkhole to be 38 feet. How deep is the sinkhole? As it turns out (as these things so often do), the sinkhole is really an attempt by the mole people to rise up and overthrow our way of life, in 7 sentences describe how we should best defend ourselves from the mole menace.

10. Two towers (Barad-dûr and Orthanc) face each other separated by a distance 2000 m. As seen from the top of Barad-dur, the angle of depression of the second tower's base is 60° and that of the top is 30° . Based on this, how tall is Orthanc?

11. Two points on the same side of a tree are 65 feet apart. The angles of elevation of the top of the tree are 21° from one point and 16° from the other point. What kind of tree is it? If you could be a tree, what kind of tree would YOU be? Really, though, how tall is the tree?

12. A plane is 120 miles north and 85 miles east of an airport. Find its straight line distance from the airport.

13. As a hot-air balloon rises vertically, its angle of elevation from a point A, which is 110 kilometers from the point B, which is directly underneath the balloon, changes from 19° to 38° . What is the elevation of the balloon.