

1. From a point 80 m from the base of a tower, the angle of elevation to the top of the tower is 28° . How tall is the tower?

2. A ladder that is 20 ft. long is leaning against the side of a building. If the angle formed between the ladder and the ground is 75° , how far is the bottom of the ladder from the base of the building?

3. From an airplane at an altitude (height) of 1200 m, the angle of depression to a rock on the ground measures 28° . Find the distance from the plane to the rock.

4. A 14 foot ladder is used to scale a 13 foot wall. At what angle of elevation must the ladder be situated in order to reach the top of the wall?

5. A wire is attached to the top of the tower and to a point on the ground that is 35 m from the base of the tower. If the wire makes a 65° angle with the ground, how long is the wire?

6. The angle of depression from the top of a tower to a boulder on the ground is 38° . If the tower is 25 m high, how far from the base of the tower is the boulder?

7. An airplane takes off 200 yards in front of a 60 foot building. At what angle of elevation must the plane take off in order to avoid crashing into the building? Assume that the airplane flies in a straight line and the angle of elevation remains constant until the airplane flies over the building.

8. Standing on a cliff 380 meters above the sea, Pat sees an approaching ship and measures its angle of depression, obtaining 9 degrees. How far from shore is the ship? Now Pat sights a second ship beyond the first. The angle of depression of the second ship is 5 degrees. How far apart are the ships?