

Example 1. When the angle of elevation of the sun is 0.611 rad, a tree has a shadow 13.105 m long. How tall is the tree?

Example 2. In the design of a new building, a doorway is 2.3 ft above the ground. A ramp at an angle of 5.5° with the ground is to be built up to the doorway. How long will the ramp be?

Example 3. The headlights of an automobile are set such that the beam drops 2 in for each 25 ft in front of the car. What is the angle between the beam and the road?

Example 4. An 8% grade corresponds to a road that rises 8 ft for every 100 ft along the horizontal. Find the angle of inclination that corresponds to an 8% grade. Round to the nearest minute

Example 5. The Sears Tower in Chicago can be seen from a point on the ground known to be 5300 ft from the base of the tower. If the angle of elevation from the observer to the top of the tower is 15.722 degrees, how high is the Sears Tower? The fact that the Sears Tower is now the Willis Tower has no effect on the answer to this question.

Example 6. On a test flight, during the landing of a space shuttle, the ship was 310 ft above the beginning of the landing strip. It then came in on a constant angle of 6 degrees with the landing strip. How far from the beginning of the landing strip did it first touch the ground?