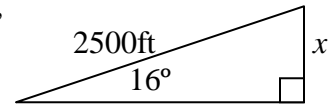


1. As shown, a kite is flying at the end of a 20-meter string. If the string makes an angle of 68° with the ground, how high, to the nearest meter, is the kite?
2. The height of a cloud over an airport at night is determined by projecting a light vertically upward to the cloud. At a point on the ground 850 feet from the light, as shown, the angle of elevation of the spot where the light hits the cloud is found to contain 58° . Find, to the nearest foot, the height of the cloud.
3. As shown, from the top of a tree 16 feet tall, an observer measures the angle of depression of an object on the ground as 41° . Find, to the nearest foot, the distance from the foot of the tree to the object.

4. A straight road is inclined upward at an angle of 16° with the horizontal, as shown. If a horse walked a distance of 2500 feet up the road, find, to the nearest foot, his increase in altitude.



5. For each 12-foot horizontal distance, a wheelchair ramp rises one foot. Find, to the nearest degree, the measure of the angle that the ramp makes with the horizontal.
6. A monument stands on level ground. The angle of elevation of the top of the monument, taken at a point 425 feet from the foot of the monument, is 32° . Find the height of the monument to the nearest foot.
7. A boy flying a kite lets out 150 feet of string that makes an angle of 64° with the ground. If the string is straight, find, to the nearest foot, how high the kite is above the ground.
8. A 25-foot wire attached to the top of a pole make an angle of 62° with the ground. Find to the nearest foot, the distance between the point where the wire meets the ground and the foot of the pole.
9. A girl walked 400 feet into a tunnel that slopes downward at an angle of 7° with the horizontal ground. Find, to the nearest ten feet, how far she was beneath the surface.

10. An airplane A is 1000 feet above the ground and directly over a church C. The angle of elevation of the plane as seen by a person at a point B on the ground some distance from the church is 22° . Find to the nearest foot, how far the person is from:
 - a. the church
 - b. the plane

11. An observer in a balloon that is 2000 feet above an airport finds that the angle of depression of a steamer out at sea is 21° . Find, to the nearest hundred feet, the distance between the balloon and the steamer.

12. A plane takes off from a field and climbs at an angle of 12° . Find to the nearest 100 feet, how far the plane must fly to be at an altitude of 1200 feet.

13. Find, to the nearest degree, the angle of elevation of the sun when a tree 24 feet high casts a shadow of 36 feet.

14. The foot of a 40-foot ladder leaning against a building is 32 feet from the building. Find, to the nearest degree, the measure of the angle that the ladder makes with the ground.

15. A railroad track slopes upward at an angle of 7° to the horizontal. Find, to the nearest ten feet, the vertical distance it raises in a horizontal distance of 1 mile. (5280 feet)