

Right Triangle Trigonometry Word Problems

1. From the top of a lighthouse 160 feet above sea level, the angle of depression to a boat at sea is 25 degrees. To the nearest foot, what is the horizontal distance from the boat to the base of the lighthouse?
2. A ski slope at a mountain has an angle of elevation of 25.2 degrees. The vertical height of the slope is 1808 feet. To the nearest foot, how long is the ski slope?
3. A man on a 135-foot vertical cliff looks down at an angle of 16 degrees and sees his bicycle. To the nearest foot, how far away is the man from his bike, and how far is his bike from the base of the cliff?
4. A ladder rests against a wall. The top of the ladder reaches 15 feet up the wall, and makes an angle of 53 degrees with the wall. To the nearest tenth of a foot, how long is the ladder?
5. The angle from the base to the top of a water slide is 13 degrees. The slide extends horizontally for 58.2 meters. To the nearest tenth of a meter, what is the height of the water slide?
6. A person flying a kite has released 176 meters of string. The string makes an angle of 27 degrees with the ground. To the nearest meter, how high is the kite and, horizontally, how far away is the kite?
7. An airplane is flying at an altitude of 6000 meters over the ocean directly toward a coastline. At a certain time, the angle of depression from the airplane to the coastline is 14 degrees. To the nearest kilometer, how much farther does the plane have to fly until it is directly above the coastline?