

## Angles of Elevation and Depression

1. From the top of a lighthouse 210 feet high, the angle of depression to a boat is  $27^\circ$ . Find the distance from the boat to the foot of the lighthouse.
2. After flying at an altitude of 9 kilometers, an airplane starts to descend when its ground distance from the landing field is 175 kilometers. What is the angle of depression at the time the airplane starts its descent?
3. A balloon on a 40-foot string makes an angle of  $50^\circ$  with ground. How high above the ground is the balloon if the hand of the person holding the balloon is 6 feet above the ground?
4. A ladder leaning against a house makes an angle of  $62^\circ$  with the ground. The foot of the ladder is 7 feet from the foundation of the house. How long is the ladder?
5. From the top of a tower, the angle of depression to a stake on the ground is  $72^\circ$ . The top of the tower is 80 feet above ground. How far is the stake from the foot of the tower?
6. A tree 40 feet high casts a shadow 58 feet long. Find the measure of the angle of elevation to the sun.