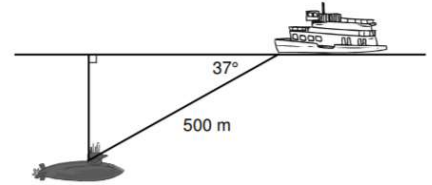


Trig Applications

1. A ladder is leaning against the side of a house and forms a 65° angle with the ground. The foot of the ladder is 8 feet from the house. Find the length of the ladder.
2. A lighthouse built at sea level is 150 feet high. From its top, the angle of depression of a buoy is 25° . Find the distance from the buoy to the foot of the lighthouse.
3. A surveyor is 100 meters from a bridge. The angle of elevation to the top of the bridge is 35° . The surveyor's instrument is 1.45 meters above the ground. Find the height of the bridge.
4. A surveyor is 100 meters from a building. The angle of elevation to the top of the building is 23° . The surveyor's instrument is 1.55 meters above the ground. Find the height of the building.
5. In a parking garage, each level is 20 feet apart. Each ramp to a level is 130 feet long. Find the measure of elevation for each ramp.
6. A train in the mountains rises 10 feet for every 250 feet it moves along the track. Find the angle of elevation of the track.
7. A plane rose from take-off and flew at an angle of 11° with the ground. When it reached an altitude of 500 feet, what was the horizontal distance the plane had flown?
8. As viewed from a cliff 360 m above sea level, the angle of depression of a ship is 28° . How far is the ship from the shore?

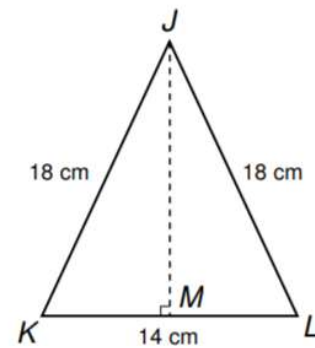
9. A sonar operator on a cruiser detects a submarine at a distance of 500 m and an angle of depression of 37° . How deep is the submarine?



10. The legs of an isosceles triangle are each 18 cm. The base is 14 cm.

Find: a) the measure of the base angles,

and b) the exact length of the altitude to the base.



11. The sides of an equilateral triangle are all 10 inches. Find the height.

12. The sides of a square are all 10 inches. Find the length of the diagonal.