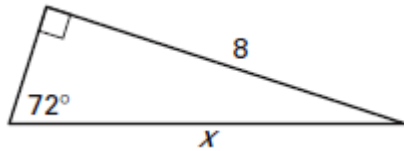
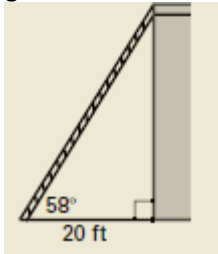


- b) Find the value of x .



Example 4 : Applying Trigonometric Ratios to Real World Situations

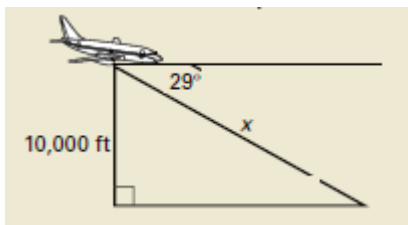
- a) A rope staked 20 feet from the base of a building goes to the roof and forms an angle of 58° with the ground. To the nearest tenth of a foot, how long is the rope?



If you look up at an object, the angle your line of sight makes with a horizontal line is called the **angle of elevation**. If you look down at an object, the angle your line of sight makes with a horizontal line is called the **angle of depression**.

Since they form a pair of alternate interior angles within parallel lines, **angle of elevation = angle of depression**

- b) A pilot is looking at an airport from her plane. The angle of depression is 29° . If the plane is at an altitude of 10,000 feet, approximately how far is it from the airport?



- c) A 450 foot tall building is near a shorter building. A person on top of the shorter building finds the angle of elevation of the roof of the taller building to be 25° and the angle of depression of its base to be 35° . How far apart are the two buildings to the nearest foot? How tall is the shorter building to the nearest foot?

