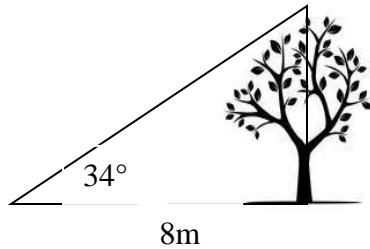


7.5 Trigonometry Story Problems

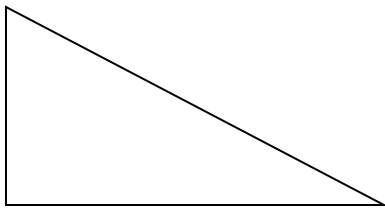
Name _____ Hour _____

Directions: For each problem draw a picture for the given information, set up an equation, and solve for the unknown.

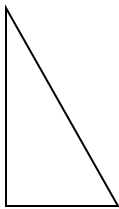
1. To calculate the height of a tree, Marie measures the angle of elevation from her feet to the top of the tree to be 34° . She measures her distance to be 8 m from the base of the tree. How high is the tree to the nearest tenth of a meter?



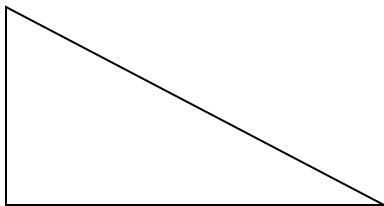
2. A building 14.5 m tall casts a shadow of 11.4 m along the level ground. At what angle do the rays of the sun hit the ground (to the nearest degree)?



3. A 5.2 m ladder leans against a wall. The bottom of the ladder is 1.9 m from the wall. What is the angle of elevation of the ladder (to the nearest degree)?



4. A kite is 33 m above the ground. The kite string makes an angle of elevation 38° with the ground. Assuming that the string is taut, how much string is out (to the nearest tenth)?



5. Sierra is flying a kite. She has let out 55 ft of string. If the angle of elevation is 35° , how high above the ground is the kite?

6. As it leans against a building, an 8 meter ladder makes an angle of 62° with the ground. How far is the bottom of the ladder from the base of the building (to the nearest tenth of a meter)?

7. The tallest free-standing structure in the world is the 553 meter high CN Tower in Toronto. What will be the length of the shadow of the tower, correct to the nearest meter, on a day that the angle of elevation of the sun is 50° ?

8. A paraglider is towed behind a boat by a 400 ft rope attached to the boat. The spotter in the boat estimates the elevated angle of the ropes to be 35° above the boat. Estimate the paraglider's height above the water.

9. A water slide is a straight ramp 25 m long that starts from the top of a tower 21 m height. Find the angle that the slide forms with the tower.