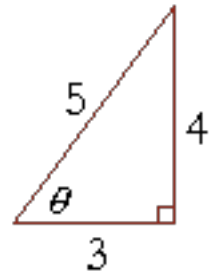


Objective: To apply right triangle trigonometry.

Warm Up: Quinn was given a 3, 4, 5 triangle and asked to evaluate all six trig functions. He's struggling... Help him out!



Vocabulary:

Angle of Elevation: An angle formed from a line parallel to the ground looking upward

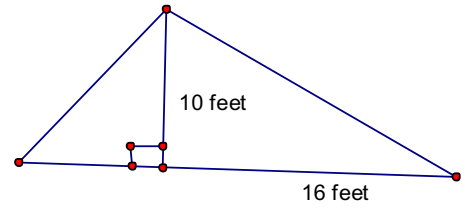
Angle of Depression: An angle formed from a line parallel to the ground looking downward

Examples: Solve the following problems.

A.) At a point 20 meters from the base of a flagpole, the angle of elevation to the top of the flagpole is 48° . How tall is the flagpole?

B.) If a rocket is designed to fly straight up into the sky. If it flies 2° off course for 1000 miles, how far from the correct path will the rocket be?

C.) A roof is constructed as shown in the diagram. Find the pitch (angle of elevation) of the right side of the roof.



D.) As it leans against a building, a 9-meter ladder makes an angle of 55° with the ground. How far is the bottom of the ladder from the base of the building?

E.) A train decreases its altitude by 8m when traveling along 200m of track. Find the angle of depression.

F.) You are flying a kite 4 feet above the ground and are using 500 feet of kite line. At what altitude is the kite flying if the string is at a 48-degree angle?

G.) An airplane is flying at a height of 5 miles above the ground. The distance along the ground from the airplane to the airport is 7 miles. What is the angle of depression from the airplane to the airport?

H.) You are standing 25 feet from the base of a flagpole. The angle of elevation to the top of the flagpole is 30 degrees. What is the height of the flagpole to the nearest tenth?