

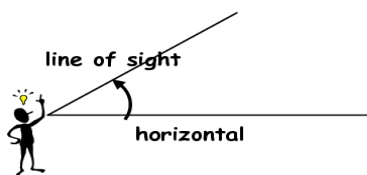
The Primary Trigonometric Ratios - Word Problems

A. Determining the measures of the sides and angles of right triangles using the primary ratios

When we want to measure the height of an "inaccessible" object like a tree, pole, building, or cliff, we can utilize the concepts of trigonometry.

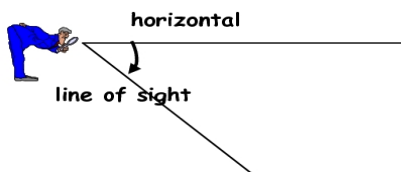
To solve such inaccessible heights or depths using trigonometry, the following angle definitions are necessary:

Angle of Elevation



The Angle of Elevation is the angle from the horizontal to your line of sight. (i.e. you are looking upwards at the object)

Angle of Depression



The Angle of Depression is the angle from the horizontal to the line of sight. (i.e. you are looking downwards at the object)

SOLVING FOR AN UNKNOWN SIDE OR ANGLE

Where Do I Begin...Where Does It End?

1. Sketch the triangle, if one has not been provided for you.
2. Label the given angle(s) and side(s). Include the variable for the unknown side or angle, where needed.
3. "Looking" from the given angle, label the opposite side, adjacent side, and hypotenuse.
4. Write the trig ratio (sin, cos, tan) that contains the given information and the unknown you want to find.
5. Substitute the given information, and solve for the unknown.