

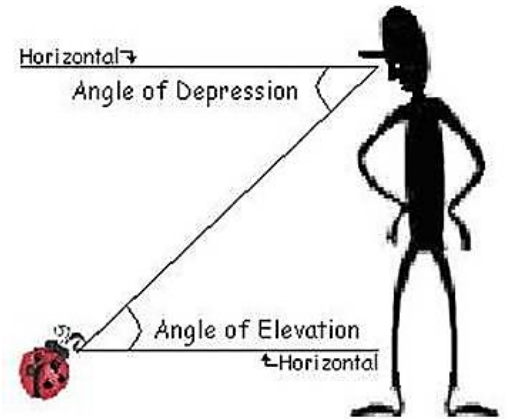
Unit 5: Right Triangle Trigonometry
Day 7: Angles of Elevation and Depression

Name: _____
Date: _____ Hour: _____

An **angle of elevation** is the angle measured from the horizontal upward to an object.

An **angle of depression** is the angle measured from the horizontal down to an object.

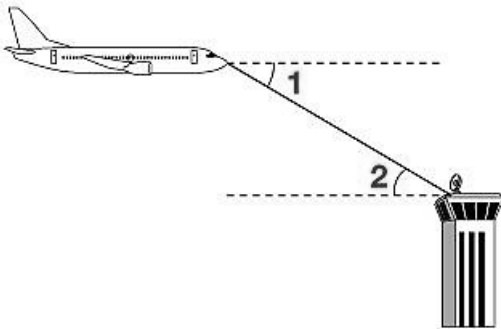
These two angles are often used to solve many real world problems.



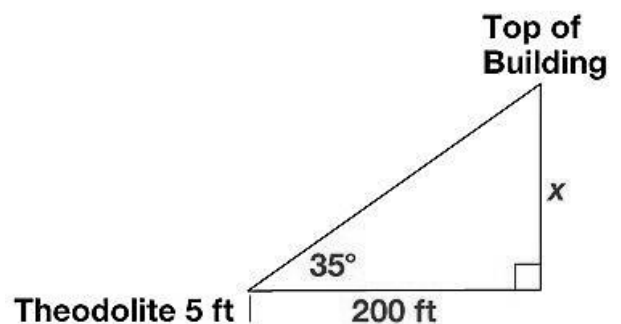
Solving Applied Trigonometry Problems

- Step 1** Draw a sketch and label it with the given information. Label the unknown with a variable.
- Step 2** Use the sketch to write an equation relating the given quantities and the variable.
- Step 3** Solve the equation. Check to make sure your answer makes sense.
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Example 1: Describe $\angle 1$ and $\angle 2$ as they relate to the situation shown.



Example 2: A surveyor stands 200 ft from a building to measure its height with a 5-ft tall theodolite measuring instrument. The angle of elevation to the top of the building is 35° . How tall is the building?



Example 3: A 12-meter flagpole casts a 12-meter shadow. Find the angle of elevation to the sun.



Example 4: An airplane flying 3500 ft above ground begins a 2° descent to land at an airport. How many miles from the airport is the airplane when it starts its descent?

Example 5: A 13.5-meter fire truck ladder is leaning against a wall. Find the distance the ladder goes up the wall if it makes an angle of 43° with the ground.



Homework: Practice 9 – 3 Worksheet and Page 488 Check Point Quiz