**Precalculus Unit 5 Notes—Applications of Right Triangle Trig**



\****Angle of Elevation***–from the horizontal up

\****Angle of Depression***–from the horizontal down

**Example 1** From a point 340 ft away from the base of the Peach Tree Center Plaza in Atlanta, GA the angle of elevation

to the top of the building is 65°. What is the height of the building? Give the EXACT answer & the

answer rounded to the nearest ft

**Example 2** The angle of depression from the edge of a cliff to the base of a tree on the ground below is 4.25. If the

base of the cliff is 117ft from the base of the tree, how high is the cliff?

**Example 3** On November 13, 2007 The New Frontier hotel and casino in Las Vegas, NV was to be demolished. To

help calculate the safety zone for spectators to watch, the head demolition engineer needed to calculate the

height of the New Frontier. His eyes are 6 ft 3in from the ground and his line of sight to the top of the New

Frontier forms a 73angle with the horizontal. If he is standing 90 feet from the base of the building, how

tall is the building?

**Example 4** The angle of depression of a buoy from the top of the Barnegat Bay lighthouse 130 feet above the surface

of the water is 6°. Find the distance *x* from the base of the lighthouse to the buoy.

**Example 5** From the top of a 100-ft building a man observes a moving car. If the angle of depression of the car changes

from 22° to 46° during the period of observation, how far does the car travel? Is the car moving to or from

the building?

**Example 6** A large, helium-filled penguin is awaiting the start of a parade. Two cables attached to the underside of the

penguin make angles of 48° and 40° with the ground (see diagram). If the cables are attached to the ground

10 feet from each other, how high above the ground is the penguin?

