Angles of Elevation and Depression

Angle of elevation
from the boat to the top of the lighthouse
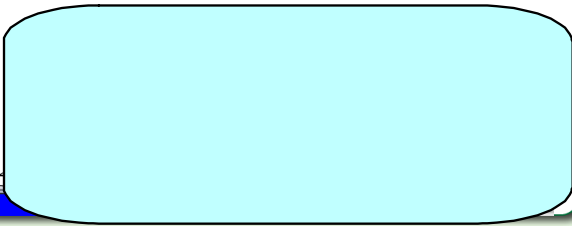
line of sight

Angles of Elevation and Depression

Angle of depression
from the top of the lighthouse to the boat
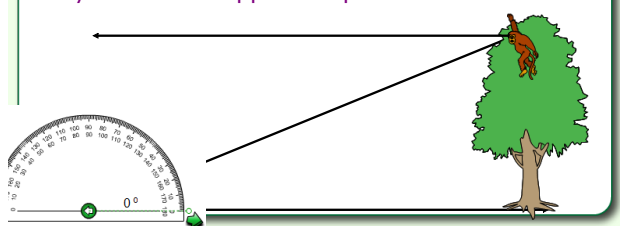
line of sight

Angles of Elevation and Depression

What do you notice about the angles of elevation and depression? Justify with a theorem.

Identifying Angles of Elevation and Depression

A monkey "hanging" in a tree spots a banana. Measure the angles of elevation and depression. Did your answer support the previous claim?
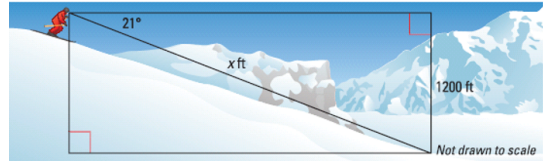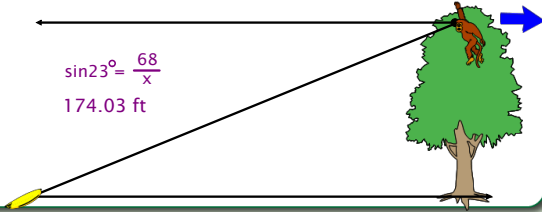
0°

Identifying Angles of Elevation and Depression

A monkey "hanging" in a tree 68 ft tall spots a banana at a 23 degree angle of depression. What is the direct distance from the monkey to the banana.
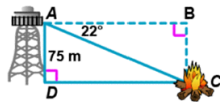
$\sin 23° = \dfrac{68}{x}$

174.03 ft

You are skiing on a mountain with an altitude of 1200 meters. The angle of depression is 21°. About how far do you ski down the mountain?
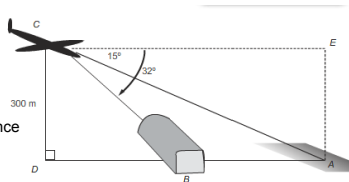
A fire is sighted by a ranger in a fire tower, 75 meters above the ground. If the ranger is looking down at an angle of depression of 22°, how far from the base of the tower is the fire?

A surveyor is 130 feet from a tower. The tower is 86 feet high. The surveyor's instrument is 4.75 feet above the ground. If the surveyor sights the top of the tower with his instruments, what is the angle of elevation?

A plane is flying at an altitude of 300 meters. The pilot sights the end of the main runway at an angle of depression of 15^0. She then sights a maintenance hanger at an angle of depression of 32^0. What is the distance between the end of the main runway and the maintenance hanger?

Summary

- Angle of
- Looking up at an object the angle your line of sight makes with a horizontal line

- Angle of
- Looking down at an object the angle your line of sight makes with a horizontal line