Name: _____

CC Geometry

## Angle of Elevation and Depression Homework

1) A 73-foot tree casts a shadow 112 feet long. Find the angle of elevation of the sun.

2) At a point on the ground 46 feet from the foot of a tree, the angle of elevation of the top of the tree is 48°. What is the height of the tree to the nearest foot?

3) A ranger in a forest observation tower, which is 120 feet tall, observes a fire. If the angle of depression from the top of the tower to the fire is 2°, find to the nearest foot the distance the base of the tower is to the fire.

4) A ship on the ocean surface detects a sunken ship on the ocean floor at an angle of depression of 50°. The distance between the ship on the surface and the sunken ship on the ocean floor is 200 meters. If the ocean floor is level in this area, how far above the ocean floor, to the nearest meter, is the ship on the surface? [*Show all work.*]

5) Marcel is holding his kite string 4 feet above the ground, as shown in the accompanying diagram. The distance between his hand and a point directly under the kite is 125 feet. If the angle of elevation to the kite is 57°, find the height (*h*) of his kite, to the nearest foot.

57°

4 ft

$h$

—125 ft—

(not drawn to scale)
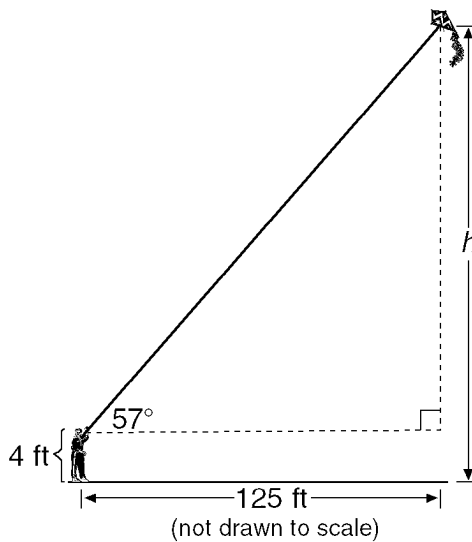
1)   33°

2)   51 feet

3)   3,436 ft

4)   153 meters
WORK SHOWN: $\sin 50° = \dfrac{x}{200}$

5)   196 ft