Name: _____

Word problems.

1) A wire is attached to the top of a 75 foot tower and meets the ground at a 65° angle. How long is the wire?

2) When the suns angle of elevation is 57°, a building casts a shadow 21 meters long. How high is the building?

3) A kite is flying at an angle of elevation of about 40°. All 80 meters of string have been let out. Ignoring the sag in the string, find the height of the kite.

4) A man stands at the top of a 105 foot lighthouse and sees a boat. The angle of depression to sight the boat is 37°.

a) Approximate the distance between the base of the light house and the boat, disregarding the height of the man.

b) Approximate the distance between the base of the lighthouse and the boat is the man's eye level is 5.5ft from the top of the lighthouse.

c) Which should be more accurate?

5) An observer in an airplane at a height of 500 meters sees a car at an angle of depression of 31°. If the plane is over a barn, how far is the car from the barn?

6) A ship is heading directly toward a lighthouse whose beacon is 125 feet above sea level. At the first sighting, the angles of elevation from the ship to the light was 7°. A short time later, the angle of elevation was 16°. To the nearest foot, determine and state how far the ship traveled from first sighting to second sighting.

7) Marcos measured the angle of elevation of a tree and found it to be 20° . He walked 100m closer. This time, the angle of elevation was 30° . How tall is the tree? (answer to 1 decimal place)

8) Two buildings are 64.8m apart. From the top of the shorter one, the angle of elevation to the top of the other is 32.5°, while the angle of depression to the base is 48.9°. Find the sum of the building heights to the nearest tenth of a meter.