Word problems.

1) A guy 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 light house and sees a boat. The angle of depression to sight the boat is 37°, find the distance between the base of the light house and the boat.

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) From a point 340 meters from the base of the Hoover Dam, the angle of elevation to the top of the dam is $33°$. Find the height of the dam to the nearest meter.

7) The Pyramid of the Sun in the ancient Mexican city of Teotihuacan was unearthed from 1904 – 1910. From a point on the ground 300 feet from the center of its square base, the angle of elevation to its top would have been $31°$. What was the height of the pyramid?