Alg 1 Geometry Honors
Ch 8 Practice 1

Name _____

Solve the following problems using concepts from Chapter 8. Show all work. Draw a diagram for each problem.

1. At takeoff, a plane flies at an angle of 10° with the runway. After it has travelled a ground distance of 2800 feet, find the vertical distane the plane has gained from takeoff. Round to the nearest foot.

2. You lean a 6.7 m ladder long against the wall. It makes an angle of 63° with the level ground. How high up the building is the top of the ladder?

3. Your cat is trapped on a tree branch 6.5m above the ground. Your ladder is only 6.7 m long. If you place the ladder's tip on the tree branch, what angle will the ladder make with the ground?

4. A submarine at the surface of the ocean makes an emergency dive, making an angle of 21° with the surface. If the submarine travels 300 m, how deep will it be?

5. What is the perimeter of an equilateral triangel with an altitude of 15 inches?

6. In $\triangle ABC$, $\sin A = \frac{24}{25}$. Which other expression has a value of $\frac{24}{25}$?

7. Commercial airliners fly at an altitude of about 10km. They start descending toward the airport when they are far away, so that they will not have to dive at a steep angle.
a) If the pilot wants the plane's path to make an angle of 3° with the ground, at what horizontal distance must she start descending?

b) If the pilot starts descending a ground distance of 300 km from the airport, what angle will the plane's path make with the horizontal?

8. The perimeter of an equilateral triangle is 45 m. Find the length of an altitude.

9. The diagonal of a square is 12 inches. Find the area. Give exact and approximate values.

10. A parallelogram has sides that are 6cm and 10 cm long. The measure of the acute angles of the parallelogram is 30°. What is the area of the parallelogram? (A=bh)