Honors RWC Word Problems: Sketch picture, set up equation, and solve. NAME:

1)

According to the safety sticker on a 20-foot ladder, the distance from the bottom of the ladder to the base of the wall on which it leans should be one-fourth of the length of the ladder: 5 feet.

a. How high up the wall will the ladder reach?

b. If the ladder is in this position, what angle does it make with the ground?

2)

A disabled jet can glide at an angle of 11° with the horizontal. If it starts to glide at an altitude of 12,000 ft, can is reach a landing strip that is 10 miles away?

3)

SUBMARINES A submarine that is 250 meters below the surface of the ocean begins to ascend at an angle of 22° from vertical. How far will the submarine travel before it breaks the surface of the water?

4)

MONUMENTS The Leaning Tower of Pisa in Italy is about 55.9 meters tall and is leaning so it is only about 55 meters above the ground. At what angle is the tower leaning?

5)
The angle of elevation from a sailboat to the top of a 121-foot lighthouse on the shore measures 16°. How far is the sailboat from the lighthouse?

6)
Ben is flying a kite directly over his buddy Franklin, who is 125 meters away. The kite string makes a 39° angle with the ground (which is level). How high is the kite?

7)
From a cliff 150 feet above a lake, Julio saw a boat sailing directly toward him. The angle of depression was 5°. A few minutes later, he measured it to be 11°. Find the distance the boat sailed between the two observations.

8)
A road runs due east from the base of Mount Baldy. From two points 235 meters apart on the road, the angles of elevation to the top of the mountain are 43° and 30°. How high above the road is the mountaintop?