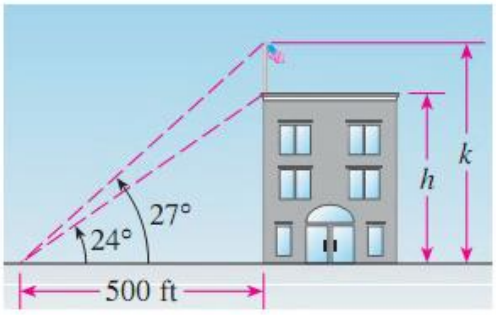
NAME _____ DATE _____ PD _____

PRE-CALCULUS **Solving Problems with Trigonometry Notes**

1) The sonar of a navy cruiser detects a nuclear submarine that is 4000 feet from the cruiser. The angle between the water level and the submarine is 31.5°. How deep is the submarine?

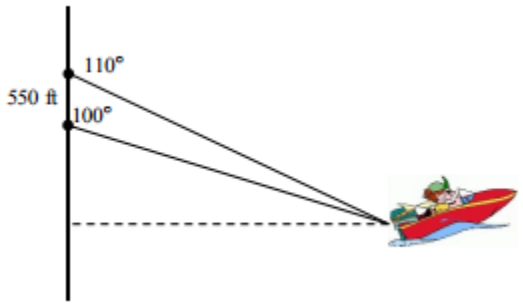
2) To get a rough idea of the height of a building, Mrs. Gulamali paces off 50 feet from the base of a building, then measures the angle of elevation from the ground to the top of the building at that point to be 58 degrees. About how tall is the building, in feet?

3) From a point on the ground 500 feet from the base of a building, an observer finds that the angle of elevation to the top of the building is 24 degrees and that the angle of elevation to the top of the flagpole atop the building is 27 degrees (as shown in the picture). Find the height of the building and the length of the flagpole.



4) Ms. Millican is in a lighthouse 350 feet above sea level and she observes two ships directly offshore. The angles of depression to the ships are 4° and 6.5°. How far apart are the ships?

5) A shoreline runs north-south, and a boat is due east of the shoreline. The bearings of the boat from two points on the shore are 110° and 100°. Assume the points are 550 feet apart. How far is the boat from the shore?



6) Two fire towers are 30 kilometers apart, tower A being due west of tower B. A fire is spotted from the towers, and the bearings from A and B are E 14° N and W 34° N, respectively. Find the distance d of the fire from the line segment AB.