Word Problems Practice Worksheet

Name: _____

Solve the following word problems using the Pythagorean theorem, trigonometric ratios or trigonometric functions.

1) Joe is standing a distance of 20 m away the base of a tower. He is looking up at the tower at a 40° degree angle. What is the height of the tower?

2) A wire has an angle of 28° from the ground. It has a vertical height of 1.8 m. What is the length of the wire?

3) A damaged tree is supported by a guy wire 10.0 m long. The wire makes an angle of 67° with the ground. Calculate the height at which the guy wire is attached to the tree.

4) Richard is flying a kite. The kite string makes an angle of 57° with the ground. If Richard is standing 100 feet from the point on the ground directly below the kite find the length of the kite string.

5) A fire department's ladder is 60 feet long and the safety regulations state that they can use it for angles up to 70° from the ground. To what safe height can the ladder be placed with the ground?

6) From the base of a building I have to look upwards at an angle of 23° to sight the top of a tree. From the top of a building, 250 meters above ground level, I have to look down at an angle of depression of 50° to look at the top of the tree.

a. How far am I to the tree?

b. How far from the building is the tree?