**Applications of Right Triangle Trigonometry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Read the problem carefully.

2. Draw and label the triangle.

3. Set up the equation.

4. Solve the equation.

5. Write a statement for the missing information.

You and your partner must write in different color pencils.

Do not switch colors!

Each of you should work together to solve these problems.

1) A boy who is flying a kite lets out 300 feet of string which makes an angle of elevation of. Assuming that the string is stretched taut, find, to the *nearest foot*, how high the kite is above ground.

2) Find, to the *nearest degree*, the angle which the sun’s rays make with the ground when a flagpole 40 feet high casts a shadow 30 feet long.

3) An airplane rises at an angle of elevation of . Find, to the *nearest foot*, the distance it has flown when it has covered a horizontal distance of 1500 feet.

4) The top of a 40-foot ladder which is leaning against a wall reaches the wall at a point 36 feet from the ground. Find, to the *nearest degree*, the angle which the ladder makes with the wall.

5) The taut string of a kite makes an angle of elevation of 60 degrees. The length of the string is 400 feet. What is the height of the kite, to the *nearest* *tenth*?

6) An observation tower is 75 m high. A support wire is attached to the tower 20 m from the top and has an angle of depression of 46 degrees, what is the length of the support wire, to the *nearest tenth.*.

7) At a point 30 feet from the base of a tree, the angle formed with the ground looking to the top measures . Find, to the *nearest foot*, the height of the tree.

8) At a point on the ground 40 feet from the foot of a tree, the angle of elevation of the top of the tree is . Find the height of the tree, to the *nearest tenth of a foot.*

9) An observer in a balloon, which is 2000 feet above an airport, finds that the angle of depression of a steamer ship out at sea is 21 degrees. Find, to the *nearest hundred feet*, the distance between the observer in the balloon and the steamer ship at sea.