**Using Trigonometry to Measure the Height of a Tree**

Materials:

Clinometer (see instructions on how to make a clinometer)

Measuring Tape

Directions: Go outside and find a tree that you want to measure. Then, start measuring! The diagram below may help you to see what measurements are necessary (or what measurements are even possible to find). Then, use trigonometry to help you find the height of the tree. (Draw the right triangle on the diagram below and label all measurements.)





Clinometer

A clinometer is device used to measure the angle of elevation.

How to make a clinometer:

1. Get your supplies: a drinking straw, tape, protractor, string, and a weight (such as a paper clip or a washer).
2. Tape a straw along the straightedge of the protractor
3. Tie the string onto the straw *exactly* at the center of the straightedge.  You will not get accurate readings unless the string is at the center.  (If there is a hole at the center of your protractor, you can put the string through this hole and tie.)

4. Attach the weight to the string so it hangs taut.  To check for accuracy, when you hold your clinometer parallel to the ground (no

elevation) the string should hang at 0°

