NAME: _____ DATE: _____   Oregon Forest
Resources Institute

HOW TALL?

By measuring the heights of trees, foresters can estimate the amount of wood the trees contain, or predict how much shade they will create. Foresters use a special instrument called a clinometer to accurately measure, but you can estimate the height using a ruler.

Directions: Use a ruler, a friend and some simple math to estimate how tall a tree is. You won't need to climb to the top with a long tape measure!

1. Find a spot where you can see the tree from top to bottom without moving your head. Ask your friend to stand at the base of the tree.

2. Hold a ruler in one hand and stretch out your arm so that the ruler is at arm's length in front of you. Step backward or forward until the top and bottom of the ruler line up with the top and bottom of the tree.

3. Look where the top of your friend's head appears to be on the ruler. Note that number to the nearest half-inch or centimeter:

   _____
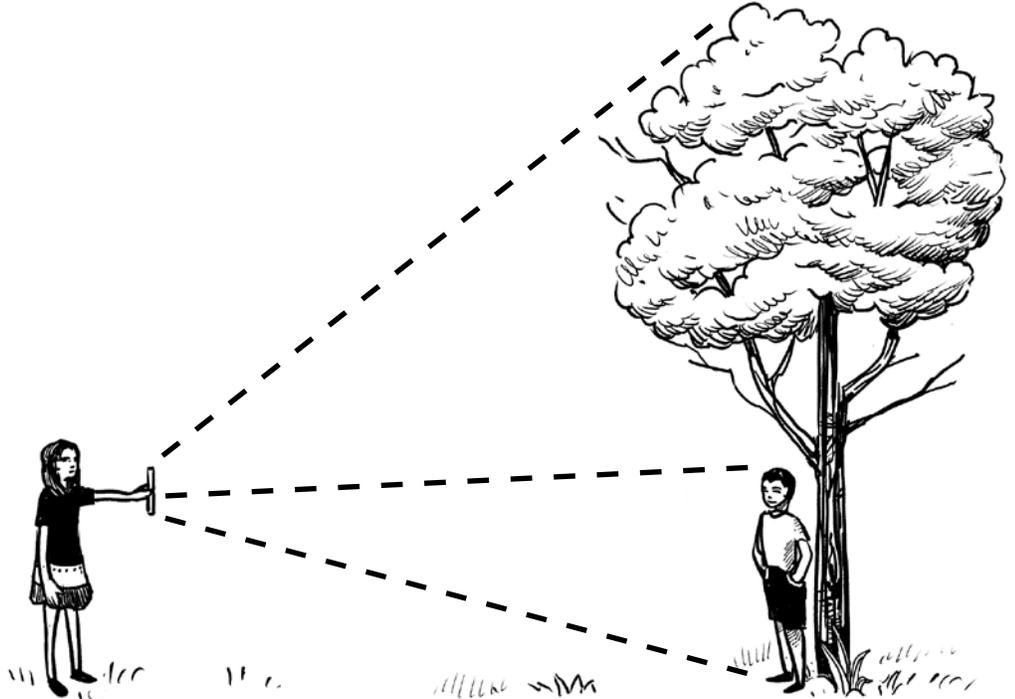
   This is your friend's "apparent height."

4. Divide the length of the ruler by your friend's apparent height.

$$\frac{\qquad}{\text{length of ruler}} \div \frac{\qquad}{\text{friend's apparent height}} = \frac{\qquad}{\text{ratio}}$$

5. To calculate the tree height, multiply your friend's actual height (in inches or centimeters)* by the ratio from step 4.

$$\frac{\qquad}{\text{friend's actual height}} \times \frac{\qquad}{\text{ratio}} = \boxed{\frac{\qquad}{\text{tree height}}}$$

Be sure to include the units (inches or centimeters) for the tree height.

*Tip: Your friend's actual height must be in the same units as your ruler – inches or centimeters. If your friend is 4 feet, 8 inches tall, you would write in 56 inches (48 inches + 8 inches).

Did You Know?

Oregon's tallest known tree is a coast Douglas-fir in Coos County. It is a towering 327 feet (99.7 meters) tall!