



## Simple Tools for Measuring Tree Heights

Are you planning to conduct a basic inventory of your woodlot? Here are two simple methods of collecting tree height information for woodlot owners who do not need precise measurements. The two methods described below will provide you with a fairly good estimate of tree heights that can be used in a basic inventory.

Remember the heights are estimates only, and if you are collecting detailed inventory information for a timber sale or any type of timber volume calculation, a more precise measurement is required. This would require heights to be measured using precision instruments specifically designed for this purpose – e.g. a hand-held clinometer like a Suunto.

### Height of Person Method

Using the “height of a person” method requires no special equipment. All you need is a pencil and someone to stand at the base of the tree. Here is how it works.

Three easy steps...

1. Line up the pencil with your partner standing at the base of the tree. Move slowly away from the tree until the top of the pencil is in line with the top of your partner's head and the bottom of the pencil is lined up with his feet.
2. Now estimate how many pencil lengths it takes to reach the top of the tree.
3. Multiply this number by the height of your partner. For example, in Figure 1 you have completed four sightings, or required four pencil lengths to reach the top of the tree. If your partner is 1.8 metres tall, the height of the tree is  $1.8 \text{ metres} \times 4 = 7.2 \text{ metres}$  or 24 feet.

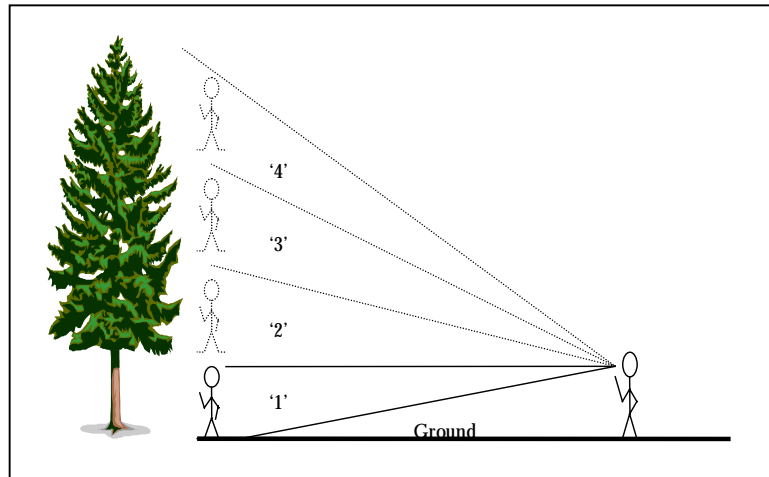


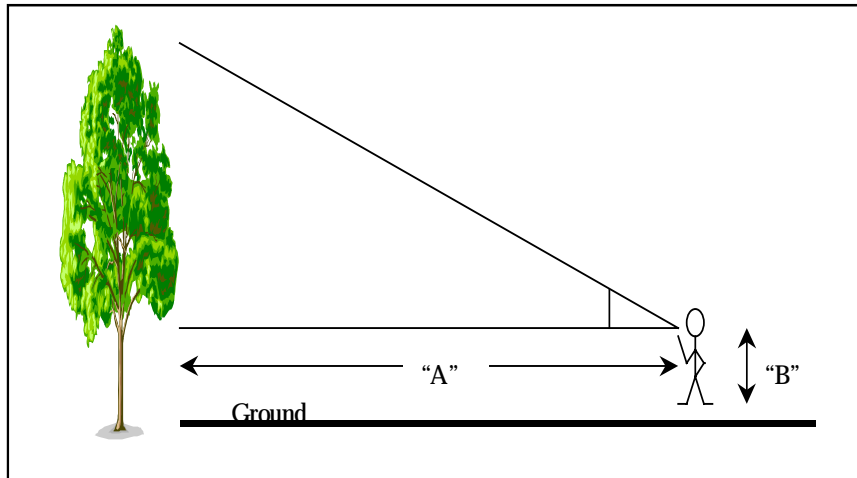
Figure 1: Height of Person Method – To be more accurate, repeat the activity several times and find the average height.

## Right Angle Triangle Method

Here is a second method you can use to measure tree heights. All you need is a 10-metre tape measure and a geometrical angle triangle. These plastic angle triangles can be purchased at stationery stores such as Staples for under \$5.00.

Three easy steps...

1. Sight along the long side of the triangle, and begin to back slowly away from the tree until the top of the tree comes into view. It is important to ensure the bottom of the triangle is parallel to the ground. You may want to have a partner monitor your measuring technique to ensure the bottom edge of the triangle remains parallel to the ground.
2. Once the treetop has come into view, measure the distance ("A") from this point to the base of the tree.



3. The height of the tree is obtained by adding the distance ("A") plus the height of the individual ("B") taking the measurement. For example, if the distance from the tree is 17 metres and the height of the individual doing the measuring is 1.8 metres, the height of the tree is 18.8 metres.

Figure 2: Right Angle Triangle Method – remember, when calculating the height using a 45- or 90-degree triangle, keep the long edge of the triangle parallel to the ground.

heights. You may want to keep these instructions, along with other timber inventory tips provided in the two-part series entitled "Art of Timber Cruising". A copy of these articles can be found online on the [Useful Links & Publication](#) page of the Web site <[www.ontariowoodlot.com](http://www.ontariowoodlot.com)>.

These are two very simple methods for woodlot owners to measure tree

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