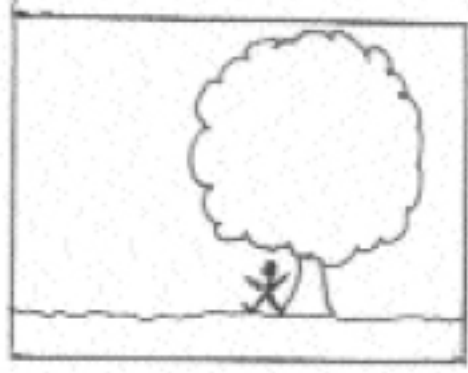


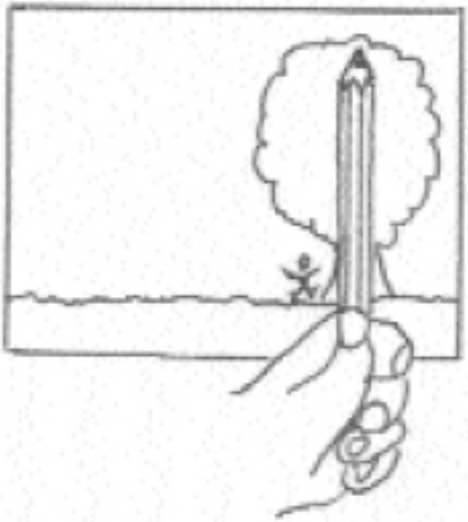
How tall is your tree?



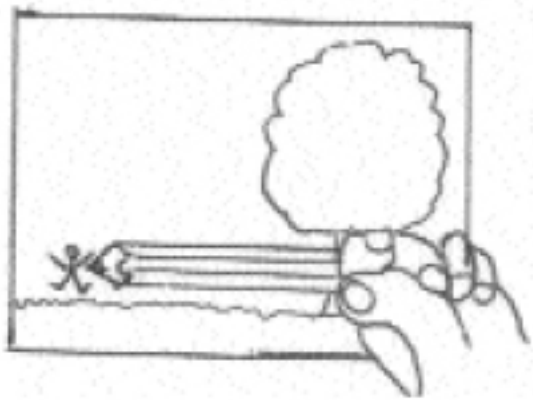
Method A



Find the tree that you want to measure and ask your partner to stand next to it.



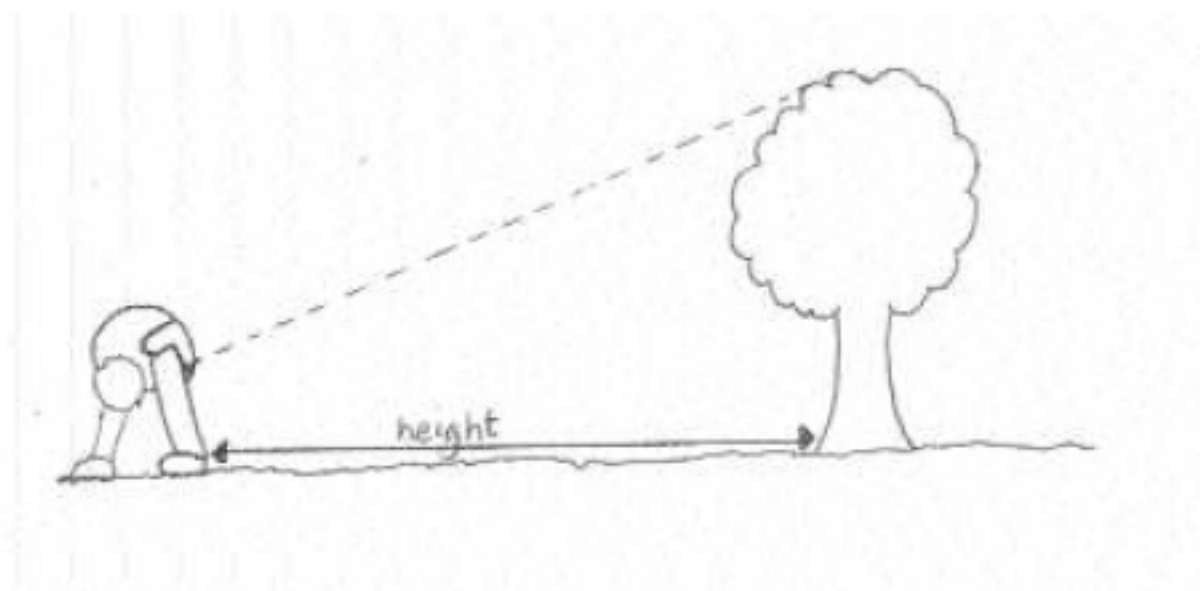
Hold a pencil in your hand, at arms length. Walk backwards away from the tree until the pencil is the same height as the tree.



Turn the pencil until it is in line with the ground. Ask your partner to walk away from the tree and stop them when they reach the tip of the pencil. The distance from your partner to the tree is the height of the tree.

Method B

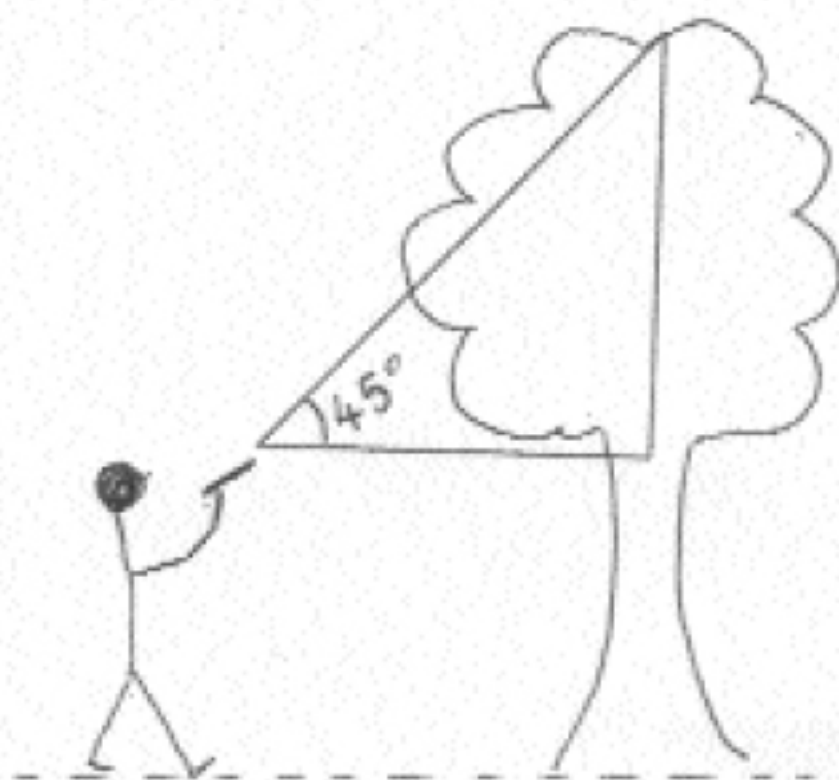
This is a method used by the Native Indians for hundreds of years.



Turn your back on the tree you have chosen and begin to walk away from it.

Every 2 or 3 metres, stop, bend over and look at your tree between your legs. Keep walking until you can see the top of your tree. When you can see the top of the tree, the distance between you and the tree is the height of the tree.

Method C



This method uses the idea behind an isosceles triangle, where the height and the base are the same length.

You will need a clinometer (these can be made using a protractor and plumb line). Move away from the tree until the the clinometer gives a 45 angle as shown.

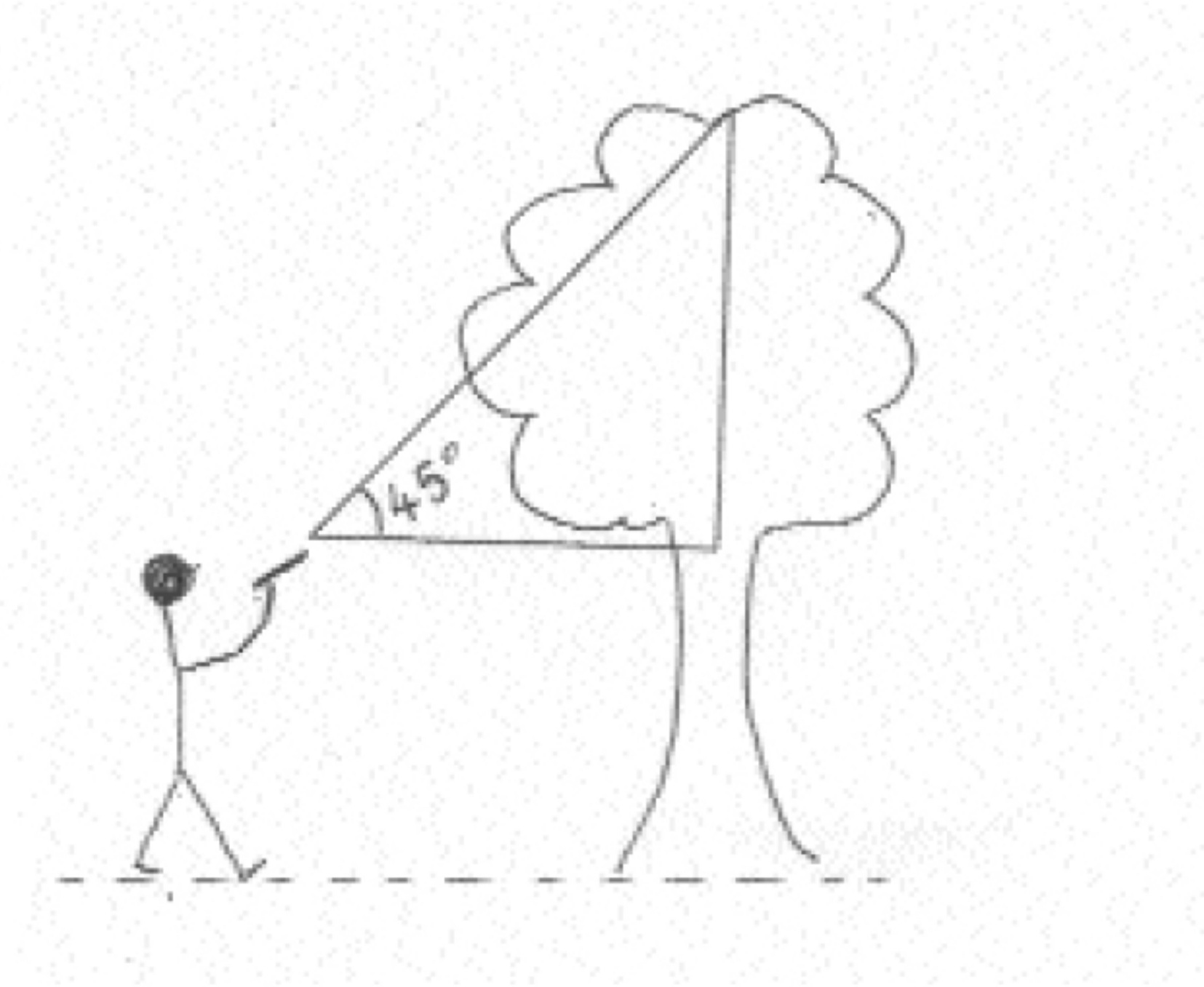
Alternatively, make an isosceles triangle out of card and hold at eye level, looking along the longest edge. Move backwards until the top of the triangle appears to 'touch' the top of the tree.

The height of the tree = the height of the person + the distance of the person from the tree

Method D

This is a challenging activity for more able pupils.

They will need prior knowledge of angles, scales and accurate construction of triangles.



measured distance

Stand a measured distance from the tree.

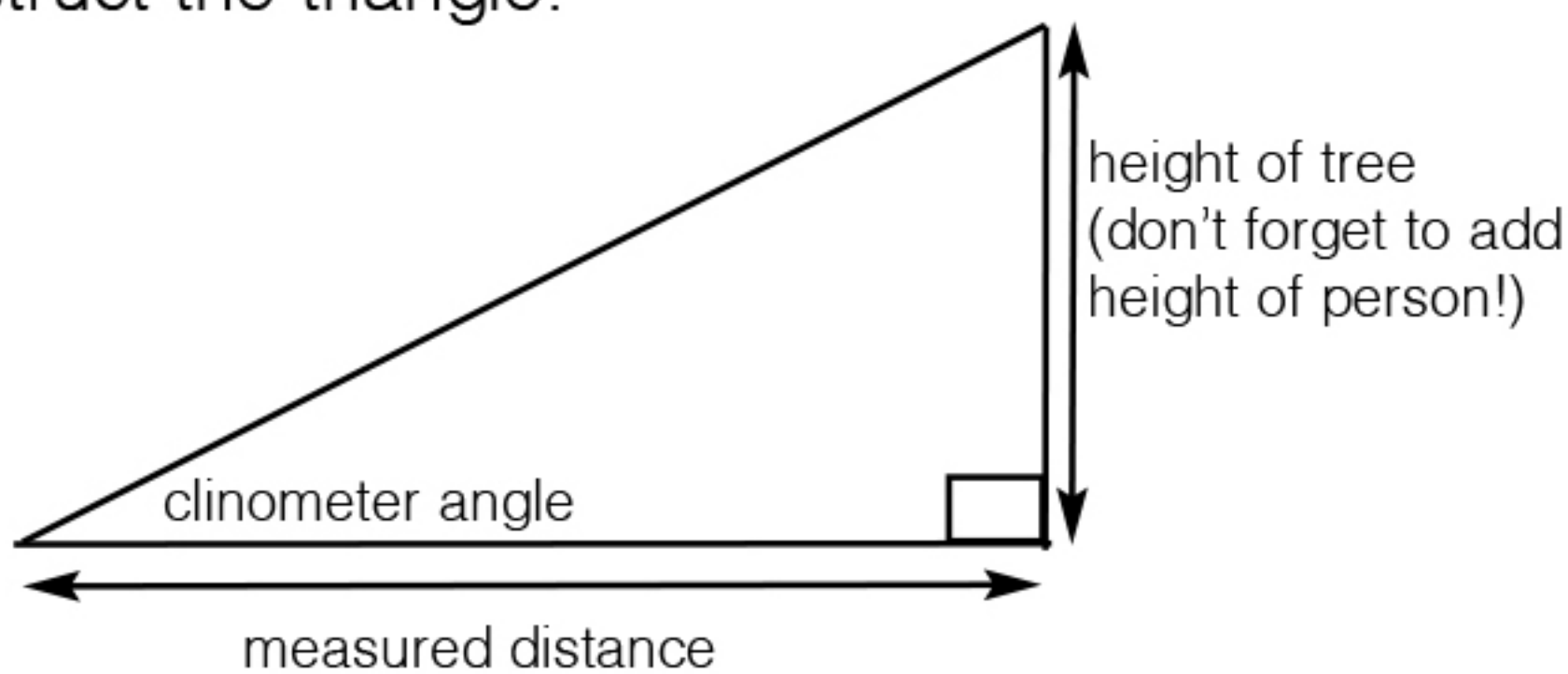
Point the clinometer at the top of the tree and squeeze trigger.

Read the angle.

A triangle can be drawn if you know the two angles and the distance between them.

Choose a suitable scale (eg 1cm : 1m)

Construct the triangle.



NB

A clinometer can be made by attaching a plumb line to a protractor.

The white board protractors are particularly good.