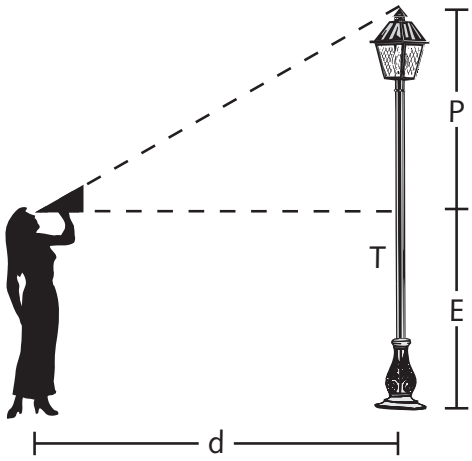
HOW HIGH? The Right Stuff

Determining Height Using
45°-45°-90° and 30°-60°-90° Triangles

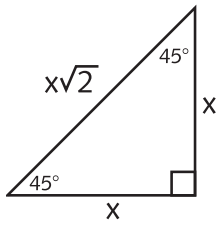
Since the special right triangle ratios are based on similar triangles (e.g. all 45°-45°-90° triangles are similar), these triangles may be used to determine unmeasureable heights. Use the cardboard triangles to determine the height of three objects by following the instructions below.

1. Measure the height of your eyes or one person in your group.
2. Look along the hypotenuse of your triangle and move forward or backward to line up the top of your object. REMEMBER: It is very important to keep the bottom edge of the tool parallel with the ground. Have your partner make sure the triangle is level.
3. Once this is achieved, measure the distance from where you are standing to the base of the object.
4. Take this measurement and perform the appropriate calculation; this gives you the preliminary height. Finally, add the eye height to determine the total height of your object.



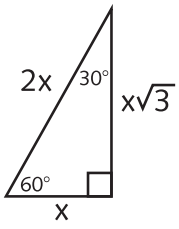
45° - 45°

Object	Distance to Object	Preliminary Height	Eye Height	Actual Height



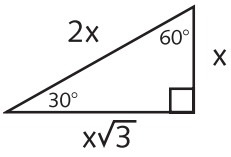
60° - 30°

Object	Distance to Object	Preliminary Height	Eye Height	Actual Height



30° - 60°

Object	Distance to Object	Preliminary Height	Eye Height	Actual Height



For each object above, on the backside of this sheet, draw and label the appropriate special right triangle diagram and show the corresponding calculation used to determine the height of the object.