Reaching New Heights with Triangulation Worksheet

Elevation angle (angle θ)	
Horizontal distance to object (adjacent side)	
Height of observer's eye (opposite side)	

Height of object
from eye (opposite side)

Elevation angle (θ)

Horizontal distance to object (adjacent side)

Height of observer's eye
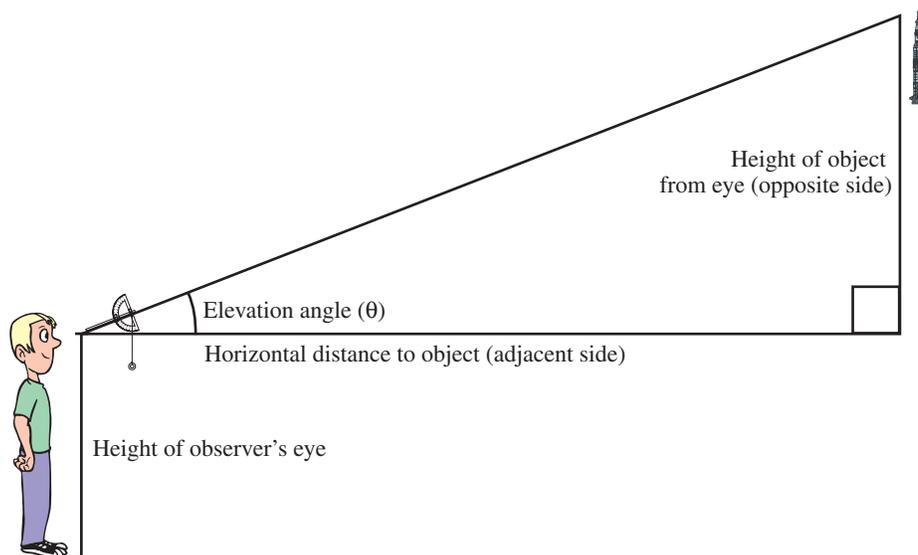
Figure 4.

To determine the height of the object from the observer's eye, use the following trigonometric formula:

Tan θ = opposite / adjacent

Opposite (height of object from eye) = tan θ × adjacent

Height of object from eye	
Total height of object from the ground	

Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

1. Triangles are named based on what two measurements?

2. What type of triangle was used in this activity?

3. Why is it important to know the height of the eye?

4. The rocket image is that of the Saturn V, used to send Apollo to the Moon. The image is 24 cm tall. The actual Saturn V rocket is 110.64 m tall. Determine the scale of the rocket and use the scale to determine the height of the rocket if were an actual Saturn V were being launched.