

Similarity/Indirect Measurement

CA Standards: 18.0, 19.0

Student use trig functions to find a missing side in a right triangle.

Use a Clinometer

1. Select a specific distance (marked on the ground) and have one individual stand near it.
2. Using the clinometer, measure the angle of inclination from the individual to the top of the flagpole (by lining up your eyes to the top of the clinometer)
3. Record your data

	Angle of inclination (in degree)	Distance from the bottom of the pole
Point 1		
Point 2		
Point 3		

4. Repeat step 1 and 2 two more times at two different distance from the bottom of the flag pole
5. Return to the classroom and determine the height of the flag pole

Calculation

Using point 1, the height of the flagpole is:

Calculation

Using point 2, the height of the flagpole is:

Calculation

Using point 3, the height of the flagpole is:

Conclusion

- 1. What can you conclude about your three calculations?**
- 2. How is my answer compare to the actual height of the flagpole? Are they the same or different? If different, why?**
- 3. What can your group do to make your answer more accurate? Re-calculate the height again by choosing any of the three sets of data.**