

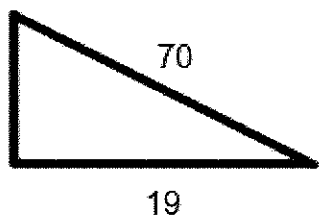
SOH CAH TOA
Student Practice

Objective: The objective of this lab is to become an expert at using sin, cos, tan, and Pythagorean trig functions to find common angles and lengths of right triangles.

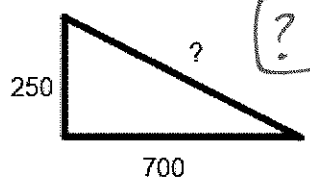
1. All of these trig functions that we will be using here only work with Right triangles.

2. Solve for the "?". Anything that goes into your calculator needs to be shown here.

$19^2 + ?^2 = 70^2$
 $? = \sqrt{70^2 - 19^2}$
 $? = 67.3$

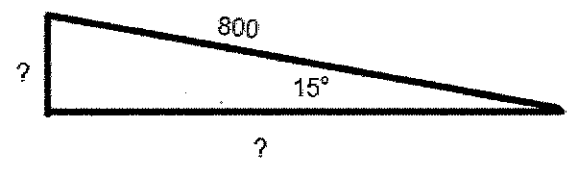


3. Solve for the "?".



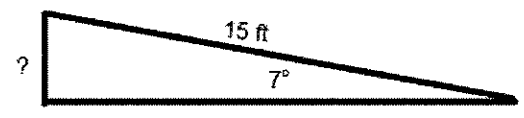
4. Use the space below to solve for each "?" separately.

Y: $\sin(15) \cdot 800 = 207$
 X: $\cos(15) \cdot 800 = 772$



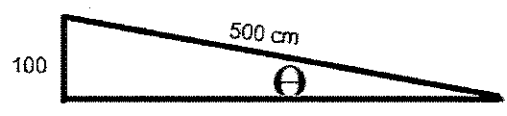
5. Your grandma walks 15ft up a ramp at 7°, how high up is she at the end of the ramp?

$\sin \theta = \frac{\text{opp}}{\text{hyp}}$ $\sin \theta \cdot \text{hyp} = \text{opp}$
 $\sin(7) \cdot 15 = 1.82 \text{ ft}$



6. A ball is dropped on a ramp that is 100cm high and rolled for 500cm along the ramp. What is the angle of the ramp?

$\sin \theta = \frac{\text{opp}}{\text{hyp}}$
 $\theta = \sin^{-1}\left(\frac{100}{500}\right) = 11.5^\circ$



7. Chuck walks 15° east of north for 500 yard reaching his car.
- On the drawing to the right, add an x to represent the distance traveled in the x direction.
 - On the drawing to the right, add an y to represent the distance traveled in the y direction.
 - How far to walk directly to the school at this point?
 - How far will to walk directly to the store?

$\sin \theta = \frac{\text{opp}}{\text{hyp}}$ $\sin 15 \cdot 500 = 129$
 $\cos \theta = \frac{\text{adj}}{\text{hyp}}$ $\cos 15 \cdot 500 = 482$

