# Notes for lesson 8-6 (part II) the Cosine Function

Today we will introduce the last trig functions to help us solve right triangles.

Cosine < x = $\frac{\text{side adjacent to < x}}{\text{hypotenuse}}$

Two easy ways to remember these three functions are below:

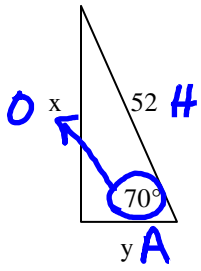
**SOH CAH TOA**

**S**ome **O**ld **H**orse **C**aught **A**nother **H**orse **T**aking **O**ats **A**way

Each letter stands for part of the triangle or the function you need.
O = opposite side, A = adjacent side, H = hypotenuse, S = sine, C = cosine, and T = tangent.

Use the appropriate function to solve for each of the variables below.

1)



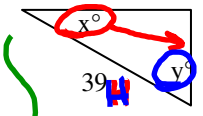

$\sin 70 = \frac{x}{52}$

$x = 48.86$

$\cos 70 = \frac{y}{52}$

$y = 17.79$

2)



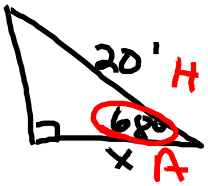

$\sin x = \frac{18}{39}$

$x = 27.49°$

$\cos y = \frac{18}{39}$

$y = 62.51°$

3) A 20 foot ladder leans against a house. It leans at an angle of 68°. How far is the ladder away from the base of the house?




$\cos 68 = \frac{x}{20}$

$x = 7.49 \text{ ft}$