

# An Introduction to Trigonometry...

Angle of Elevation

vs

Angle of Depression

In a Right Triangle, we define the following ratios:

sine:

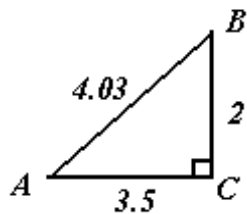
cosine:

tangent:

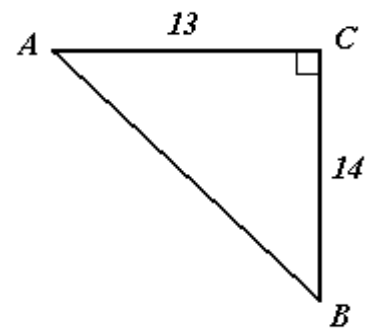
**In each triangle, find  $\sin A$ ,  $\cos A$ ,  $\tan A$ ,  $\sin B$ ,  $\cos B$ , and  $\tan B$ .**

(Figures are not necessarily drawn to scale.)

1.)



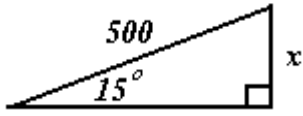
2.)



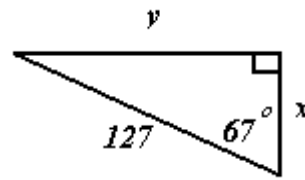
## An Introduction to Trigonometry... Part II

Find the value of the variable(s) in each problem.

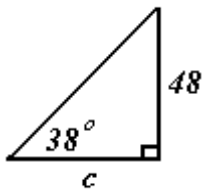
1.)



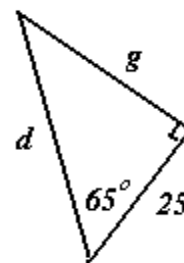
2.)



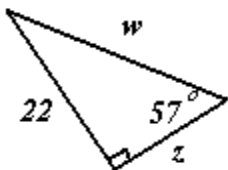
3.)



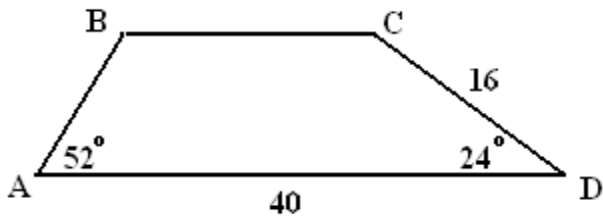
4.)



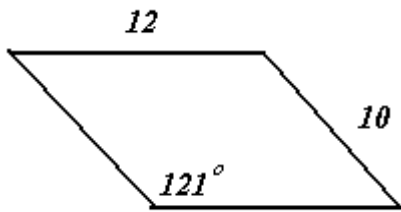
5.)



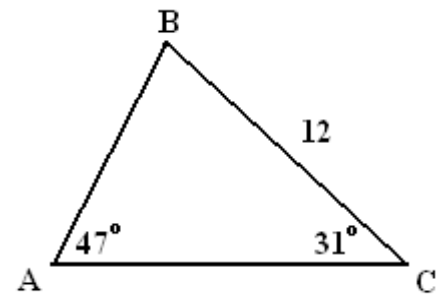
6.) Given the trapezoid, find BC and AB.



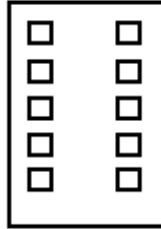
7.) Find the height of the parallelogram.



8.) Find AB and AC.



9.) John stands 110 feet away from a large office building. He looks up at a 72 degree angle to see the top of the structure. If John's eyes are 5.5 feet off of the ground, how tall is the building to the nearest foot?



10.) Using "laser" technology, Dr. Frankenstein estimates the distance from himself to a flying saucer to be 1200 miles. If the object forms a 32 degree angle with the laser (which is stationed 1 mile off the ground), how high in the sky is the saucer?

11.) A tree forms an angle of elevation of 40 degrees with a spot on the ground 36 meters away. How tall is the tree?

12.) A para glider is behind a boat, attached by a 400 foot rope to a point on the boat 15 feet above the water. A passenger on the boat sees that the rope makes a 35 degree angle with the horizontal. How high above the water is the para glider?