

# Day 1: Sine, Cosine, and Tangent

## Right Triangle Trigonometry

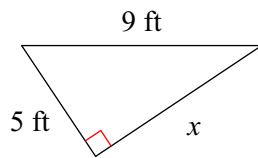
1) To find a missing side of a right triangle use the \_\_\_\_\_.

This Theorem is \_\_\_\_\_.

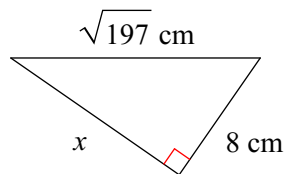
\_\_\_\_\_ and \_\_\_\_\_ are the legs and \_\_\_\_\_ is the hypotenuse.

### Find the missing side of each triangle.

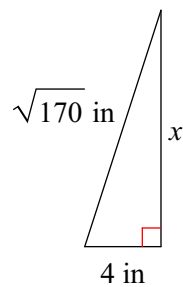
2)



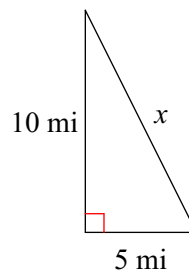
3)



4)



5)



## Trigonometry Ratios

6) Trig Ratios can be used to find missing sides and missing angles of \_\_\_\_\_ triangles.

The following are trig ratios (you need to memorize these):

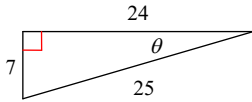
Sine which has the ratio of  $\sin \theta =$

Cosine which has the ratio of  $\cos \theta =$

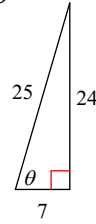
Tangent which has the ratio of  $\tan \theta =$

Find the value of the trig function indicated.

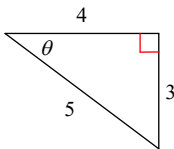
7)  $\cos \theta$



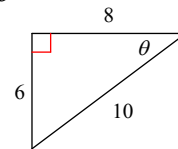
8)  $\sin \theta$



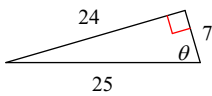
9)  $\tan \theta$



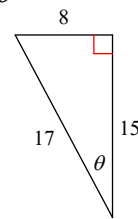
10)  $\cos \theta$



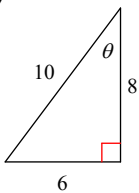
11)  $\tan \theta$



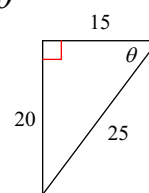
12)  $\sin \theta$



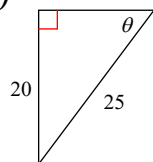
13)  $\sin \theta$



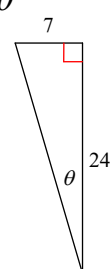
14)  $\cos \theta$



15)  $\cos \theta$



16)  $\sin \theta$



17) Given any trig value we can construct the triangle and find all other trig values.

If  $\sin \theta = \frac{4}{5}$  what is  $\tan \theta$ ?

First construct your right triangle and label sides given.

Next, use pythagorean theorem to solve for the missing side.

Evaluate trig functions using the constructed triangle.

$\tan \theta =$  \_\_\_\_\_

$\cos \theta =$  \_\_\_\_\_

**Find the value of the two remaining trig functions.**

18) If  $\cos \theta = \frac{4}{5}$  then

$\sin \theta =$  \_\_\_\_\_

$\tan \theta =$  \_\_\_\_\_

19) If  $\sin \theta = \frac{1}{7}$  then

$\cos \theta =$  \_\_\_\_\_

$\tan \theta =$  \_\_\_\_\_

20) If  $\sin \theta = \frac{\sqrt{2}}{2}$  then

$\cos \theta =$  \_\_\_\_\_

$\tan \theta =$  \_\_\_\_\_

21) If  $\sin \theta = \frac{15}{17}$  then

$\cos \theta =$  \_\_\_\_\_

$\tan \theta =$  \_\_\_\_\_