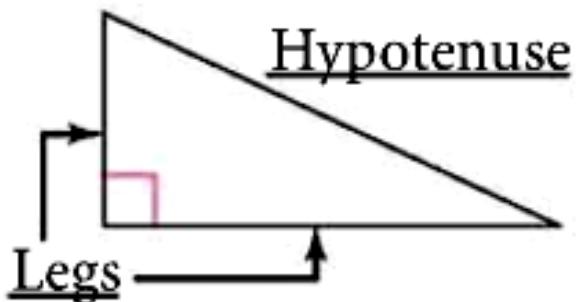


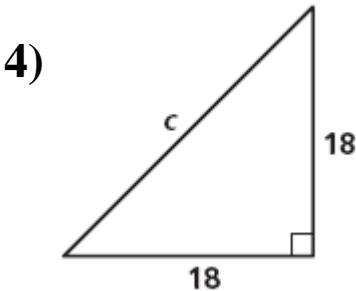
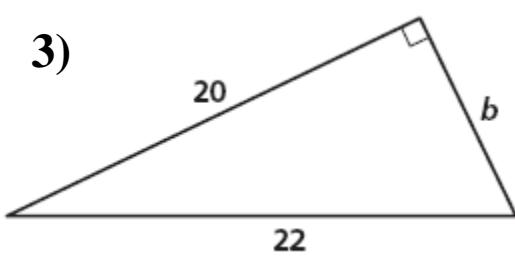
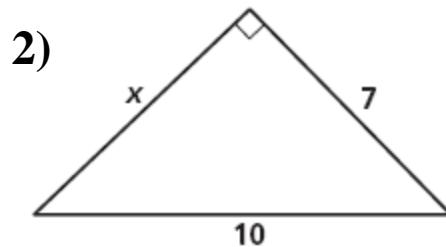
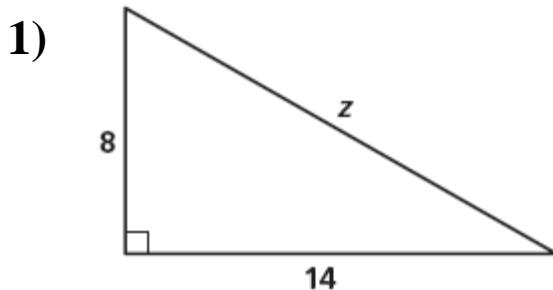
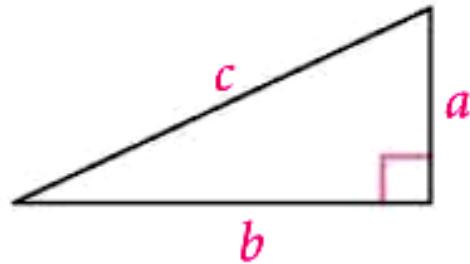
## Station 1 “Pythagorean Theorem”

Finding the missing side



### Pythagorean Theorem

$$c^2 = a^2 + b^2$$



## **Station 2 “Pythagorean Triples”**

A set of **whole** numbers  $a$ ,  $b$ , and  $c$  that satisfy the equation

$$\textcolor{red}{c}^2 = a^2 + b^2$$

**Write True or False for the three numbers if the numbers could form a triangle and then if the numbers are a Pythagorean triple**

1) 9, 12, 15

2) 6, 8, 14

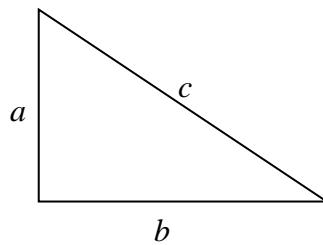
3) 8, 15, 17

4) 5, 5, 9

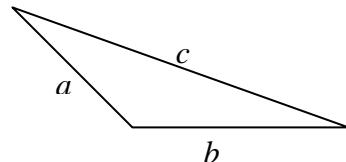
5) 5, 12, 13

## Station 3 “Classifying Triangles”

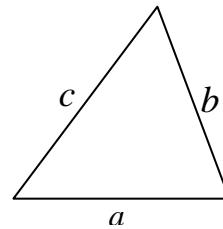
Right triangle when:  $c^2 = a^2 + b^2$



Obtuse triangle when:  $c^2 > a^2 + b^2$



Acute triangle when:  $c^2 < a^2 + b^2$



1) 4, 7, 10

2) 12, 13, 14

3) 8, 15, 17

4) 8, 8, 8,

5) 6, 6, 10

6) 6, 6, 8

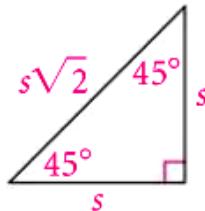
## Station 4 “Right Isosceles Triangles 45-45-90 Triangle”

### Theorem 8-5

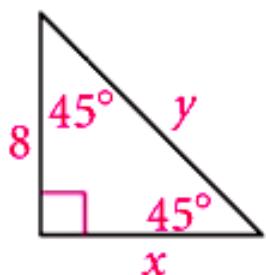
### 45°-45°-90° Triangle Theorem

In a 45°-45°-90° triangle, both legs are congruent and the length of the hypotenuse is  $\sqrt{2}$  times the length of a leg.

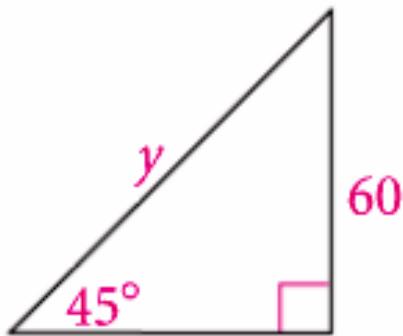
$$\text{hypotenuse} = \sqrt{2} \cdot \text{leg}$$



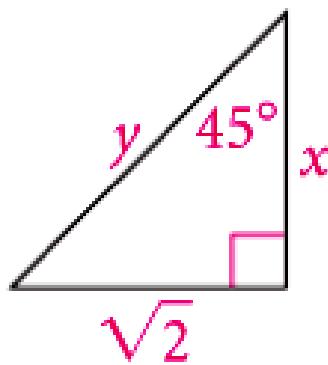
1)



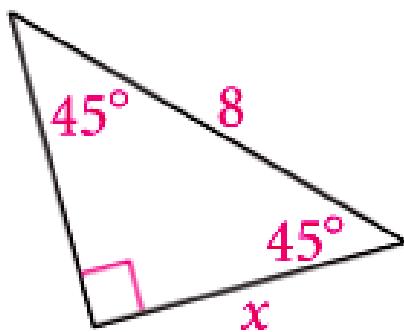
2)



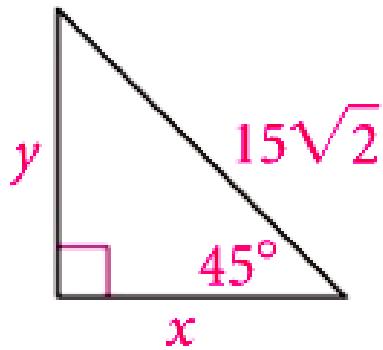
3)



4)



5)



## Station 5 “30-60-90° Triangles”

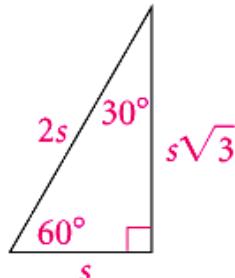
### Theorem 8-6

### 30°-60°-90° Triangle Theorem

In a 30°-60°-90° triangle, the length of the hypotenuse is twice the length of the shorter leg. The length of the longer leg is  $\sqrt{3}$  times the length of the shorter leg.

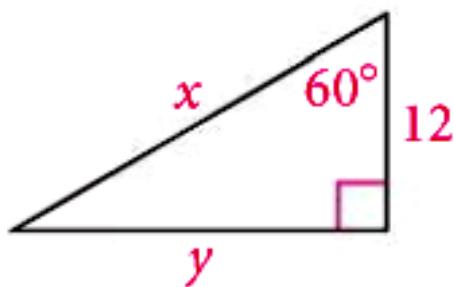
$$\text{hypotenuse} = 2 \cdot \text{shorter leg}$$

$$\text{longer leg} = \sqrt{3} \cdot \text{shorter leg}$$

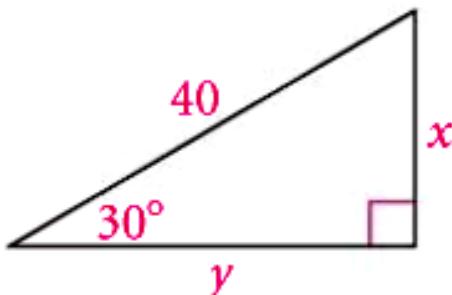


### Find the value of the variables

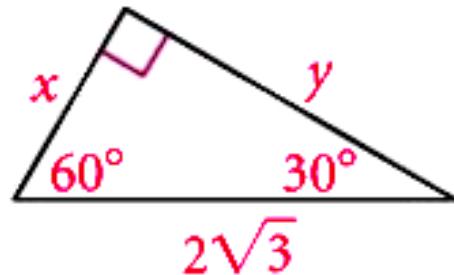
1)



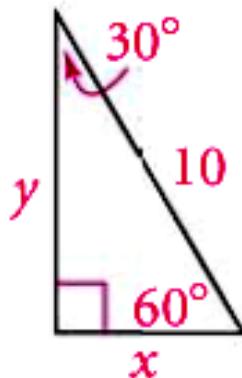
2)



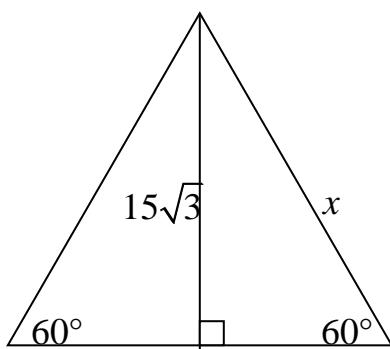
3)



4)

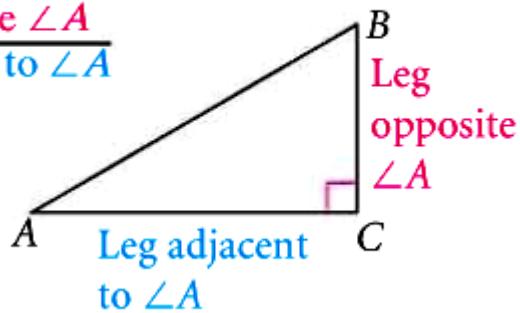


5)



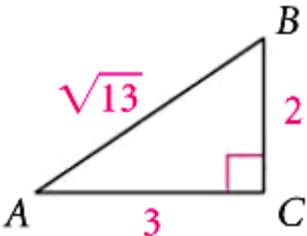
## Station 6 “Tangent”

**tangent** of  $\angle A = \frac{\text{length of leg opposite } \angle A}{\text{length of leg adjacent to } \angle A}$



- 1) Write the tangent ratios for  $\angle A$  and  $\angle B$

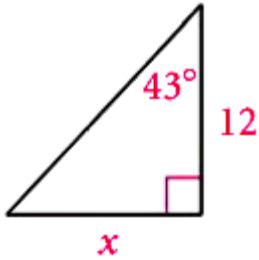
$$\tan \angle A = \text{_____}$$



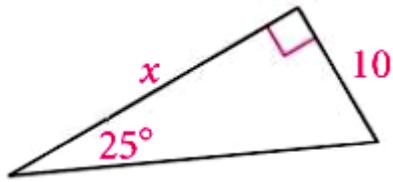
$$\tan \angle B = \text{_____}$$

**Find the value of  $x$**

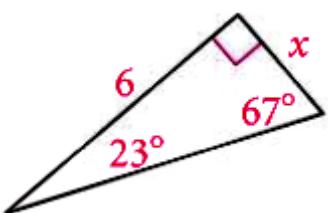
2)



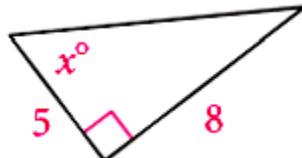
3)



4)

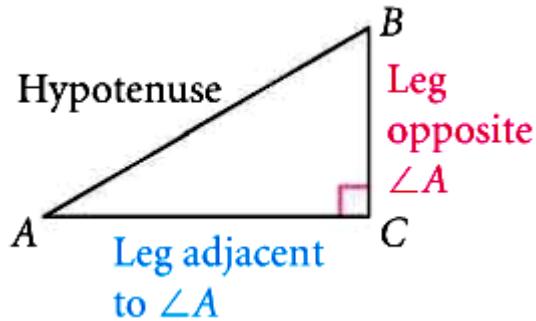


5)



## Station 7 “Sine”

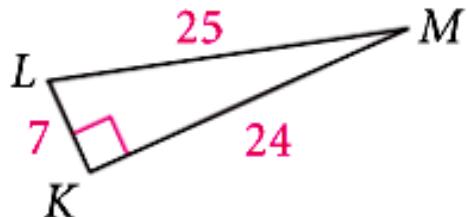
**sine** of  $\angle A = \frac{\text{leg opposite } \angle A}{\text{hypotenuse}}$



- 1) Write the sine ratios for  $\angle L$  and  $\angle M$

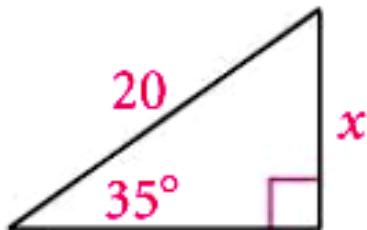
$$\sin \angle L = \underline{\hspace{2cm}}$$

$$\sin \angle M = \underline{\hspace{2cm}}$$

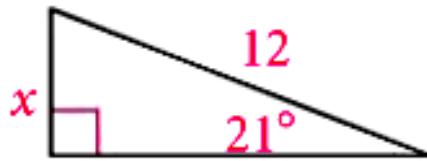


Find the value of  $x$

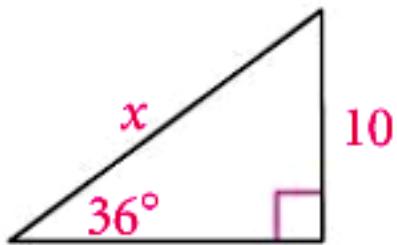
2)



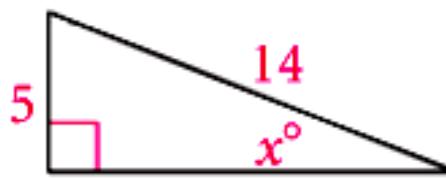
3)



4)

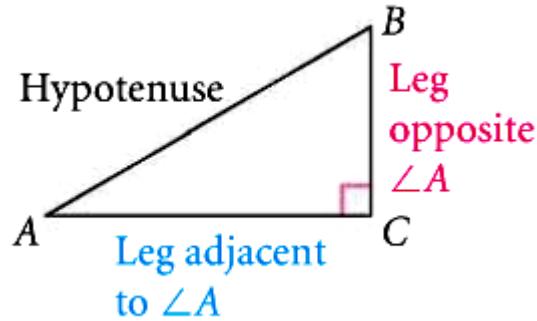


5)



## Station 8 “Cosine”

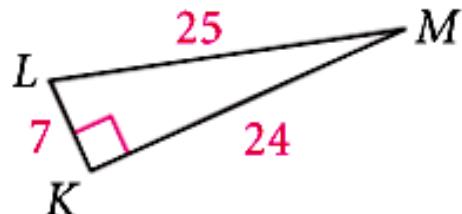
**cosine** of  $\angle A = \frac{\text{leg adjacent to } \angle A}{\text{hypotenuse}}$



- 1) Write the cosine ratios for  $\angle L$  and  $\angle M$

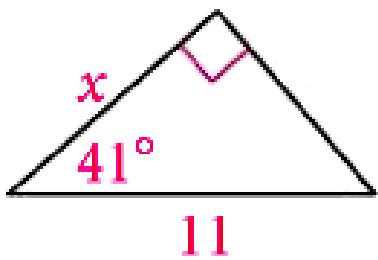
$$\cos \angle L = \underline{\hspace{2cm}}$$

$$\cos \angle M = \underline{\hspace{2cm}}$$

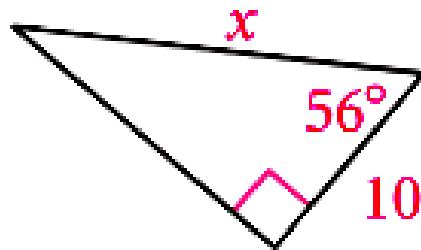


**Find the value of  $x$**

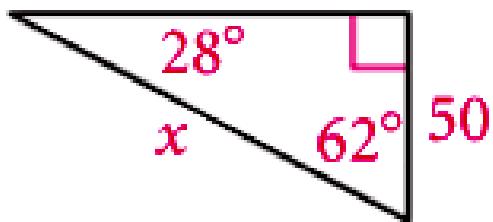
2)



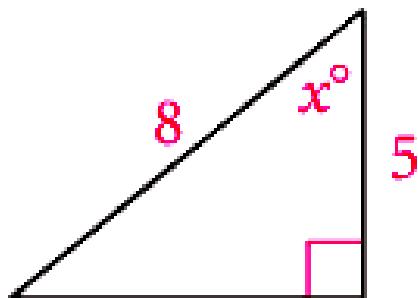
3)



4)



5)



## Station 9 “Solve the Right Triangle”

For solving angles of a right triangle use:

1. Triangle Sum theorem  $m\angle A + m\angle B + m\angle C = 180^\circ$
2. Change ratio to a decimal then look up the decimal on the table or use the inverse function of the trig function.

For solving sides of a right triangle use:

1. Use Pythagorean Theorem  $c^2 = a^2 + b^2$
2. Use Trig Formulas

**Find the measurement of  $\angle A$ ,  $\angle B$ ,  $\angle C$ ,  $AB$ ,  $BC$ , and  $CA$**

