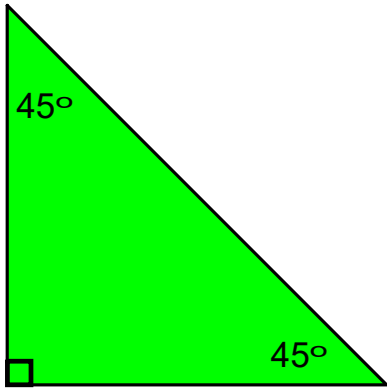


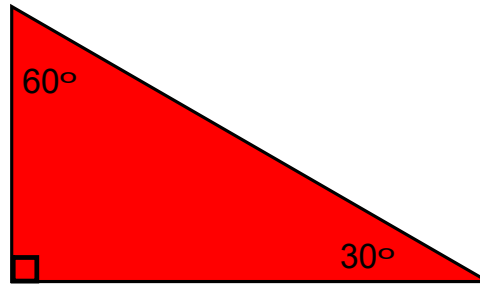
# Special Right Triangles

Two types of triangles that are commonly used are:

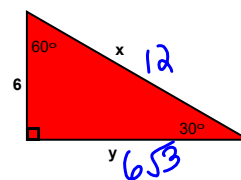
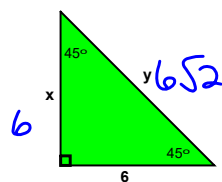
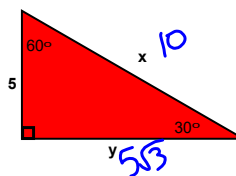
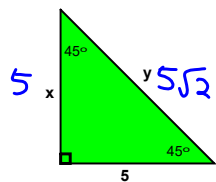
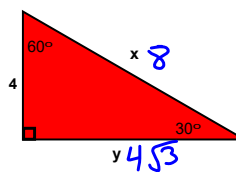
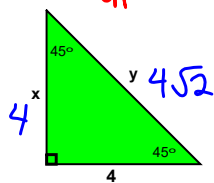
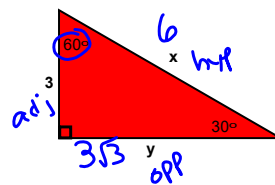
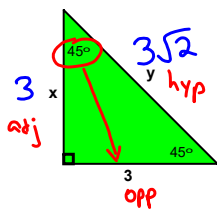
45-45-90



30-60-90



For each problem:  
 1. Use trigonometry to solve for x  
 2. Use the pythagorean theorem to solve for y.  
 LEAVE YOUR ANSWER AS A SIMPLIFIED SQUARE ROOT

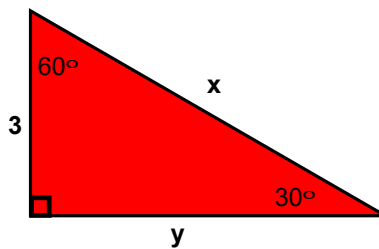
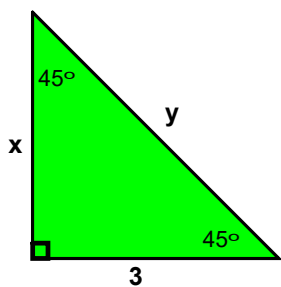


For each problem:

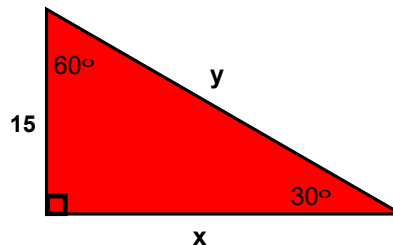
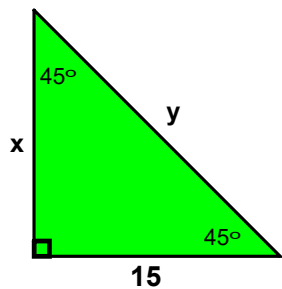
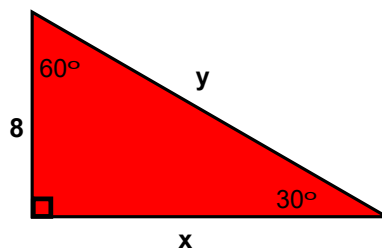
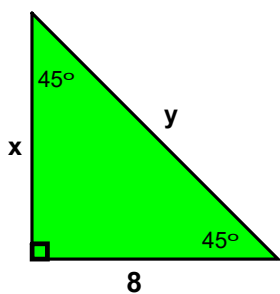
1. Use trigonometry to solve for  $x$

2. Use the pythagorean theorem to solve for  $y$ .

LEAVE YOUR ANSWER AS A SIMPLIFIED SQUARE ROOT



Now try these without using trigonometry or Pythagorean Theorem, USE THE SHORTCUTS!!



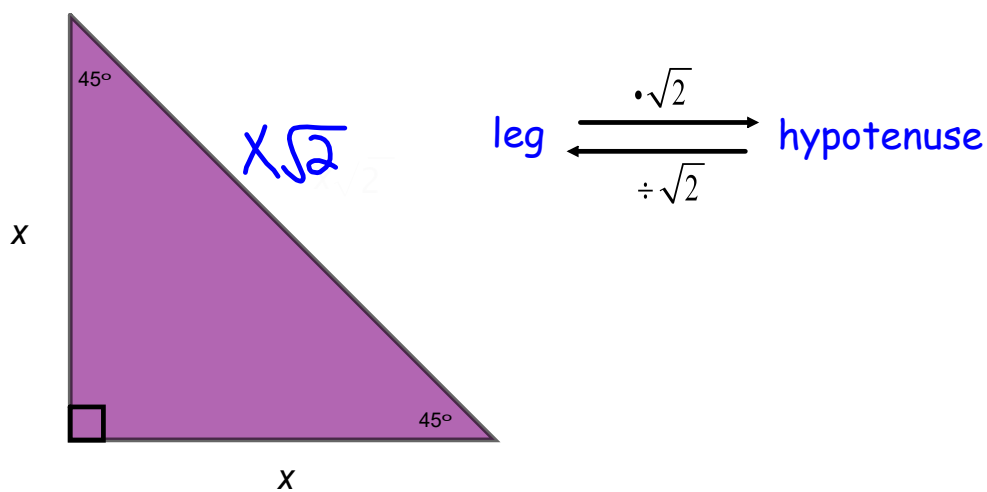
**Learning Goal:** Today I will learn about special right triangles.

**Success Criteria:** I am able to determine triangle side lengths based on a pattern.

# 8.2 Special Right Triangles

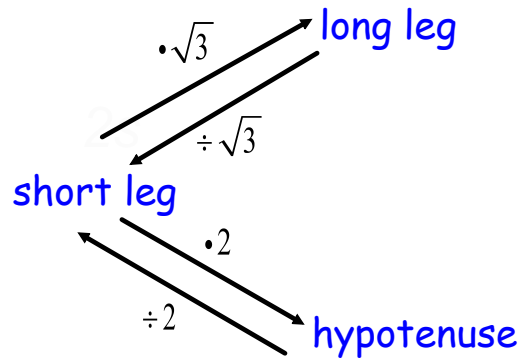
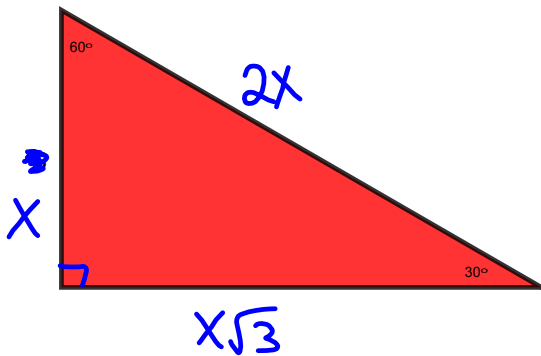
## Special Right Triangles

45-45-90



# Special Right Triangles

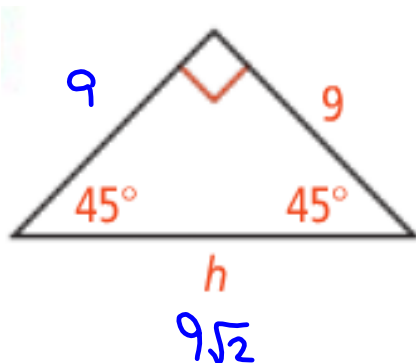
30-60-90



$s\sqrt{3}$

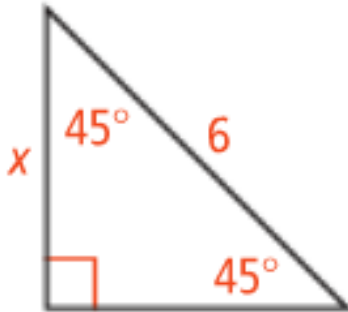
# Special Right Triangles

Find the missing values



## Special Right Triangles

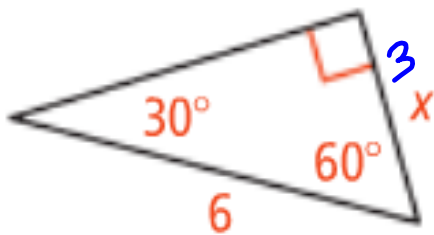
Find the missing values



$$\begin{aligned} \text{leg} &\leftarrow \div \sqrt{2} \text{ hyp} \\ \frac{6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} &= \frac{6\sqrt{2}}{\sqrt{4}} = \frac{6\sqrt{2}}{2} = \boxed{3\sqrt{2}} \end{aligned}$$

## Special Right Triangles

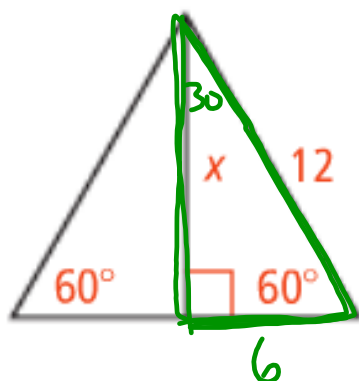
Find the missing values



$$\begin{aligned} \text{short} &\leftarrow \div 2 \text{ hyp} \\ \frac{6}{2} &= 3 \end{aligned}$$

# Special Right Triangles

Find the missing values



short  $\leftarrow \frac{1}{2}$  hyp

short  $\xrightarrow{\cdot\sqrt{3}}$  long

$$x = 6\sqrt{3}$$

**Closure:** Today I learned how to use the patterns with special right triangles to solve for unknown sides.

# Today's Work:

Copy notes from classmate if absent.

OR

Complete PSAT#6

OR

Start HW#6