**Geometry Agenda**

- check last night's HW/collect
- **Objective** - Identify and use the ratios involved with an isosceles right triangle (45-45-90 triangle) and a (30-60-90 triangle)
- HW - Special Right Triangles worksheet
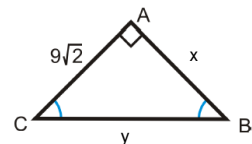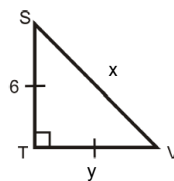
Using Pythagorean Theorem, find the missing side length.

$a = 6$ $c = 6\sqrt{2}$ 45° $b =$

$a = 7$ $c =$ 45° $b = 7$

$a =$ $c = 3\sqrt{2}$ 45° $b =$

Pull   Pull   Pull

Drag the magnifying glass over the triangle to see the relationship between the sides of a 45-45-90 triangle.
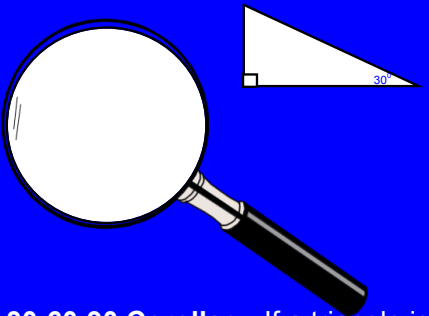
45°
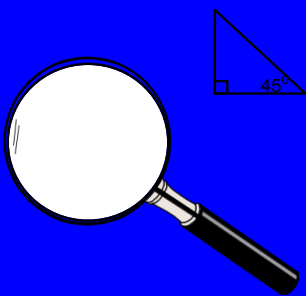
45-45-90 Corollary: If a triangle is an isosceles right triangle, then its sides are in the extended ratio:

(where the hypotenuse is always ____ because that is the longest length)

Find the missing side lengths.

S
6
x
T   y   V

A
$9\sqrt{2}$ x
C   y   B

Find the missing side lengths.

Determine the length of the leg of a 45-45-90 trinagle with a hypotenuse of 26.

$12\sqrt{2}$　x

x

16

We need to rationalize the denominator in this case
(do not leave a radical in the denominator)

How comfortable are you using the x: x: x$\sqrt{2}$ ratio to solve missing sides on an isosceles right triangle?

Thumbs up, down, or to the side

Use Pythagorean Theorem to solve for the missing side.

$a = 4$　$c = 8$　$30°$　$b =$

a　$c = 12$　$30°$　$b = 6\sqrt{3}$
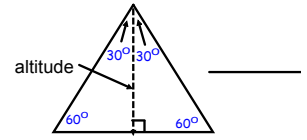
$a = 5$　$c =$　$30°$　$b = 5\sqrt{3}$

Drag the magnifying glass over the triangle to see the relationship between the sides of a 30-60-90 triangle.
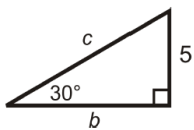
30-60-90 Corollary: If a triangle is a 30-60-90 triangle, then its sides are in the extended ratio:

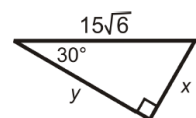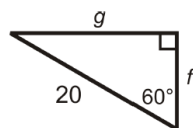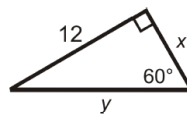(where x is always the _____ the _____ is x√3, and they _____ is always 2x)

A 30-60-90 triangle is really half of an equilateral triangle.

altitude $30°$ $30°$

$60°$ $60°$

Find the missing side lengths.

c   5

$30°$
b

g

20     $60°$ f

Find the missing side lengths.

12   x
$60°$
y

$15\sqrt{6}$
$30°$
y   x

What is the height of an equilateral
triangle with side lengths of 3 inches?