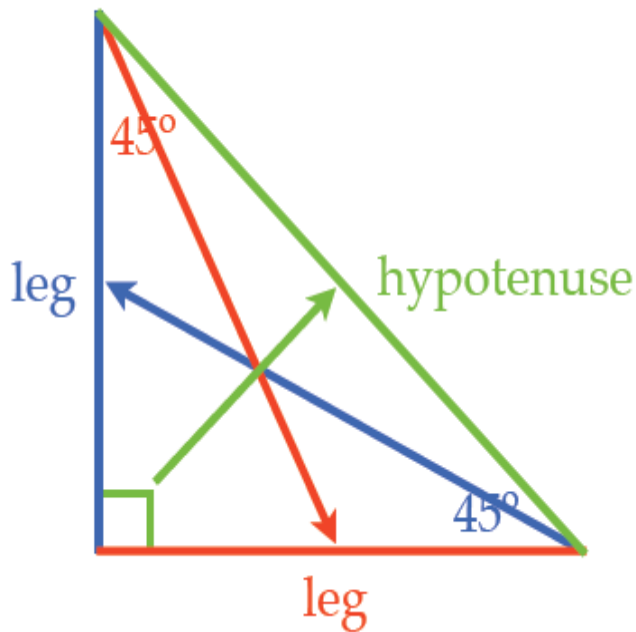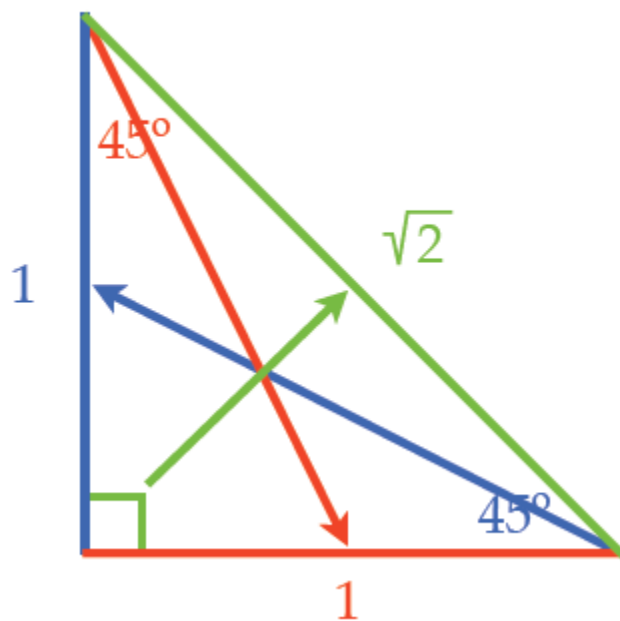# TOPIC 9-4: 45°-45°-90° TRIANGLES

The measurement of the legs in a 45°-45°-90° right triangle are always equal. Remember, your hypotenuse is across from the 90° angle.
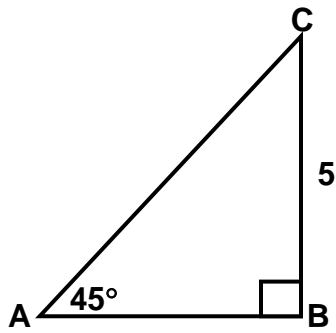

So the side measurements of a 45°-45°-90° triangle always form a constant ratio. We can label these as 1. Using the Pythagorean Theorem we solve for the hypotenuse.

**Now let's watch the iTutoring video which will show us how we will use a chart to solve for missing sides of this special right triangle.
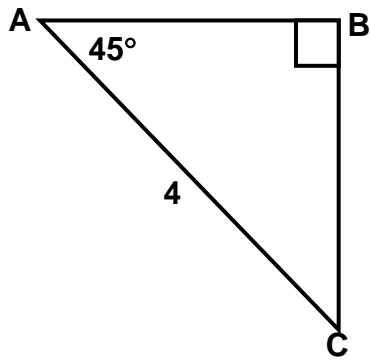
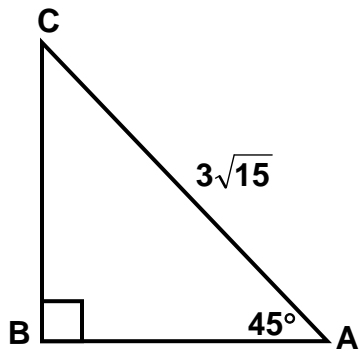**EXAMPLES   Find the lengths of the missing sides.**
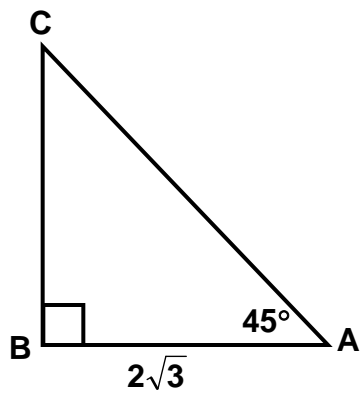
1)

AB = _____

AC = _____

2)

AB = _____

BC = _____

3)

C

$3\sqrt{15}$

45°

B   A

AB = _____

BC = _____

4)

C

45°

B   A

$2\sqrt{3}$

AC = _____

BC = _____

EXAMPLE 5   **The length of the diagonal of a square is $8\sqrt{2}$. Find the length of one side of the square.**

EXAMPLE 6   **The perimeter of a square is 40cm. Find the length of the diagonal.**