Unit 5: Right Triangle Trigonometry
Day 2: 45°- 45°- 90° Triangle Investigation

Name:_____

Date: _____ Hour: _____

We will be using the Pythagorean Theorem to discover some relationships between the sides of two special right triangles. There are many problems involving these triangles in standardized tests and college entrance exams. We can also apply these ideas with trigonometry.

The first type of special right triangle involves an isosceles right triangle.

1. What is the measure of $\angle CBA$? _____

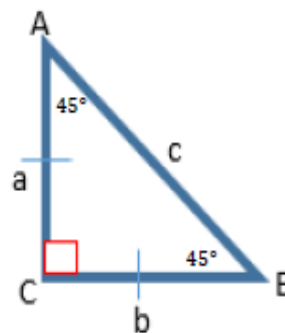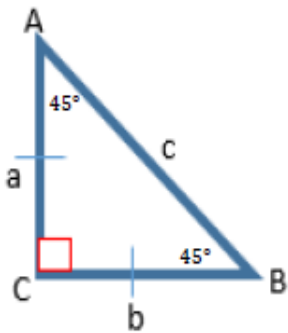2. What is the measure of $\angle CAB$? _____

3. Fill those values into the diagram to the right.
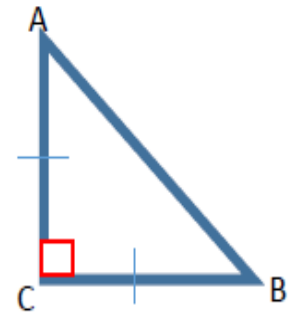
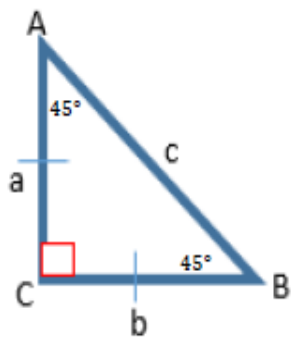Find the length of each isosceles right triangle. Simplify the radical to determine a pattern.

1. a = 3   b = ____   c = ____

2. a = 4   b = ____   c = ____

3. $a = 5$ $b =$ ____ $c =$ ____

4. $a = 6$ $b =$ ____ $c =$ ____

5. $a = 7$ $b =$ ____ $c =$ ____

6. $a = 8$ $b =$ ____ $c =$ ____
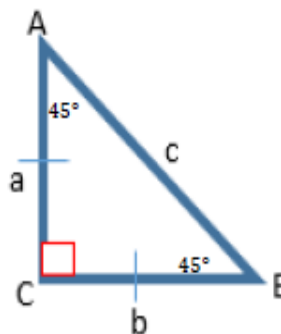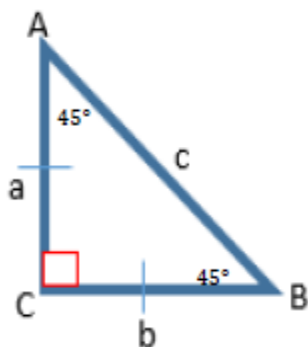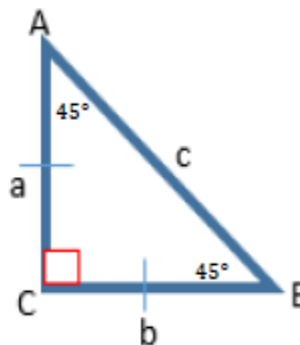
Make a conjecture about the pattern of the relationships between the length of the hypotenuse and the length of the two legs in each problem.

In an isosceles right triangle, if the legs have length x,

then the hypotenuse has length _____

Homework: Day 2 Worksheet