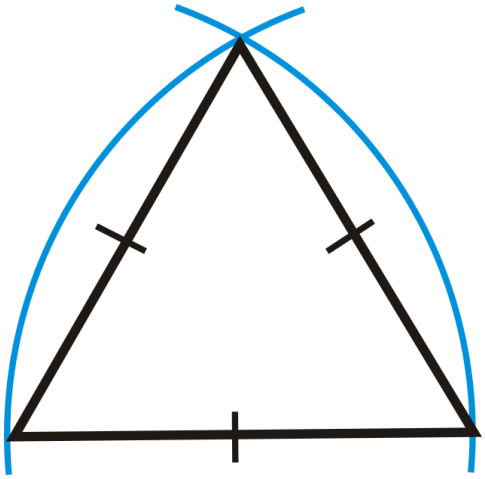
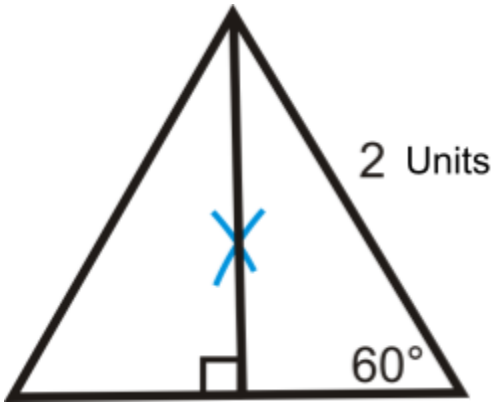
Investigation: Properties of a 30-60-90 Triangle
Tools Needed: Pencil, paper, ruler, compass

1. Construct an equilateral triangle. Label the sides as “2 units” each.



2. Draw or construct the altitude from the top vertex to the base for two congruent triangles.

3. Find the measure of the two angles at the top vertex and the length of the shorter leg. In the example below, the equilateral triangle has side lengths



4. Find the angle measure of the top angles, and the length of the bottom sides for the smaller triangles.

5. Find the length of the longer leg, using the Pythagorean Theorem. Simplify the radical.

6. Now, let’s say the shorter leg (bottom one) is length x and the hypotenuse is $2x$. Use the Pythagorean Theorem to find the longer leg. What is it? How is this similar to your answer in #5?