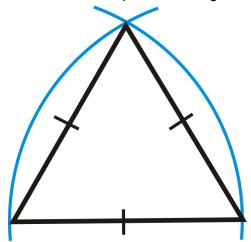
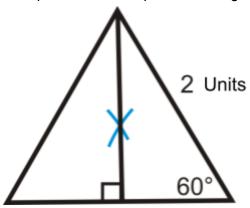
Investigation: Properties of a 30-60-90 Triangle

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?