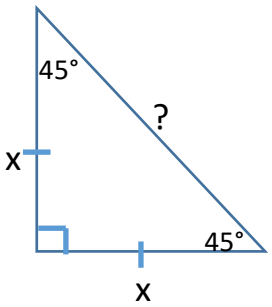
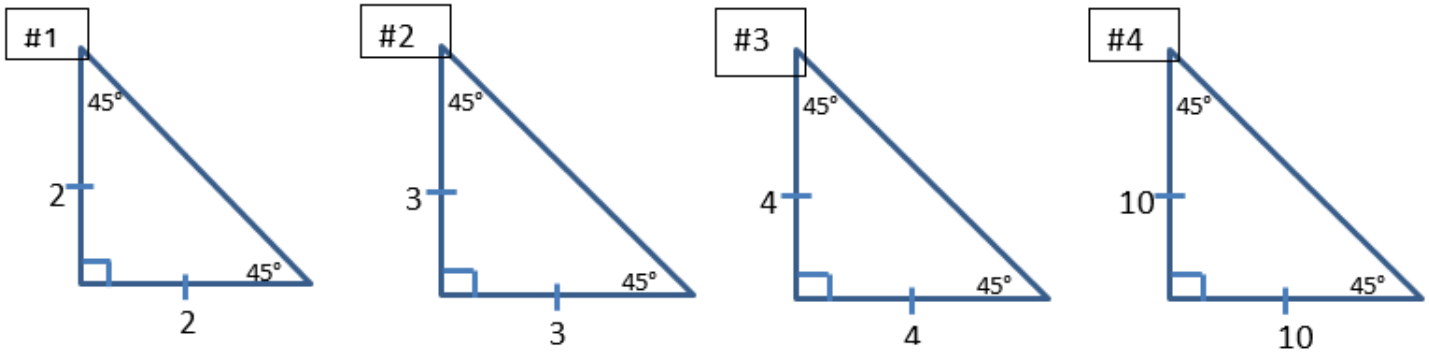
Special Right Triangle Investigations



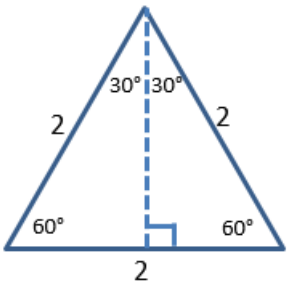
45°- 45° - 90° Right Triangles

- Use the Pythagorean Theorem to find the hypotenuse of each triangle (#1-4).
- Give your answer in simplified radical form.
- Look for the pattern between the side length and hypotenuse of each triangle.
- **Write a rule for finding the hypotenuse of a 45°-45°-90° right triangle if the side length is x.**
- If you are unable to determine a rule, find the hypotenuse of a few more triangles that have the same side lengths until you see the pattern.

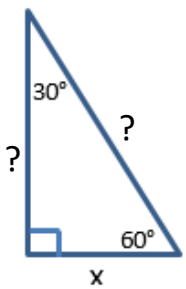


30°- 60° - 90° Right Triangles

- Use the Pythagorean Theorem to find the height of the equilateral triangle with side lengths of 2. Put your answer in simplified radical from.



- Draw at least 4 more equilateral triangles that have an even number for their side lengths.
- Calculate the height of each triangle
- Look for the pattern between the side length and hypotenuse of each triangle.
- **Write a rule for finding the hypotenuse of a 30°-60°-90° right triangle if the short side of the right triangle has a side length of x.**
- **Write a rule for finding the long side of the triangle if the short side of the right triangle has a side length of x.**



Be sure to clearly state your rules for each type of special right triangle!