Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Special Right Triangles**

Monica

Geometry Period:\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** Determine the value of x in each of the right triangles below. If necessary, write your answers in simplest radical form. (Hint: Use Pythagorean Theorem to find the length of each missing side!)

|  |  |  |
| --- | --- | --- |
| **PART A** | | |
| 1) | 2) | 3) |

|  |  |  |
| --- | --- | --- |
| **PART B** | | |
| 4) | 5) | 6) |

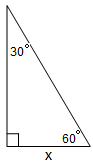
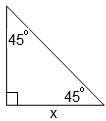
7) Think back to Unit 4. If you know the smallest angle in a triangle, how can you locate the smallest side? Similarly, if you know the largest side in a triangle, how can you locate the largest side? Explain.

8) Look at your answers for part A. What is the relationship between the side opposite the 30° angle and the hypotenuse?

9) Look at your answers for part A. What is the relationship between the side opposite the 30° angle and the side opposite the 60° angle?

10) Look at your answers for part B. What is the relationship between the legs of the triangle and the hypotenuse?

11) The triangles you just worked with are called special right triangles. The triangles in part A are called 30-60-90 triangles (based off of their angle measures) and the triangles in part B are called 45-45-90 triangles. They are special right triangles because the relationship between their side lengths is always the same. Given the shortest side length below, x, represent all of the other side lengths in terms of x.

12) Complete the exercises on Khan Academy. You can find the link on my web site under “February 20th – 22nd”.