Date _____ Item _____

Isosceles Right Triangle Discovery

1. Observe Triangle A. Using a piece of patty paper and a straight edge, trace $\angle S$ and compare it to $\angle T$. Use what you know about the sum of the angles in a triangle to determine the measures of these two angles. Record the angle measures below, and on the diagram.

   $\angle S =$ ____ $\angle T =$ ____

2. Triangle A is shown on a centimeter grid. Determine the length of the legs of this right triangle in centimeters. Record the length measures below, and on the diagram.

   $\overline{RS} =$ ____ $\overline{RT} =$ ____

3. Use a straightedge and patty paper to compare the length of the hypotenuse and the length of one of the legs.

   Should we expect the length of the hypotenuse in Triangle A to be longer, equal to, or shorter than the length of one of the legs? Why?

4. Use the Pythagorean Theorem to determine the length of the hypotenuse for Triangle A. Simplify the square root. Show your work below, and record the length measure on the diagram.

5. Observe Triangle B. Confirm that the non-right angles are congruent using patty paper. Record the angle measures on the diagram.

   Use the centimeter grid to determine the lengths of the legs. Record the lengths for the legs on the diagram.

   Use the Pythagorean Theorem to determine the length of the hypotenuse. Simplify the square root. Show your work below, and record the length measure on the diagram.

6. Observe Triangle C. Follow the same steps as you did for Problem 5 above.

7. Observe Triangle D. Follow the same steps as you did for Problems 5 and 6 above.

8. Share your results with your partner. Do you see any pattern in the relationship between the lengths of the legs and the hypotenuse across the four triangles? Describe any patterns you found.

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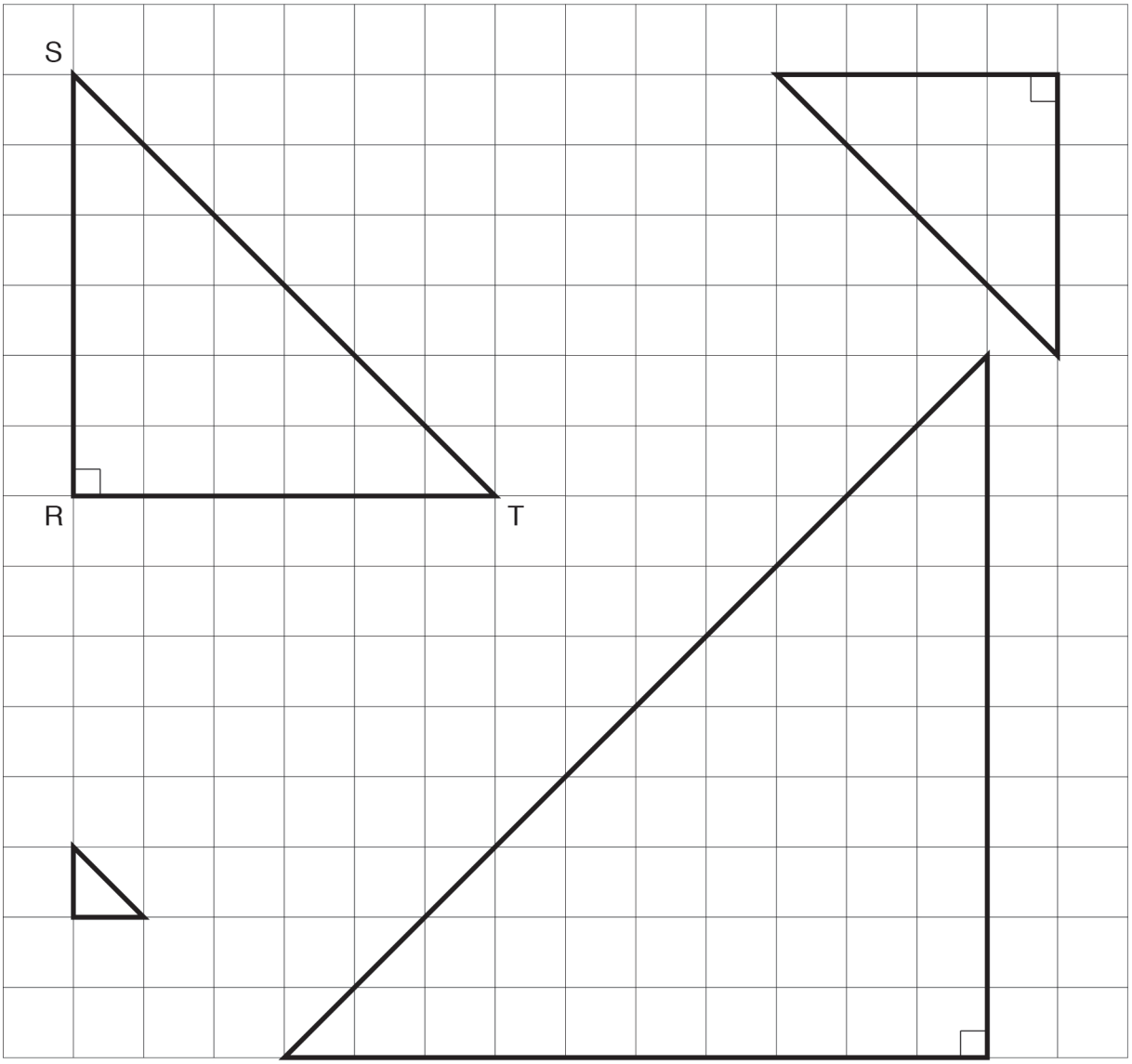
Triangle A

Triangle B



Triangle D

Triangle C