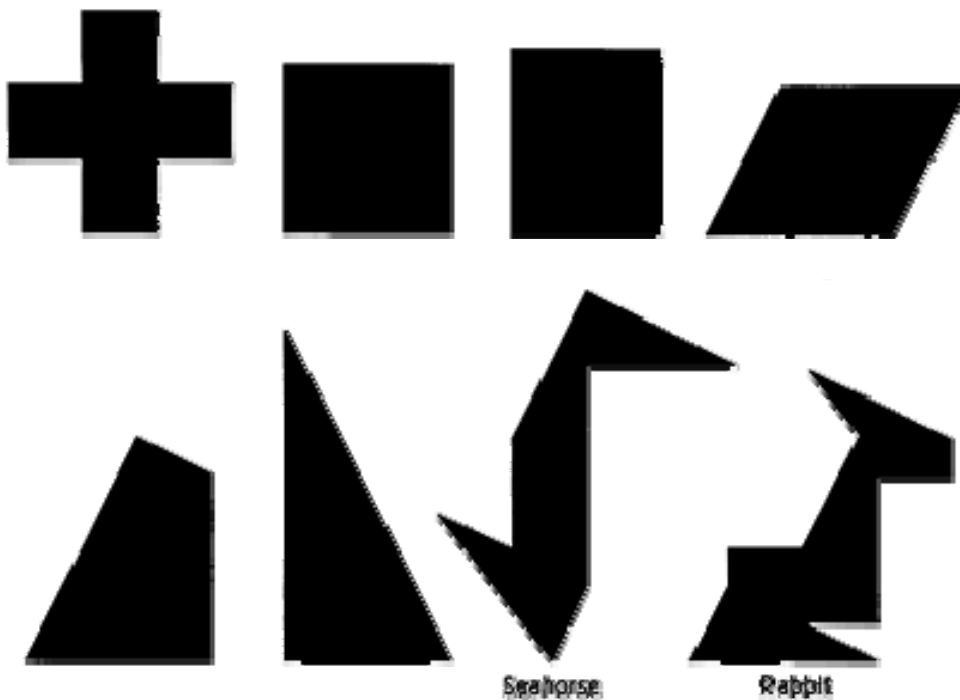


This puzzle comes from “The Royal Road to Mathematics” published by Sam Loyd, a great American puzzle genius who lived one century ago. This puzzle is similar to tangrams, but uses only five pieces that are all different from each other. In this activity you will cut out the five shapes and use them to make eight geometric figures.

- I. Carefully cut out the five shapes.
- II. Use them to form each of the eight figures below. You must use all five pieces for each puzzle.



- III. Puzzle pieces may be flipped over, though not all solutions require this action.
- IV. Once you have completed a puzzle, using graph paper, trace around the five pieces to make a record of the puzzle. Label the puzzle.
- V. Determine the area and perimeter, in centimeters, of the puzzle pieces. Record this information on the chart. Use the centimeter graph paper and the ruler to help you with the measurements. Some measurements may be approximate.

SHAPE	AREA	PERIMETER
Greek Cross		
Square		
Rectangle		
Parallelogram		
Quadrilateral		
Right Triangle		
Seahorse		
Rabbit		

VI. Write two paragraphs that address the following questions or prompts.

1. Study the data in the area and perimeter chart.
 - a. What do you notice about the data for area of the shapes? Explain your findings.
 - b. What do you notice about the data for perimeter of the shapes? Explain your findings.
2. Select one of the puzzles you completed.
 - a. Write a description of the process you used to create the shape.
 - i. Describe how your team worked together to find the solution.
 - ii. What problem solving skills did you rely upon?
 - iii. How did you use your observations about each shape to complete the puzzle?
 - iv. Include, in your explanation, as many mathematical or geometry terms that describe the building process, characteristics of the puzzle pieces, and finished puzzle.
3. If you finish early, create your own unique puzzle. Name it and label with area and perimeter.

