

Apply Principles of Congruence, Similarity, and Transformations

Directions: Work independently and solve the problems below. Then compare and discuss your answers with others in your group. Finally, make changes so that you have a correct answer.

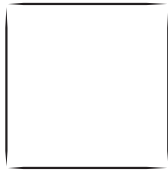


Figure 1



Figure 2



Figure 3

The Task: Toothpicks are used to build rectangular shapes. All the rectangles are 1 toothpick high. The first three rectangles are illustrated above.

- Draw a picture of Figure 5.
- How many toothpicks would it take to make Figure 10?
- How many toothpicks would it take to make the N th Figure? Explain how you determined your answer.
- If the area of Figure 1 is 1 square unit, what is the area of Figure 5?
- What is the area of the N th Figure? Explain how you determined your answer.
- Is it reasonable or unreasonable for Figure 20 to contain 42 toothpicks and 22 square units? Explain your reasoning.

Number of toothpicks for Figure 10: _____

Number of toothpicks for Figure N : _____

Explanation: _____

Area of Figure 5: _____

Area of the N th Figure: _____

Explanation: _____

Reasonable or unreasonable: _____