

Math Challenge #15

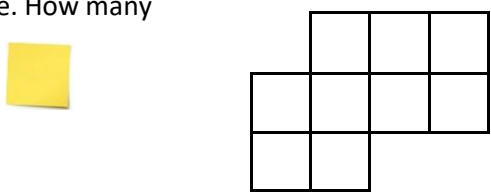
First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

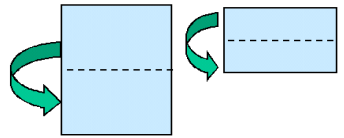
Shapes, Perimeters and Areas

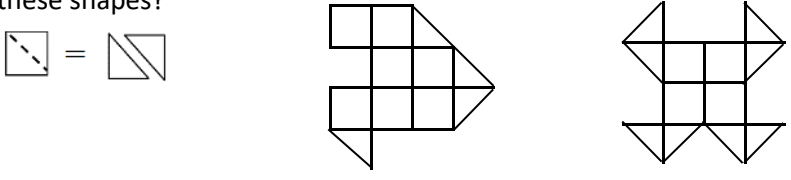
Welcome to the Math Challenge #15. This is the last Math Challenge for 2020-2021 school year. Area and perimeter are two important and fundamental parts of mathematics. They are the foundation for understanding other aspects of geometry which help us understand algebra, trigonometry, and calculus. The **perimeter** is the distance all the way around the **outside** of a 2D shape. To work out the perimeter of a shape, add up the lengths of all the sides. **Area** is the size of a surface. In this challenge, you will solve problems involving perimeter and area.

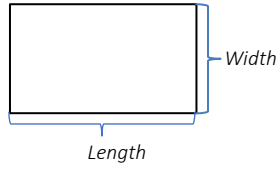
Kinder & First Grade: solve at least 3 problems.
Second & Third Grade: solve at least 7 problems.
Fourth Grade and above: solve at least 12 problems.

Answer

1.	Each sticky note will cover 1 square of the figure. How many sticky notes will cover the whole figure?		
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2.	If you fold a piece of paper as shown in the picture, you get 2 sections of rectangles. If you fold it one more time, how many sections of rectangle would you get?		
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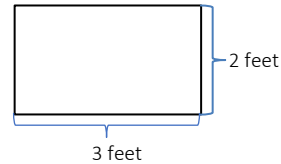
3.	If two triangles make up one square as shown, find how many squares make up each of these shapes? 	Shape A: _____ Shape B: _____
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4.	To find the area of a rectangle, we can multiply the length times the width. To find the area of a rectangle with length of 3 feet and width of 2 feet, we can multiply 3 feet \times 2 feet = 6 square feet. What is the area of this rectangle if we double its length and its width?		
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5. A square paper with 8 inches long on its sides is cut into two identical pieces as in picture. What is the new perimeter of one of the smaller pieces of paper?

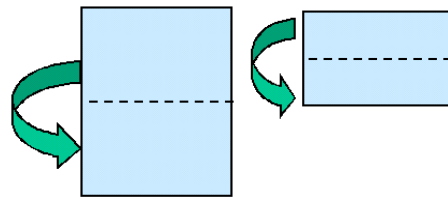


6. What is the perimeter of this rectangle if we double its length and its width?

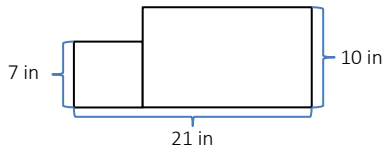


7. A rectangle that is 12 inches long and 3 inches wide is enlarged. If its length is doubled and its width is tripled, what is the new area of the rectangle?

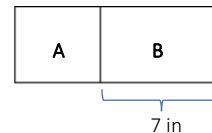
8. As you learned from question #2, with one fold, you make 2 sections. With 2 folds, you create 4 sections. How many folds must you do to create 64 sections?



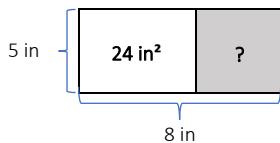
9. Find the area of the figure below which is made up of a square and a rectangle.



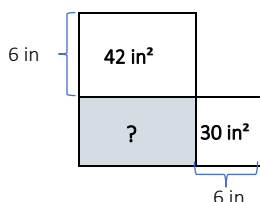
10. The figure on the right is made up of a square A and a rectangle B. Perimeter of the square A is 20 inches. Find the area of the whole figure.



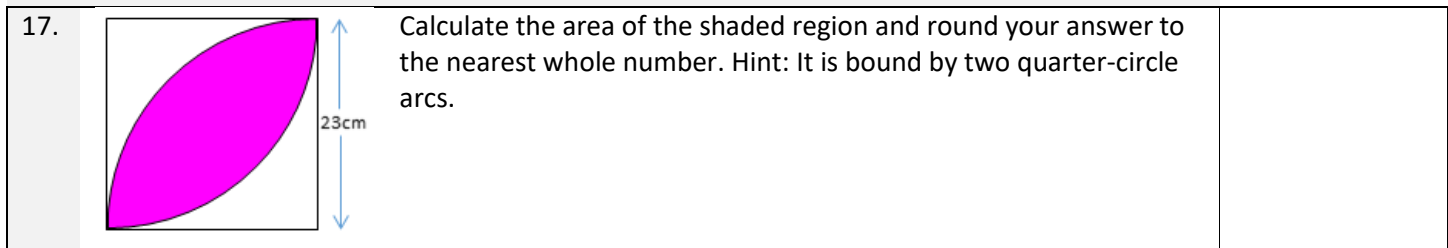
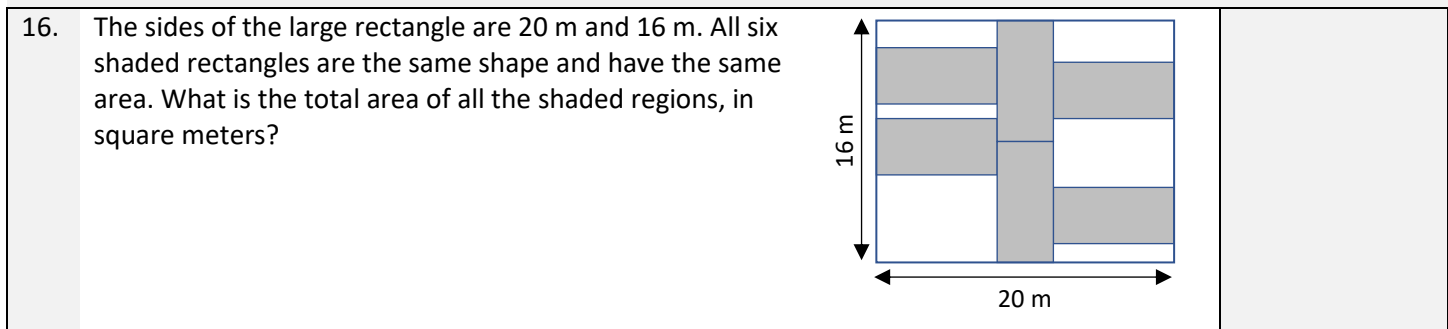
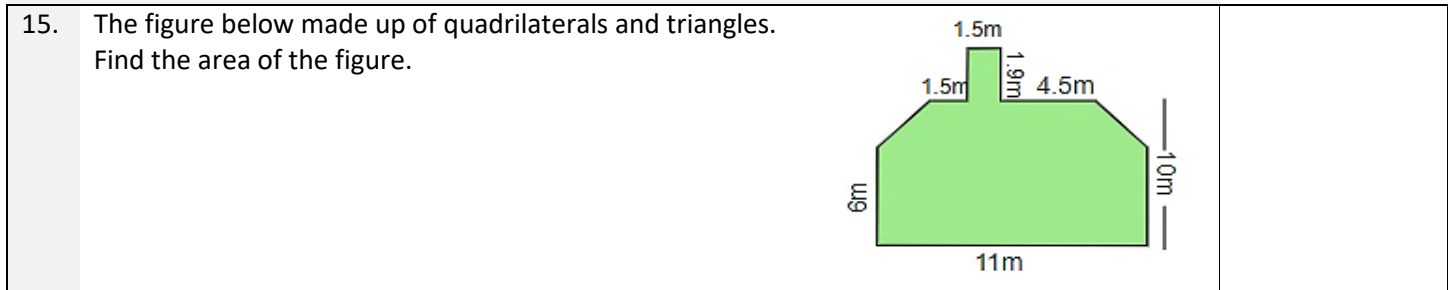
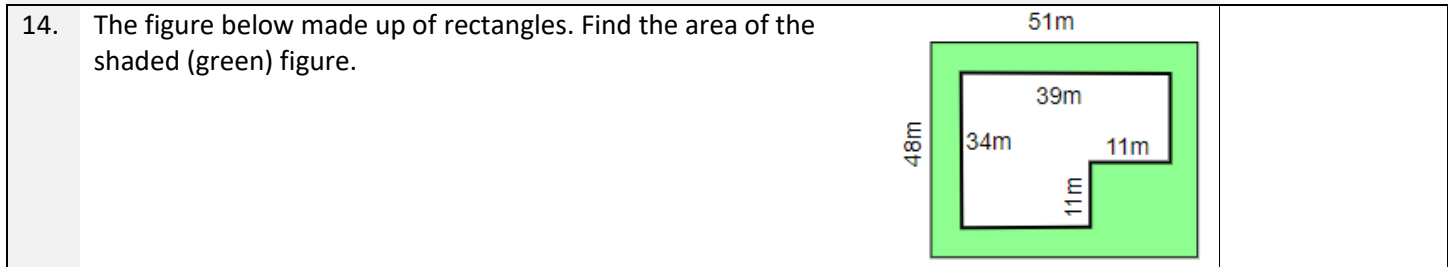
11. Study the figure below: What is the area of the shaded figure?



12. Study the figure below: What is the area of the shaded figure?



13. Mrs. Rosenblum grows blueberries and strawberries. This season, she has changed the rectangular blueberry bed to a square by lengthening one of its sides by 5 feet. Because of this change, the area of the strawberry bed was reduced by 40 square feet. What was the area of the blueberry bed before the change? Hint: Draw it out.



18. Two miles of fence will enclose a square of 156.25 acres. How large, in acres, a square pasture will 4 miles of fence enclose?

Solution is available on May 21, 2021 at www.mathinaction.org