

Math Challenge #8

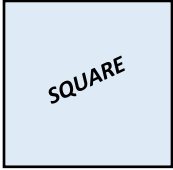


First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

Perimeter



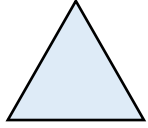
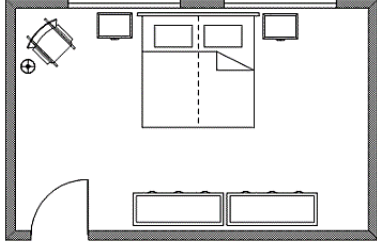
Welcome to the Math Challenge #8. In this challenge, you will be solving problems involving a specific term called **perimeter**. Perimeter is the distance around a 2-dimensional object. You find the perimeter of a shape by adding the lengths of the sides. For example, a square has four sides. To determine the perimeter of a square, just add the four sides together. Since every side of a square is the same, the perimeter is: **3 inches + 3 inches + 3 inches + 3 inches = 12 inches**. You may also achieve this by multiplying 3 inches by 4.

3 inches



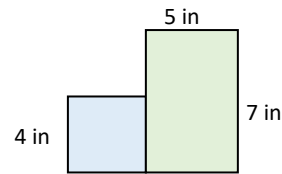
Kinder & First Grade: solve at least 3 problems.
Second & Third Grade: solve at least 7 problems.
Fourth Grade and above: solve at least 12 problems.


Answer

1.	An ant crawls around along the edge of this square plate once. If each side of the plate is 5 inches long. What is the distance does the ant crawl?		
2.	The cookie cutter on the right is used to make lots of star cookies at Diana's home. What is the perimeter of a cookie?		
3.	An equilateral triangle is a triangle in which all three sides are equal. Lisa drew an equilateral triangle that measured 3 inches on each side. What was the perimeter of the triangle that she drew?		
4.	Laura's bedroom shape is a square. The side's length is 11 feet long. What is the perimeter of her bedroom?		
5.	A large rectangular bedroom is 18 feet long and 13 feet wide. What is the perimeter of the bedroom?	 <p style="text-align: center; font-size: small;">Bedroom</p>	

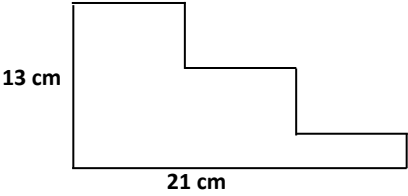
6. Tucker's room is in a shape of a regular pentagon (what a cool room!). The perimeter of his room is 60 feet, and each wall has the same length. Find the length of each side.

7. Vedah cut a piece of square with side length 4 inches. Joanna cut a piece of rectangular paper that is 7 inches long and 5 inches wide. They put together their papers to make a shape as the figure on the right. What is the perimeter of the figure?



8.  A piece of square paper with side length 15 cm was cut into half as in the picture. What is the perimeter of each new piece of paper?

9. What is the perimeter of the figure below? All angles in the figure are right angles.
Hint: do not estimate.



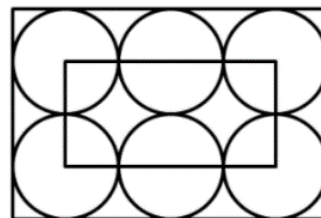
10. Sandra is making a birthday card. She has a rectangle paper measuring 40 cm by 30 cm. She cuts out ten squares, each measuring 5 cm by 5 cm from the rectangle to make a birthday decoration. In each case, exactly one side of the square lies along a side of the rectangle, and none of the cut-out squares touch or overlap. What is the perimeter of the birthday card?
Hint: Draw the card.

11. The length of a rectangular family room is 6 feet longer than its width. If its perimeter is 64 feet. What is the length of the family room? Hint: Draw a model.

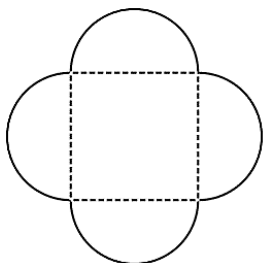
12. On a house plan diagram, 1 inch represents 4 feet. How long is the perimeter of a house that is $24\frac{1}{4}$ inches on the diagram?



13. In the diagram on the right, six circles of equal size touch adjacent circles and the sides of the large rectangle. Each of the corners of the small rectangle is the center of one of the large circles. The perimeter of the small rectangle is 78 cm. What is the perimeter of the large rectangle?



14. A square with perimeter 20 cm has a semicircle drawn onto each of its sides, as shown below. What is the perimeter of the new shape? Give your answer in terms of π .



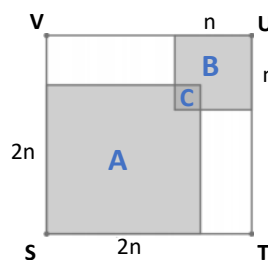
Circumference of one circle is calculated by πd , where d is diameter of the circle.

15. A large square paper was cut into half, then the results were cut again into half for a few more times. If at the end of cutting, there were 64 small squares, and each square has a side of 1.5 inches long, what is the perimeter of the large square paper?

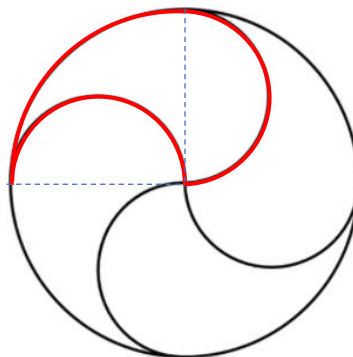
16. The length of a rectangular swimming pool is exactly three times as long as its width. If the pool has a perimeter of 296 m, find the width of the pool.



17. The square $VSTU$ has an area of 196 in^2 . It contains two overlapping squares A and B ; the larger of these squares (A) has an area 4 times that of the smaller (B) and the area of their overlap (C) is 1 in^2 .
What is the total perimeter of the shaded regions?



18. The circle of radius 4 inches is divided into four congruent parts by arcs of radius 2 inches as shown.
What is the length of the perimeter of one of the parts, in inches?



Solution is available on February 5th, 2021 at www.mathinaction.org