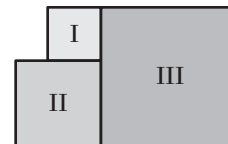


LESSON
1.7

Challenge Practice

For use with pages 48–56

- The sides of a square are doubled. How does the perimeter and area of the new square compare with the perimeter and area of the original square?
Justify your answer.
- The length and width of a rectangle are doubled. How do the perimeter and area of the new rectangle compare with the perimeter and area of the original rectangle?
Justify your answer.
- The figure at the right shows three squares. The area of square I is 25 square inches and the area of square II is 64 square inches. What is the perimeter and area of square III?

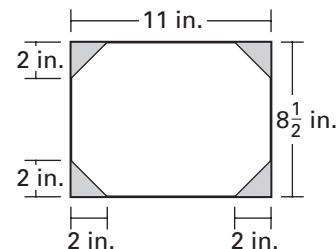


- The length of a rectangle is 16 centimeters. The perimeter of the rectangle must be at least 36 centimeters and not more than 64 centimeters. Find the interval for the width w of the rectangle.
- The width of a rectangle is 14 meters. The perimeter of the rectangle must be at least 100 meters and not more than 120 meters. Find the interval for the length l of the rectangle.
- The length l of a rectangle is t times its width w . The perimeter of the rectangle is 1200 meters.
 - Write the perimeter P of the rectangle in terms of w and t .
 - Copy and complete the table.

t	1	1.5	2	3	4	5
Width	?	?	?	?	?	?
Length	?	?	?	?	?	?
Area	?	?	?	?	?	?

- Describe the relationship among the width, length, and area of a rectangle that has a fixed perimeter. What dimensions result in a maximum area of the rectangle?

- The four corners are cut from an $8\frac{1}{2}$ -inch-by-11-inch piece of paper as shown in the figure at the right. What is the perimeter of the remaining piece of paper?



- Use the figure shown at the right and the Pythagorean Theorem to write a formula for the area A of an equilateral triangle with side x .

