NAME _____ DATE _____ PERIOD _____

# Lesson 4 Homework Practice

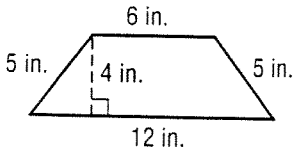
A

## *Changes in Dimension*

**Refer to the figures at the right for Exercises 1–4. Justify your answers.**

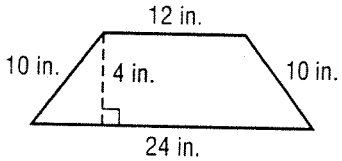
1. Describe the change in the perimeter from Figure A to Figure B.

**Figure A**



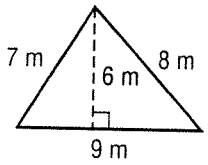

2. Describe the change in the area from Figure A to Figure B.

**Figure B**



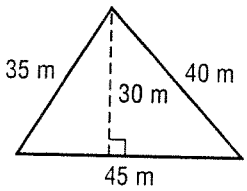

3. Describe the change in the perimeter from Figure C to Figure D.

**Figure C**




4. Describe the change in the area from Figure C to Figure D.

**Figure D**




5. A photo album contains small and large photographs. Each large photograph has side lengths that are twice the side lengths of each small photograph. The area of each small photograph is 24 square inches. What is the area of each large photograph? Explain.

NAME _____ DATE _____ PERIOD _____

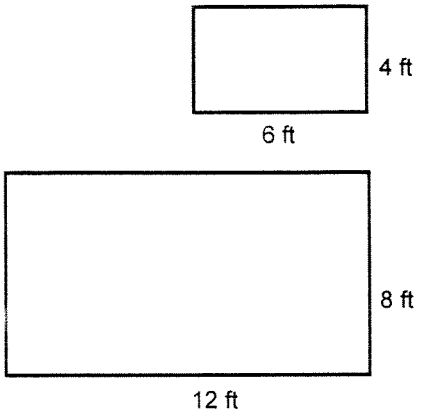
# Lesson 4 Reteach

## *Changes in Dimension*

**Example 1**

**Suppose the side lengths of the rectangle shown at the right are doubled. What effect would this have on the perimeter?**

Perim
Area
Peter




The dimensions are two times greater.

original perimeter: $2(6) + 2(4) = 20$ feet

new perimeter: $2(12) + 2(8) = 40$ feet

Since $40 = 2(20)$, the perimeter is 2 times the perimeter of the original figure.

**Example 2**

**Refer to Example 1. What effect would the described change have on the area?**

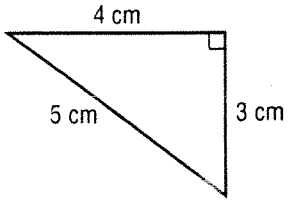
original area: $6 \cdot 4 = 24$ square feet

new area: $12 \cdot 8 = 96$ square feet

Since $96 = 4(24)$, the area is 4 times the area of the original figure.

**Exercises**

**Refer to the figure at the right for Exercises 1 and 2. Justify your answers.**




1. Each side length is multiplied by 4. Describe the change in the perimeter.

2. Each side length is tripled. Describe the change in the area.

NAME _____ DATE _____ PERIOD _____

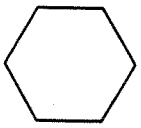
# Lesson 4 Problem-Solving Practice

B

## *Changes in Dimension*

**Solve.**

**1.** A classroom bulletin board in the shape of a regular hexagon is shown below. The dimensions of a hallway bulletin board are tripled. What is the perimeter of the hallway bulletin board?




**2.** Refer to Exercise 1. Suppose the classroom bulletin board has an area of about 10.75 square feet. What is the approximate area of the hallway bulletin board?

**3.** Mrs. Willis is making a dress from fabric with two different sizes of squares. A side of the larger square is twice the length of a side of the smaller square. What is the perimeter of the larger square if the perimeter of the smaller square is 32 centimeters?

**4.** Refer to Exercise 3. Suppose the area of the larger square is 100 square centimeters. What is the area of the smaller square?

**5.** A design for a triangular-shaped T-shirt logo has dimensions $\frac{1}{3}$ the size of the T-shirt logo. The sides of the T-shirt logo are 6 inches, 12 inches, and 15 inches. What is the perimeter of the design?

**6.** Refer to Exercise 5. Suppose the area of the T-shirt logo is about 34.2 square inches. What is the approximate area of the design.