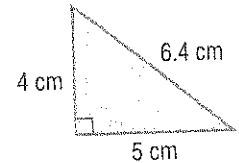


Lesson 4

Changes in Dimension**Guided Practice**

Refer to the figure at the right for Exercises 1 and 2. Justify your answers. (Examples 1–2)



1. Each side length is doubled. Describe the change in the perimeter.

.....

.....

.....

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

.....

.....

.....

3. Different sizes of regular hexagons are used in a quilt. Each small hexagon has side lengths of 4 inches and an area of 41.6 square inches. Each large hexagon has side lengths of 8 inches. What is the area of each large hexagon? (Example 3)

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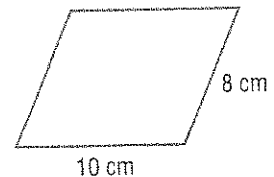
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Independent Practice

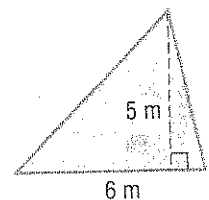
Go online for Step-by-Step Solutions



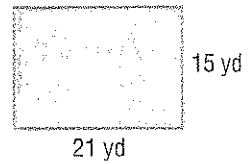
1. Each side length of the parallelogram at the right is multiplied by 4. Describe the change in the perimeter. Justify your answer. (Example 1)



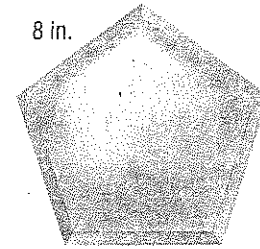
2. The base and height of the triangle at the right are multiplied by 4. Describe the change in the area. Justify your answer. (Example 2)



3. Each side length of the rectangle is multiplied by $\frac{1}{3}$. Describe the change in the area. Justify your answer. (Example 2)



4. Different sizes of regular pentagons are used in a stained glass window. Each small pentagon has side lengths of 4 inches and an area of 27.5 square inches. Each large pentagon has side lengths of 8 inches. What is the area of each large pentagon? (Example 3)



5. **CCSS Justify Conclusions** A dollhouse has a bed with dimensions $\frac{1}{12}$ the size of a queen size bed. A queen size bed has an area of 4,800 square inches, and a length of 80 inches. What are the side lengths of the dollhouse bed? Justify your answer.

6. **CCSS Reason Abstractly** Refer to the graphic novel frame below for Exercises a–b.

Watch [Replay it online!](#)

A graphic novel frame showing a right triangle with legs of 30 ft and 40 ft. A speech bubble from a character says: "We need to figure out how the area changes if the length of each side is 2 times greater."

- a. What is the original area of the triangle?
- b. What is the new area if the sides are all two times longer?