Section 10.4 Perimeters and Areas of Similar Figures

Complete the outline as you view Video Lecture 10.4. Pause the video as needed to fill in the blanks. Then press Play to continue. Also, circle your answer to each numbered exercise.

Objective 1 Find the Perimeters and Areas of Similar Figures

A(n) ________ ________ of two similar figures is the ratio of any two corresponding sides.

If the scale factor of two similar figures is \( \frac{a}{b} \), then

1. the ratio of their perimeters is \( \frac{a}{b} \) and
2. the ratio of their areas is \( \frac{a^2}{b^2} \).

Work Video Exercise 1 with me.

1. The figures are similar. Compare the first figure to the second.
   a. Find the scale factor.
   b. Give the ratio of the perimeters.
   c. Give the ratio of the areas.

Pause and work Video Exercise 2.

2. The figures are similar. The area of one figure is given. Find the area of the other figure to the nearest whole number.
   Area of smaller parallelogram = 6 in.²

Play and check.
Work Video Exercise 3 with me.

3. An embroidered placemat costs $3.95. An embroidered tablecloth is similar to the placemat, but four times as long and four times as wide. How much would you expect to pay for the tablecloth?

Pause and work Video Exercises 4 & 5.

4. Find the scale factor and the ratio of perimeters for the pair of similar figures.
   two trapezoids with areas 49 cm² and 9 cm².

5. The scale factor of two similar polygons is 6:1. Find the ratio of their perimeters and the ratio of their areas.

Play and check.

Work Video Exercise 6 with me.

6. Compare the outline of the larger figure to the outline of the smaller figure.
   Find the ratios of
   a. their circumferences
   b. their areas

![Diagram of a circle with a radius of 5x and a radius of 2x]