3.1 Rep-Tile Quadrilaterals

Forming Rep-Tiles With Similar Quadrilaterals

In this Problem, you will discover which rectangles and non-rectangular quadrilaterals are rep-tiles.

Problem 3.1

Sketch or use your Shapes Set to make several copies of these shapes:

- a non-square rectangle
- a non-rectangular parallelogram
- a trapezoid

A Which of these shapes is a rep-tile? Make a sketch to show how the copies fit together.

B Look at your sketches from Question A.

1. What is the scale factor from the original figure to the larger figure? Explain your reasoning.
2. How does the perimeter of the larger figure relate to the perimeter of the original figure?
3. How does the area of the larger figure relate to the area of the original figure?

C

1. Extend the rep-tile patterns you drew for Question A. Do this by sketching additional copies of the original figure to make even larger figures that are similar to the original. Show how the copies fit together.
2. Find the scale factor from each original figure to each new figure. Explain your reasoning.
3. What do the scale factors tell you about the corresponding side lengths, perimeters, angles, and areas?

ACE Homework starts on page 60.