Module 9   **Characteristics of Geometric Shapes**
Lesson 5   **Inductive and Deductive Reasoning**
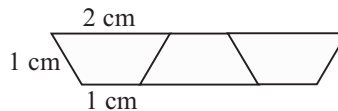
Challenge Problems

9.5

Set 1

1   Sketch a triangle, quadrilateral, pentagon, and hexagon. Then, draw as many diagonals as possible from a single vertex of each polygon. Develop a conjecture for the number of diagonals that can be drawn from a single vertex of a polygon with n sides.

2   Find the perimeter or distance around the shape when 100 trapezoids are put together in the pattern shown. Assume that all trapezoids have the dimensions shown.

2 cm

1 cm

1 cm

Set 2

1   Use deductive reasoning to show why all equilateral triangles are also isosceles triangles.

Additional Work Area