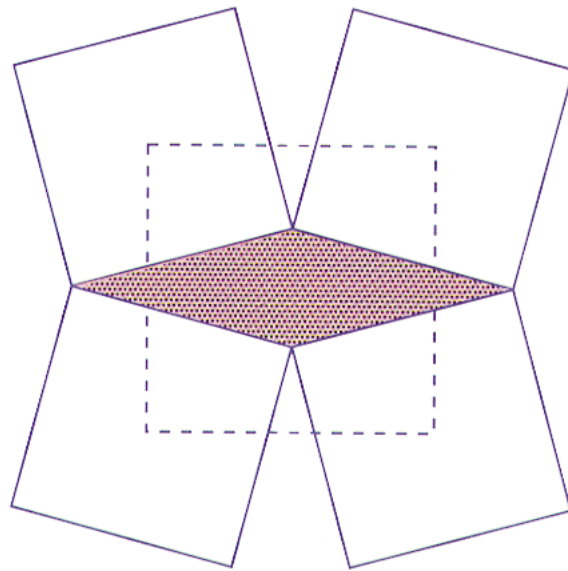


# Five Squares on a Rhombus

## Problem-of-the-Week

### The Problem

Four 6-by-6 squares are drawn on a rhombus having two  $30^\circ$ -angles. Find the area of a fifth square that is formed by connecting the centers of the squares.



### Strategies and Hints

1. Find the length of a diagonal of one of the 6-by-6 squares. What is half the length of this diagonal?
2. The key to the solution is a triangle with its longest side less than  $6\sqrt{2}$  units. The drawing shows some possible triangles.
3. The cosine of  $120^\circ$  is  $-0.5$ . How is this fact used in the solution?

