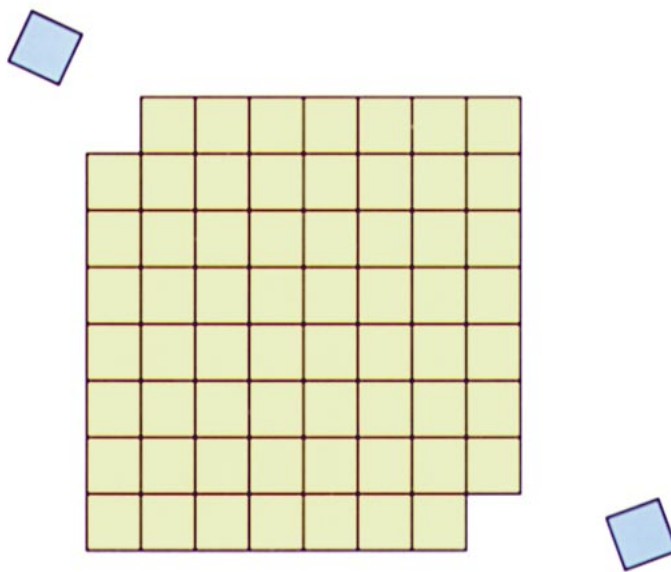


## The Notched Checkerboard

## Problem-of-the-Week

### The Problem

An 8-by-8 grid similar to a checkerboard can be covered by 32 dominoes, each of which will cover exactly two adjacent squares on the grid. If you cut away two squares at opposite corners of the grid, is it possible to place 31 dominoes on the grid so that all of the remaining squares are covered? If so, how can this be done? If not, show that it is impossible.



### Strategies and Hints

1. Think about the two squares that can be covered by each domino. Can you think of a way to describe the properties of such pairs of squares?
2. Try labeling the squares of the grid using ordered pairs. Now describe the properties of the pairs of squares covered by dominoes.
3. The grid is described as “similar to a checkerboard.” Try shading the grid in a black-and-white pattern. Now describe the properties of pairs of squares covered by dominoes.
4. How many black squares will be covered by 31 dominoes? What does this question have to do with the solution of the problem?