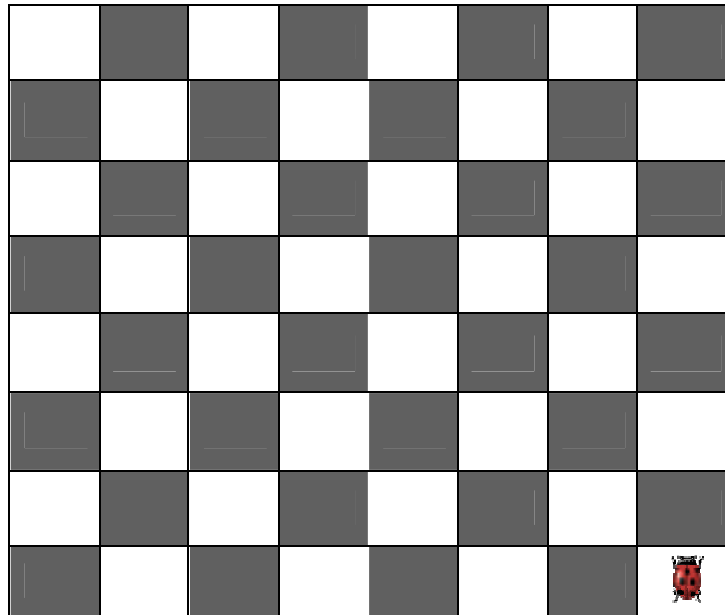


## Mathematical Puzzle

Readers are welcome to solve the following puzzles. But, do not send solutions to us. Answers to these puzzles will be provided in the next issue.

1. A bug begins from down right corner of a chess board and proceeds to visit every white square without ever entering a black square. If the insect never passes through the same intersection more than once, what should be his route?



2. Let us assume that we have given chess board with two of the diagonally opposite corners removed. Will it be viable to cover the chess board with pieces of tile whose size is exactly two board squares?
3. How many distinct 5-digit numerals can be created out of the digits 1; 1; 1; 6; 8?
4. Obtain the number of nonnegative integer solutions for the following equation

$$x_1 + x_2 + x_3 + x_4 < 19$$