

## Solutions to Earlier Puzzles

(in Vol. 1, No. 1, 2008)

2. No, it is impossible. Two diagonally opposite squares on a chess board are of the same color. Thus, when these are removed, the number of squares of one color exceeds by 2 the number of squares of another color. However, each piece of domino covers exactly two squares and these are of different colors. Every placement of domino pieces establishes a one to one correspondence between the set of white squares and the set of black squares. If the two sets have different number of elements, then, by the Pigeonhole Principle, no one-one correspondence between the two sets is possible.
3. The digit 6 can be located in any of the 5 positions; then 8 can be located in 4 positions. Thus the answer is  $5 \times 4 = 20$ .
4. The problem is equivalent to finding the number of nonnegative integer solutions of the equation  $x_1 + x_2 + x_3 + x_4 + x_5 = 18$ .