Computer Science Olympiad
Pennsylvania State University
Hazleton Campus
Second Round, Spring 2013

Deadline: April 6, 2013

Problem [*Pentominos variant of Sudoku*]

A 5-by-5 grid is covered with fives pentominos. Arbitrary five cells of the grid contains the numbers 1, 2, 3, 4, and 5 (*Fig*. 1). Write a program that fills in all the cells of the grid with the numbers 1, 2, 3, 4, and 5 such that these numbers should appear once in a row, once in a column and as well as once in every pentominos (*Fig*. 2). The program should find all possible solutions and store them in a text file. The total number of solutions should be printed on the standard output(monitor).

Fig.1 *Initial five numbers*   Fig.2. *One possible solution*

Input data
The locations of the initial five numbers in the format: number   row   column

Example: The input data for the grid on Fig. 1 is the following:

```
1   4   2
2   2   4
3   3   1
4   4   5
5   1   1
```

Output
The number of all solutions should be outputted on the standard output (monitor)
All solutions (filled in grids) stored in a text file.