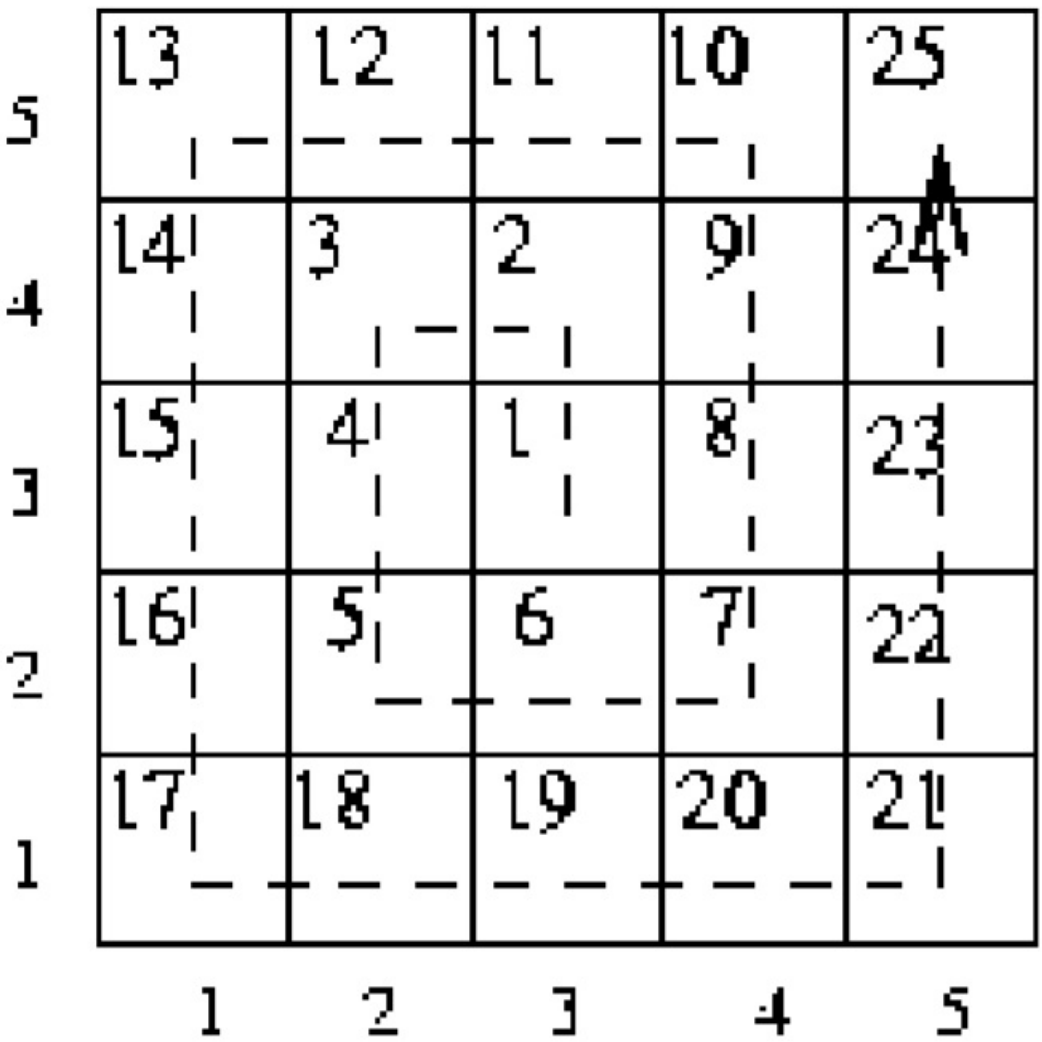
Problem 5: Spiral Tap

(Medium)

(Adapted from UVa 10920)



The game of Spiral Tap is played on a square grid. Pieces are placed on a grid and the moves are realized according to the position of the pieces on the grid. However, the coordinate system in the game of Spiral Tap is a bit different that those found in traditional board games, such as chess.

The cell numbering scheme follows a spiral, starting from the center of the grid in an anti-clockwise fashion. The figure illustrates the cell numbering scheme.

The goal is, given the spiral tap coordinates of a cell, find its cartesian coordinates (line 1 is at the bottom, and column 1 is the leftmost).

Input Format

The input is a series of lines. Each line is composed of two numbers: S and P. S is the size of the border of the grid and P is the spiral position of a cell in this grid. The line such that $S = P = 0$ marks the end of the input (and is not part of the data set).

Constraints

- There are at most 25 lines
- S is an odd number
- $1 \leq S \leq 10^5$
- $1 \leq P \leq S^2 \leq 10^{10}$

The time limit for this problem is 2 seconds.

Output Format

For each line in the data set of the input, your program must output a line `Line = X, column = Y.`, where X and Y are the cartesian coordinates of the corresponding cell.

Sample Input

```
3 1
3 3
3 9
5 9
5 10
0 0
```

Sample Output

```
Line = 2, column = 2.
Line = 3, column = 1.
Line = 3, column = 3.
Line = 4, column = 4.
Line = 5, column = 4.
```