

One day, an ant called Alice came to an  $M \times M$  chessboard. She wanted to go around all the grids. So she began to walk along the chessboard according to this way: (you can assume that her speed is one grid per second)

At the first second, Alice was standing at (1,1). Firstly she went up for a grid, then a grid to the right, a grid downward. After that, she went a grid to the right, then two grids upward, and then two grids to the left in a word, the path was like a snake.

For example, her first 25 seconds went like this:  
( the numbers in the grids stands for the time when she went into the grids)

25	24	23	22	21	<b>5</b>
10	11	12	13	20	<b>4</b>
9	8	7	14	19	<b>3</b>
2	3	6	15	18	<b>2</b>
1	4	5	16	17	<b>1</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	

At the 8-th second , she was at (2,3), and at 20-th second, she was at (5,4).  
Your task is to decide where she was at a given time (you can assume that  $M$  is large enough).

**Input**

Input file will contain several lines, and each line contains a number  $N$  ( $1 \leq N \leq 2 * 10^9$ ), which stands for the time. The file will be ended with a line that contains a number ‘0’.

**Output**

For each input situation you should print a line with two numbers  $(x,y)$ , the column and the row number, there must be only a space between them.

**Sample Input**

8  
20  
25  
0

**Sample Output**

2 3  
5 4  
1 5