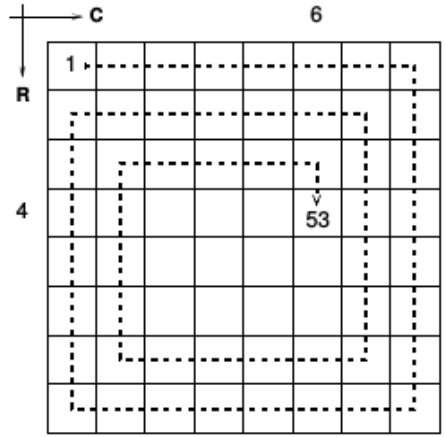
Given a $N \times N$ grid, we would like to place beans, one in each square, following a spiral as shown in the picture. Starting from the upper-left square, with coordinates $(1, 1)$, and then going to the right until possible, then down until possible, then left until possible and then up until possible. We repeat this pattern, right-downleft-up, until $B$ beans are placed into the grid. The problem is: given $N$ and $B$, at which coordinates will the last bean be placed? In the picture, for $N = 8$ and $B = 53$, the last bean is placed at coordinates $(4, 6)$.




## Input

The input contains several test cases. A test case consists of a single line containing two integers, $N$ and $B$, where $2 \leq N \leq 2^{30}$ and $1 \leq B \leq N^2$.

## Output

For each test case in the input your program must output one line containing two integers, $R$ and $C$, where $(R, C)$ are the coordinates of the last bean.

## Sample Input

```
8 53
1073741824 1152921504603393520
```

## Sample Output

```
4 6
536871276 536869983
```