

E. Hexagons

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Ayrat is looking for the perfect code. He decided to start his search from an infinite field tiled by hexagons. For convenience the coordinate system is introduced, take a look at the picture to see how the coordinates of hexagon are defined:

Ayrat is searching through the field. He started at point $(0, 0)$ and is moving along the spiral (see second picture). Sometimes he forgets where he is now. Help Ayrat determine his location after n moves.

Input

The only line of the input contains integer n ($0 \leq n \leq 10^{18}$) — the number of Ayrat's moves.

Output

Print two integers x and y — current coordinates of Ayrat coordinates.

Examples

input
3
output
-2 0

input
7
output
3 2