

# Problem L. Protecting The Earth

**Time limit** 2000 ms  
**Mem limit** 262144 kB  
**OS** Windows

The earth is a coordinate plane and your job is to protect it.

Given  $K$  (the number of people on earth), you have to make a sheild to protect them.

Find the minimum **integer** radius of a circle which is centered in the  $(0, 0)$  coordinates and can contain  $K$  person knowing that a person can only stand on **integer** coordinates and two people can't stand in the same spot.

**Note 1:** A person can stand in the center of the circle.

**Note 2:** The person is considered protected if he's inside the cricle or at the boundary of the circle.

## Input

The only line contains one integer  $K$  ( $2 \leq K \leq 10^9$ ) — the number of people on earth.

## Output

Print one integer: the minimum **integer** circle radius that we need to protect all  $K$  citizens of the earth.

### Sample 1

Input	Output
2	1

### Sample 2

Input	Output
6	2

### Sample 3

Input	Output
13	2