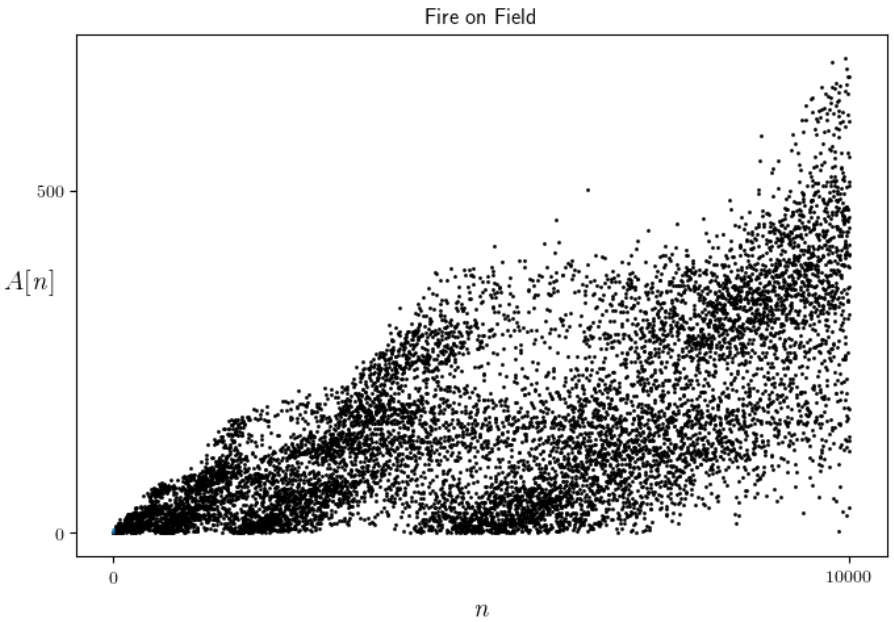
Problem A
Fire on Field
Time Limit: 1 Second

We define A as a sequence of positive integers like the following.

> Let $A[0] = 1, A[1] = 1$. For a positive integer $i \geq 2$, $A[i]$ is the smallest positive integer under the condition that no three terms $A[i-2k]$, $A[i-k]$, and $A[i]$ form an arithmetic progression for any integer $k > 0$ such that $i - 2k \geq 0$, that is, $A[i] - A[i-k] \neq A[i-k] - A[i-2k]$.

The sequence is uniquely determined like the following sequence: $A[0] = 1$, $A[1] = 1$, $A[2] = 2$, $A[3] = 1$, $A[4] = 1$, $A[5] = 2$, $A[6] = 2$, $A[7] = 4$, $A[8] = 4$, etc. The sequence element $A[2]$ cannot be 1 since otherwise $A[0] = 1, A[1] = 1, A[2] = 1$ form an arithmetic progression; here $i = 2$ and $k = 1$. If $A[2]$ is any integer larger than one, then the condition is satisfied. Therefore, $A[2]$ should be 2 which is the smallest positive integer among the possible ones. Similarly, it is easy to know that $A[3] = 1$. The sequence element $A[4]$ cannot be 3 since otherwise $A[4] - A[4-2] = A[4-2] - A[4-2\times 2]$; here $i = 4$ and $k = 2$. Other natural numbers like 1, 2 and 4 are also possible for $A[4]$, but the smallest one is 1. Therefore, $A[4] = 1$.

This sequence is called “fire on field” or “forest fire” since the scatter plot of the sequence looks like spreading fire on a field. See the figure below.



Given a non-negative integer n, write a program to output $A[n]$.

Input
Your program is to read from standard input. The input consists of one line containing one non-negative integer n $(0 \leq n \leq 1{,}000)$.

Output

Your program is to write to standard output. Print exactly one line. The line should contain $A[n]$.

The following shows sample inputs and outputs for three test cases.

Sample Input 1	Output for the Sample Input 1
5	2

Sample Input 2	Output for the Sample Input 2
8	4

Sample Input 3	Output for the Sample Input 3
100	4