B. Pairs of Numbers

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Let's assume that we have a pair of numbers (a, b). We can get a new pair $(a + b, b)$ or $(a, a + b)$ from the given pair in a single step.

Let the initial pair of numbers be (1,1). Your task is to find number k, that is, the least number of steps needed to transform (1,1) into the pair where at least one number equals n.

Input

The input contains the only integer n ($1 \le n \le 10^6$).

Output

Print the only integer k.

Examples

input
5

output
3

input
1

output
0

Note

The pair (1,1) can be transformed into a pair containing 5 in three moves: (1,1) → (1,2) → (3,2) → (5,2).