PROBLEMS   SUBMIT   STATUS   STANDINGS   CUSTOM TEST

B. Fedya and Maths

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Fedya studies in a gymnasium. Fedya's maths hometask is to calculate the following expression:

$$(1^n + 2^n + 3^n + 4^n) \bmod 5$$

for given value of n. Fedya managed to complete the task. Can you? Note that given number n can be extremely large (e.g. it can exceed any integer type of your programming language).

Input

The single line contains a single integer n ($0 \le n \le 10^{10^5}$). The number doesn't contain any leading zeroes.

Output

Print the value of the expression without leading zeros.

Examples

input
4
output
4

input
124356983594583453458888889
output
0

Note

Operation $x \bmod y$ means taking remainder after division x by y.

Note to the first sample:

Codeforces Round #260 (Div. 2)

Finished

→ Problem tags

math   number theory

No tag edit access

→ Contest materials

- Announcement ✕
- Tutorial ✕