



HOME CONTESTS GYM PROBLEMSET GROUPS RATING API CANADA CUP 🖫 SECTIONS

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:

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

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 mod y means taking remainder after division X by y.

Note to the first sample:

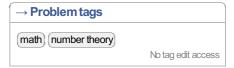
Codeforces Round #260 (Div. 2)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest



→ Contest materials • Announcement • Tutorial