

# Hidden Digits

Input file: standard input  
Output file: standard output  
Time limit: 1 second  
Memory limit: 256 megabytes

There's a hidden string of digits (from 0 to 9) of length  $N$  ( $1 \leq N \leq 18$ ). You want to find out whether there's a substring of any size inside this hidden number that is divisible by 3.

You are allowed to ask **up to 2 queries** of the following format: "?  $i$ ", which tells you the digit at the requested index  $i$  ( $1 \leq i \leq N$ ).

## Input

The first line contains the integer  $N$ , the length of the hidden string.

## Interaction Protocol

You're allowed a maximum of 2 queries of the following format: ?  $i$

After making a query, you get a single line containing a digit from 0 to 9 indicating the digit at the index  $i$  in the hidden string.

To make an answer, output a single line containing ! 1 if there's a substring that's divisible by 3. Otherwise, ! 0.

## Example

standard input	standard output
2	? 1
6	? 2
8	! 1