Problem H. Eight Sins

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

Does every interactive problem have to be binary search?

Somebody has secretly set n integers $a_1, a_2, \ldots, a_n$ such that $1 \le a_1 < a_2 < \ldots < a_n \le k$. You have to guess these integers one by one interacting with the testing system.

Initially $i = 1$. To make a guess, you may send an integer x such that $1 \le x \le k$. The system will reply with a string containing a single character:

- "`>`" if $a_i > x$;
- "`<`" if $a_i < x$;
- "`=`" if $a_i = x$.

In case $a_i = x$, the value of i is increased by 1. You win after you guess all n integers correctly, that is, when i reaches $n + 1$.

Note that the values of $a_1, a_2, \ldots, a_n$ are not chosen in advance by the interactor, but all replies to your queries will be consistent with some valid set of $a_1, a_2, \ldots, a_n$ at any time.

Interaction Protocol

First, the testing system writes a single line containing two integers n and k ($1 \le n \le 100$; $n \le k \le 10^9$), denoting the number of integers to guess and their maximum allowed value.

Your solution shall print requests. Each request consists of a single integer x on a single line. The testing system responds with a single line containing a single character "`>`", "`<`", or "`=`" as described in the problem statement.

Do not forget to flush the output after each request!

Your solution must terminate gracefully after receiving "`=`" from the testing system exactly n times.

Your solution is allowed to issue at most 2600 requests.

Example

standard input	standard output

3 6
`<`
`<`
`=`
`>`
`=`
`=`
	6
	3
	1
	3
	4
	5