Problem I. Guess Cycle Length

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

This is an interactive problem.

Grammy has a directed cyclic graph of n vertices ($1 \le n \le 10^9$) numbered from 1 to n. A directed cyclic graph is a directed graph of n vertices that form one cycle. Specifically, there are n vertices and n edges in the graph, and there exists a permutation $p_1, p_2, \ldots, p_n$ such that there is a one-way edge from p_i to $p_{(i \bmod n)+1}$.

Initially, there is a token on a predetermined vertex.

You can ask Grammy to move the token in the following way:

"`walk x`" where $0 \le x \le 10^9$. In response to the query, Grammy will move the token through exactly x edges and tell you the position of the token after moving.

You win if you guess the number of vertices in the hidden graph (number n) by making no more than 10^4 queries.

The vertices in the graph and the initial position of the token are fixed in advance.

Interaction Protocol

You can make no more than 10^4 queries. To make a query, output "`walk x`" ($0 \le x \le 10^9$) on a separate line, then you should read the response from standard input.

In response to the query, the interactor will move the token through exactly x edges and output the position of the token after moving.

To give your answer, print "`guess n`" on a separate line, where n is the size of the hidden graph ($1 \le n \le 10^9$). The output of the answer is **not** counted towards the limit of 10^4 queries.

After that, your program should terminate.

After printing a query, do not forget to output end of line and flush the output. To do this, use `fflush(stdout)` or `cout.flush()` in C++, `System.out.flush()` in Java, `flush(output)` in Pascal, or `stdout.flush()` in Python.

It is guaranteed that the vertices in the graph and the initial position of the token are fixed in advance.

Example

standard input	standard output
3 10 4 5 3 5	walk 0 walk 1 walk 2 walk 3 walk 4 walk 6 guess 10