

Best Interactive Player

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

This is an interactive problem.

There is a hidden integer x where $1 \leq x \leq 10^9$.

You want to find it by asking whether some integer y is bigger than x or not.

You can query in the format “? y ”, and the interactor will respond to you 1 when $y > x$ and 0 when $y \leq x$.

Interaction Protocol

You can make no more than 100 queries. To make a query, output “? y ” ($1 \leq y \leq 10^9$) on a separate line, then you should read the response from standard input.

To give your answer, print “! x ” on a separate line. The output of the answer is **not** counted towards the limit of 100 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.

Example

standard input	standard output
	? 1
0	
	? 2
0	
	? 3
0	
	? 4
1	
	! 3