

# 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