

Problem L

Ping

Time limit: 2 seconds

This is an interactive problem.

There are N buildings in a row numbered from 1 to N from left to right, with a hidden object in one of the buildings H . You may query a building B , and you will be given the value of $|H - B|$, the distance between your building and hidden object H .

Please determine H in one queries.

Interaction

Your program should output queries for the distance information. After making each query, **you need to make sure to FLUSH standard out.**

You can perform two query:

- ? B : Get the $|H - B|$ the distance between your building and hidden object H , you have unlimited query of this query type.
- ! H : You determine H position, you have exactly one query of this query type.

After determine H , if the position of hidden object is correct, you will receive `correct` from Jury's program, your program should exit with `Accepted` verdict. Otherwise your program will terminate and get `wrong` as feedback. As the result, you will receive `Wrong Answer` verdict.

And after outputting, don't forget to print a newline and flush the output. To do this, use:

- `fflush(stdout)` in C or `cout.flush()` in C++.
- `System.out.flush()` in Java.
- `stdout.flush()` in Python.

Constraints

$$1 \leq N \leq 10^9.$$

Read	Sample Interaction 1	Write
	<code>? 500000000</code>	
<code>250000000</code>		
	<code>? 250000000</code>	
<code>0</code>		
	<code>! 250000000</code>	
<code>correct</code>		

Read

Sample Interaction 2

Write

	? 1	
10		
	? 500000000	
499999989		
	! 11	
correct		