Problem G. Guess sinus

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

This is an interactive problem. Jury choose a real number a ($|a| \leq 10^9$) with no more than 5 digits after decimal point and you need to guess it. You could send jury queries of two types:

1. Send real number x, jury will send you $sign(sin(a \cdot x))$.
2. Send real number y trying to guess number a.

You could send not more than 200 queries of first type and only one query of second type. Your answer will be considered correct if its absolute or relative error will not exceed 10^{-6}.

Input

For each your query of first type a single line will be printed, containing one number: 0, 1 or -1.

There will be no response for second type query.

Output

In each line print one your query.

Print `"? x"` to get $sign(sin(a \cdot x))$ or print `"! y"` if you think that answers is y.

You may use no more than 200 queries of the first type.

Your program should terminate immediately after it sends a query of the second type.

Examples

standard input	standard output
1 -1	? 1 ? -1 ! 1

Note

$sign(sin(a \cdot x))$ will be calculated using standard C++ functions from math.h and `double` datatype.