Problem F. Fix The Bad Ping

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	1024 mebibytes

This is an interactive problem.

Alber Blanc is a proprietary trading firm that provides liquidity for many exchanges with a particular focus on emerging markets. They also provide professional services as a derivatives market maker on different exchanges.

As a developer at Alber Blanc, you have been tasked with optimizing the connections between exchange servers and fund servers. There are a total of 10^9 exchange servers and 10^9 fund servers, and each exchange server is directly connected to every fund server, resulting in 10^{18} connections. Testers have noted that two connections are performing slower than expected. Typically, the latency between servers is 1ms; however, in two cases, the latency is 2ms. To resolve the issue, testers need your help to identify which connections are slow.

To find the slow connections, you can measure the total latency of certain connections. Specifically, you can select e_ℓ, e_r, f_ℓ, and f_r, run tests with these parameters, and determine the total latency of all connections between exchange servers numbered $e_\ell \le i \le e_r$ and fund servers numbered $f_\ell \le j \le f_r$.

The testers urgently request information about the slow connections, so you may measure the total latency no more than 125 times.

Interaction Protocol

The interaction begins with your program making queries. Each query is the line in the format "`?` e_ℓ f_ℓ e_r f_r" (without quotes), where $1 \le e_\ell \le e_r \le 10^9$, $1 \le f_\ell \le f_r \le 10^9$, to represent the parameters of the test. In response, the jury program outputs a single integer — the total latency of selected connections. You may make no more than 125 queries in total.

To output your answer, print the line "`!` e_1 f_1 e_2 f_2" (without quotes), where e_1 and f_1 are the server numbers that make up the first slow connection, and e_2, f_2 are the server numbers of the second slow connection. Connections can be output in any order. Note that outputting the answer does not count as a query.

It is guaranteed that slow connections do not change during the interaction (i.e., the interactor is not adaptive). Remember to print the newline and flush the output buffer after each query and after the answer, or your solution will get `IL` (`Idleness Limit Exceeded`).

Example

standard input	*standard output*
1 2 9 10 4 2	? 1 1 1 1 ? 2 2 2 2 ? 3 4 5 6 ? 4 4 6 6 ? 6 4 6 6 ? 6 5 6 6 ! 2 2 6 4