

There are $n - 1$ integers $a_1, a_2, a_3, \dots, a_{n-1}$, $1 \leq a_i \leq n$. No two integers are the same, so exactly one integer from $\{1, 2, 3, \dots, n\}$ is missing.

Your task is to find out which one is missing.

Interaction Protocol

Your program should read from standard input, and write to standard output. After printing each line to the standard output, you should flush the output, by calling `fflush(stdout)` or `cout << flush` in C/C++, `flush(output)` in Pascal and `System.out.flush()` in Java. Please read general instructions for interactive problems for more information.

First, read the number of test cases T ($1 \leq T \leq 25$). For each test case, first read an integer n ($2 \leq n \leq 1000$). Then issue one or more ‘Ask’ commands followed by one ‘Answer’ command.

Command	Description
Ask i j	Returns the j -th bit of a_i ($1 \leq i \leq n - 1$, $0 \leq j \leq 10$). The bits are numbered 0, 1, ... from right to left.
Answer x	Tells us that x is the missing integer. This command does not return anything.

If your program violated any of these rules (bad format, invalid arguments etc), the server will exit immediately, and you will receive **Protocol Violation (PV)**.

Protocol Limit

For each test case, you can issue at most 2222 ‘Ask’ commands, **otherwise you’ll get Protocol Limit Exceeded (PLE)**.

Sample Explanation: There is only one test case, $a_1 = 2$, $a_2 = 4$, $a_3 = 1$.

Sample Interaction

```
1
4
    Ask 1 0
0
    Ask 1 1
1
    Ask 2 2
1
    Ask 3 0
1
    Ask 3 1
0
    Answer 3
```