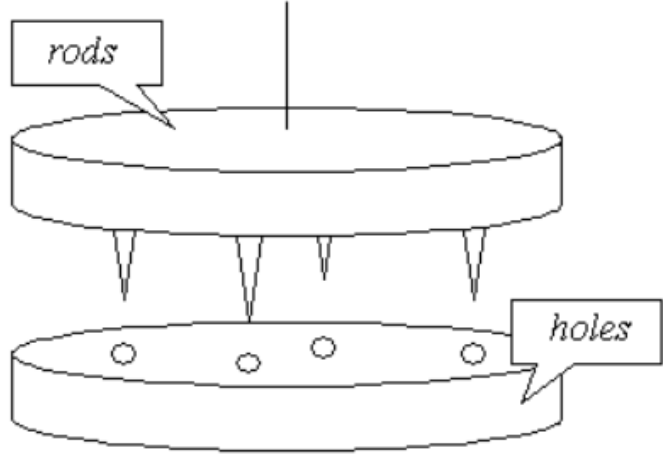


12739 Xmas gift

Christmas is coming. In the center of the city park, there is a huge toy, shown in the picture.



There are n rods in the upper part and n holes in the lower parts. Both rods and holes are equally spaced. The lengths of the rods are exactly $1 \sim n$ (but not necessarily in this order), and depths of the holes are also exactly $1 \sim n$.

Initially, the two parts are touching each other. That means, each rod is in a hole with the same depth as the rod's length. Then, before the game starts, the upper part is lifted and rotated quickly for several seconds.

Your task is the re-connect the two parts like its initial state (i.e. each rod is in a hole with the same depth as the rod's length). Note that you can see the lengths of the rods, but you can't see the depths of the holes.

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 integers n ($1 \leq n \leq 100,000$) in the first line. The next line contains n integers, the lengths of the rods.

Then issue one or more 'Rotate' or 'Drop' command.

Command	Description
Rotate k	Rotate the upper part k unit ($1 \leq k < n$) counter-clockwise. This command does not return anything.
Drop	Try to connect the two parts. Returns the distance of the two parts, i.e. maximum $l_i - d_i$, where l_i is the i -th rod's length (after rotation), d_i is the depth of the i -th hole. When this command returns 0, the current test case ends.

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 5 'Drop' commands (including the last one that successfully connects the two parts), **otherwise you'll get Protocol Limit Exceeded (PLE)**.

Sample Explanation: The holes' lengths are 1, 3, 4, 2, 5. After 'Rotate 4', the rods' lengths are 4, 2, 5, 1, 3.

Sample Interaction

```
1
5
2 5 1 3 4
    Rotate 4
    Drop
3
    Rotate 3
    Drop
0
```