Snake Eating   Problem Code: SNAKEEAT

Submit (/SNCKQL17/submit/SNAKEEAT)

Tweet   Like   Share   Be the first of your friends to like this.

Read problems statements in Russian (http://www.codechef.com/download/translated/SNCKQL17/russian/SNAKEEAT.pdf) and Vietnamese (http://www.codechef.com/download/translated/SNCKQL17/vietnamese/SNAKEEAT.pdf) as well.

Successful Submissions   +

The Chef has acquired a vicious bunch of snakes, and these snakes are ever hungry and end up eating each other. In particular, each snake i has a length L_i, whose initial value is given to you. A snake can eat any other snake which is not longer than itself. That is, snake i can eat snake j (i ≠ j), if $L_i \geq L_j$. And when a snake eats another snake, its length increases by 1. That is, L_i increases by 1.

The Chef doesn't care about snakes eating each other. All he wants is to have as many snakes as possible, which are at least some particular lengths long. You are given Q values: $K_1, K_2, .., K_Q$. Treat each of them independently and output the answer for each. That is, for each K_i, assume that you start out from the beginning with all the snakes alive and the lengths as the initial values given in the input, and find out the maximum number of snakes you can get whose length is at least K_i.

Input

- The first line contains an integer **T**, which is the number of testcases. The description of each testcase follows.
- The first line of each testcase contains two integers: **N** and **Q**, which denote the number of snakes initially, and the number of queries, respectively.
- The second line contains **N** space separated integers: $L_1, L_2, .., L_N$, the initial lengths of the snakes.
- The i-th of the next **Q** lines contains a single integer, K_i.

Output

- For each testcase, output **Q** lines, the i-th of which should have a single integer: The maximum number of snakes the Chef can get which are of length at least K_i.

Constraints

- $1 \leq T \leq 5$
- $1 \leq N, Q \leq 10^5$
- $1 \leq L_i \leq 10^9$
- $1 \leq K_i \leq 10^9$

Example

```
Input:
2
5 2
21 9 5 8 10
10
15
5 1
1 2 3 4 5
100
Output:
3
1
0
```

Explanation

In the first testcase, first query, the second snake (length 9) can eat the fourth snake (length 8), and hence make its length 10. Now, there are four snakes left, and their lengths are {21, 10, 5, 10}. So, we have three snakes with length ≥ 10: Two snakes of length 10 and one snake of length 21. This is the best you can do.

In the second query, no matter what happens, you cannot get more than one snake of length ≥ 15.

In the second testcase, no matter what happens, you cannot get any snake of length ≥ 100. Hence the answer is 0.

Author:	admin3 (/users/admin3)
Tester:	5★ kingofnumbers (/users/kingofnumbers)
Date Added:	18-05-2017
Time Limit:	2 secs
Source Limit:	50000 Bytes
Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.9.2, CPP14, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYPY, PYTH, PYTH 3.4, RUBY, SCALA, SCM chicken, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

Submit (/SNCKQL17/submit/SNAKEEAT)

Comments ▶

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

Compete (https://www.codechef.com/problems/easy) - Monthly Programming Contests and Cook-offs

Here is where you can show off your **computer programming skills**. Take part in our 10 day long monthly coding contest and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), $700 (for Global Community) and lots more CodeChef goodies up for grabs.

Programming Tools

Online IDE (https://www.codechef.com/ide)

Upcoming Coding Contests (http://www.codechef.com/contests#FurtureContests)

Contest Hosting (http://www.codechef.com/hostyourcontest)

Problem Setting (http://www.codechef.com/problemsetting)

CodeChef Tutorials (http://www.codechef.com/wiki/tutorials)

CodeChef Wiki (https://www.codechef.com/wiki)

Practice Problems

Easy (https://www.codechef.com/problems/easy)

Medium (https://www.codechef.com/problems/medium)

Hard (https://www.codechef.com/problems/Hard)

Challenge (https://www.codechef.com/problems/challenge)

Peer (https://www.codechef.com/problems/extcontest)

School (https://www.codechef.com/problems/school)

FAQ's (https://www.codechef.com/wiki/faq)

Initiatives

Go for Gold (http://www.codechef.com/goforgold)

CodeChef for Schools (http://www.codechef.com/school)

Campus Chapters (http://www.codechef.com/campus_chapter/about)

Domain Registration in India (http://www.bigrock.in/) and Web Hosting (http://www.bigrock.com/web-hosting/) powered by BigRock