Problem 2 - Cloud Server (server)

Having finished helping the Reply Code Masters with their software, once again they need your support for the hardware.

Running an online contest uses a lot of hardware resources, so for the day of the Reply Code Challenge we decide to rent some servers from our trusted provider ***AW****esome* ***S****ervers* (**AWS**™).

According to our ***C****omplex* ***M****onitoring* ***S****ystem* (**CMS**™) we need P units of computing power to host the Reply Code Challenge. **AWS**™ provides us the computing power from their N servers, arranged in a single row and numbered from 0 to $N-1$.

As we want to optimise the latency in the communications, we decide to rent only a contiguous subsequence of the servers (defined by a range l and r) whose total sum of computing powers is at least P. Of course, the exceeding part won't be used, so our target is to choose a range that minimise wasted computing as much as possible.

In case of multiple ranges that meet the criteria, we prefer the nearest to the entrance, the one with the lowest starting index l and then the lowest ending index r.

Write a program to help the team choose which range of servers to rent.

Input data

The first line of the input file contains an integer **T**, the number of test cases to solve, followed by **T** testcases, numbered from **1** to **T**.

In each test case, the first line contains the two integers **N** and **P**, the size of servers in the farm and the amount of power needed to run the challenge.

The second line contains **N** integers space-separated, the array **CP**[] of the computing power of the provider's servers.

Output data

The output file must contain **t** lines. For each test case in the input file, the output file must contain a line with the words

Case #t: l r

where t is the test case number (from **1** to **T**) and l r are two space-separated integers: the range indexes of the servers to rent (starting from 0).

Constraints

- $1 \leq \mathbf{T} \leq 20$.
- $1 \leq \mathbf{N} \leq 100\,000$.
- $1 \leq \mathbf{P} \leq 1\,000\,000\,000$.
- $1 \leq \mathbf{CP[i]} \leq 1\,000\,000$, for $i = 0 \ldots N-1$.
- There is always a solution (otherwise it would be a problem to organize the challenge).

Scoring

- **input 1** : $\mathbf{T} = 1$, $\mathbf{N} \leq 10$.
- **input 2** : $\mathbf{T} = 5$, $\mathbf{N} \leq 100$.
- **input 3** : $\mathbf{T} = 10$, $\mathbf{N} \leq 1\,000$.
- **input 4** : $\mathbf{T} = 15$, $\mathbf{N} \leq 10\,000$.
- **input 5** : $\mathbf{T} = 20$, $\mathbf{N} \leq 100\,000$.

Examples

input	output
1 10 23 1 2 3 4 5 6 7 8 9 10	Case #1: 6 8

Explanation

The optimal solution is the subsequence $[7, 8, 9]$ of sum 24, defined by the range $l = 6$ and $r = 8$.
There is no way to obtain 23 as sum of a contiguous subsequence.