

Kick Start 2020 - Round C

Countdown

Problem

Avery has an array of N positive integers. The i -th integer of the array is A_i .

A contiguous subarray is an m -countdown if it is of length m and contains the integers $m, m-1, m-2, \dots, 2, 1$ in that order. For example, $[3, 2, 1]$ is a 3-countdown.

Can you help Avery count the number of K -countdowns in her array?

Input

The first line of the input gives the number of test cases, T . T test cases follow. Each test case begins with a line containing the integers N and K . The second line contains N integers. The i -th integer is A_i .

Output

For each test case, output one line containing `Case #x: y`, where x is the test case number (starting from 1) and y is the number of K -countdowns in her array.

Limits

Time limit: 20 seconds.

Memory limit: 1 GB.

$1 \leq T \leq 100$.

$2 \leq K \leq N$.

$1 \leq A_i \leq 2 \times 10^5$, for all i .

Test Set 1

$2 \leq N \leq 1000$.

Test Set 2

$2 \leq N \leq 2 \times 10^5$ for at most 10 test cases.
For the remaining cases, $2 \leq N \leq 1000$.

Sample

Sample Input

```
3
12 3
1 2 3 7 9 3 2 1 8 3 2 1
4 2
101 100 99 98
```

Sample Output

```
Case #1: 2
Case #2: 0
Case #3: 1
```

9 6
100 7 6 5 4 3 2 1 100

In sample case #1, there are two 3-countdowns as highlighted below.

- 1 2 3 7 9 **3 2 1** 8 3 2 1
- 1 2 3 7 9 3 2 1 8 **3 2 1**

In sample case #2, there are no 2-countdowns.

In sample case #3, there is one 6-countdown as highlighted below.

- 100 7 **6 5 4 3 2 1** 100