Problem

Avery has an array of **N** positive integers. The i-th integer of the array is $\mathbf{A_i}$.

A contiguous subarray is an *m-countdown* if it is of length m and contains the integers m, m-1, m-2, ..., 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 $\mathbf{A_i}$.

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 per test set.
Memory limit: 1GB.
$1 \le \mathbf{T} \le 100$.
$2 \le \mathbf{K} \le \mathbf{N}$.
$1 \le \mathbf{A_i} \le 2 \times 10^5$, for all i.

Test set 1

$2 \le \mathbf{N} \le 1000$.

Test set 2

$2 \le \mathbf{N} \le 2 \times 10^5$ for at most 10 test cases.
For the remaining cases, $2 \le \mathbf{N} \le 1000$.

Sample

Input	Output
3 12 3 1 2 3 7 9 3 2 1 8 3 2 1 4 2 101 100 99 98 9 6 100 7 6 5 4 3 2 1 100	Case #1: 2 Case #2: 0 Case #3: 1

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