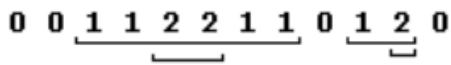
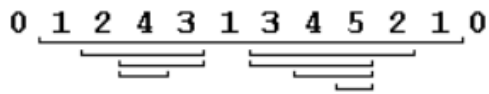
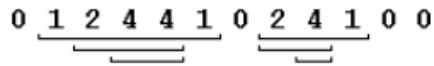
Given a sequence of integers a_1, a_2, a_3, ..., a_n, an *island* in the sequence is a contiguous subsequence for which each element is greater than the elements immediately before and after the subsequence. In the examples below, each island in the sequence has a bracket below it. The bracket for an island contained within another island is below the bracket of the containing island.







Write a program that takes as input a sequence of 12 non-negative integers and outputs the number of islands in the sequence.

Input

The first line of input contains a single integer P, ($1 \leq P \leq 1000$), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line of input. It contains the data set number, K, followed by 12 non-negative integers separated by a single space. The first and last integers in the sequence will be '0'.

Output

For each data set there is one line of output. The single output line consists of the data set number, K, followed by a single space followed by the number of islands in the sequence.

Sample Input

```
4
1 0 0 1 1 2 2 1 1 0 1 2 0
2 0 1 2 4 3 1 3 4 5 2 1 0
3 0 1 2 4 4 1 0 2 4 1 0 0
4 0 1 2 3 4 5 6 7 8 9 10 0
```

Sample Output

```
1 4
2 8
3 6
4 10
```