

## How Many Steps?

Mrs. Chambers always has her class line up in height order (shortest at the front of the line). Every September a new class of exactly 20 3rd graders arrive, all of different height. For the first few days it takes a long time to get the kids in height order, since no one knows where they should be in the line. Needless to say, there is quite a bit of jockeying around. This year Mrs. Chambers decided to try a new method to minimize this ordering chaos. One student would be selected to be the first person in line. Then, another student is selected and would find the *first* person in the line that is taller than him, and stand in front of that person, thereby causing all the students behind him to step back to make room. If there is no student that is taller, then he would stand at the end of the line. This process continues, one student at-a-time, until all the students are in line, at which point the students will be lined up in height order.

For this problem, you will write a program that calculates the total number of steps taken back during the ordering process for a given class of students.

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 non-negative unique integers separated by a single space. The 20 integers represent the height (in millimeters) of each student in the class.

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 total number of steps taken back.

Use the data below for this assignment. Enter it into a text file which you save on the disk. Read the data from the file that you saved.

4																				
1	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919
2	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900
3	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	900
4	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900	919

  

1	0
2	190
3	19
4	171