

Jarin Loves New Task

Jarin has got a new task. She has to connect towers by wire.

Given

1. Number of towers **N** ($2 \leq N \leq 1000$)
2. The length of wire **L** ($0 \leq L \leq 5000$).
3. Coordinates of each tower in 1D starting from left to right and each coordinate will be a positive distinct integer ($0 \leq a[i] \leq 5000$).

Her task is to maximize the number of connected towers using that wire. But she has to make sure each tower is either connected with its left tower or its right tower or have no connection. She has to cut off the wire into particular sizes she wants to use.

It so difficult task for her. So you must have to help her :).

Input

Input starts with an integer **T** (≤ 100), denoting the number of test cases.

Each case starts with two integers **N** and **L** . Next line contains **N** space separated integers.

Output

For each case, print the case number and expected answer.

Sample Input

1

6 2

1 2 3 4 5 6

Output for Sample Input

Case 1: 4

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