

1122 - Digit Count

Given a set of digits **S**, and an integer **n**, you have to find how many **n**-digit integers are there, which contain digits that belong to **S** and the difference between any two adjacent digits is not more than two.

Input

Input starts with an integer **T** (≤ 300), denoting the number of test cases.

Each case contains two integers, **m** ($1 \leq m < 10$) and **n** ($1 \leq n \leq 10$). The next line will contain **m** integers (**from 1 to 9**) separated by spaces. These integers form the set **S** as described above. These integers will be distinct and given in ascending order.

Output

For each case, print the case number and the number of valid **n**-digit integers in a single line.

Sample Input	Output for Sample Input
3	Case 1: 5
3 2	Case 2: 9
1 3 6	Case 3: 9
3 2	
1 2 3	
3 3	
1 4 6	

Note

For the first case the valid integers are

11
13
31
33
66