Game of Tag

There are k children playing a game of tag (numbered 1 through k). For simplicity, we'll view them as points on a line. For each valid a, the position of the a-th child is Xa

It turns out that exactly one of these people is free , but the seeker do not know which one. A free child can free a locked child whenever the distance between them is at most 2. If we wait long enough, a specific set of children (depending on the child that was free initially) will become free; let's call the size of this set the final number of free children.

Your task is to find the smallest and largest value of the final number of free children.

Input Format

The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows. The first line of each test case contains a single integer k. The second line contains N space-seperated integers X1, X2,....., XN

Constraints

1<=T<=2,000 2<=k<=8 0<=Xa10<=Xa for each valid a X1

Output Format

For each test case, print a single line containing two space-separated integers — the minimum and maximum possible final number of free people.

Sample Input 0

```
3
2
3 6
3
1 3 5
5
1 2 5 6 7
```

Sample Output 0

```
1 1
3 3
2 3
```

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C++14

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

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