# Breaking Points

## Description

There’s an integer axis from 1 to n. A pair of integers [l, r] (l <= r) is called an interval which containing all the points between point l and point r(inclusive). The length of the interval [l, r] is the number of points (including point l and point r) in it. An interval is no bigger than k means the length of the interval dosen’t exceed k.

Given the integers n, k, m and m breaking points bi(i = 1,2,3,....,m-1,m) on this axis, you should calculate the total number of intervals no bigger than k and containing at least one breakpoint.

## Input

The first line contains an integer T ( T <= 100 ), then T cases follows.

In each case, there are 2 lines of input.

The first line contains 3 integers n, k, m as mentioned above.

The second line contains m distinct integers bi, indicating the position of the ith breaking point.

1 <= T <= 100

1 <= n <= 50000

1 <= k <= n

1 <= m <= n

1 <= bi <= n

## Output

For each case, you should out put the answer in a single line.

## Sample

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  10 10 1  1  10 10 10  10 9 8 7 6 5 4 3 2 1  10 1 10  1 2 3 4 5 6 7 8 9 10  10 3 2  4 1 | 10  55  10  9 |

## Hint

In the 4th example, the qualified intervals are [1,1], [4,4], [1,2], [1,3], [3,4], [4,5], [2,4], [3,5], [4,6]