Problem G
Website Hits
Max no. of test cases: 16
Time limit: 4 seconds

The NCPC practice website is the goto site for programming practices. The website keeps a count of number of people visiting the website each day. After many months in service, there are now n days of website hit count, namely $h_1, h_2, ..., h_n$, available for analysis. The website manager wants to know if there are trends in the hit counts, so he decides to do the following analysis.

Define the k-day hit count interval starting at day i to be $h_i, h_{i+1}, h_{i+2}, ..., h_{i+k-1}$. Thus, there can be exactly $n - k + 1$ k-day intervals, starting from day $1, 2, ...,$ and day $n - k + 1$, respectively. A pair of k-day intervals is called m-similar if the number of corresponding days that have different hit count is at most m. In other words, if $k_i = [h_i, h_{i+1}, \ldots, h_{i+k-1}]$ and $k_j = [h_j, h_{j+1}, \ldots, h_{j+k-1}]$, k_i and k_j are m-similar if $\sum_{c=0}^{k-1} (h_{i+c} \neq h_{j+c}) \leq m$.

For example, if the hit counts collected are $34, 56, 96, 78, 34, 56, 60, 78, 52, 96, 60, 30$. then 7-day interval ($k = 7$) starting at day 1 and day 5 are $k_1 = 34, 56, 96, 78, 34, 56, 60$ and $k_5 = 34, 56, 60, 78, 52, 96, 60$. The two 7-day intervals have 3 corresponding days with different hit counts (day 3, 5, 6). Thus intervals k_1 and k_5 are at least $3-$similar (can also be said to be $4-$, $5-$, $6-$, or $7-$similar). For this example, total number of pair of intervals that is 4-similar is 2 (k_1–k_5 and k_2– k_6).

Given the hit counts and the interval length k, please help determine the total number of pair of intervals that are $m-$similar in a sequence of queries.

Input File Format

The first line of input contains an integer indicating the number of test cases. For each test case, the first line contains three integer, n, k, and q which are the number of consecutive days of hit count collected, the interval length to be analyzed, and the number of $m-$similar interval pairs to be computed. Note that $1 \leq k \leq n \leq 10,000$ and $q \leq 100$. The next line contains n integers, indicating the number of hit counts in n consecutive days. Note that the hit counts are all positive integers but no greater than 10^9. The next q lines each contains an integer m, which is a query asking for the number of $m-$similar k-day interval pairs in the given list of hit counts.

Output Format

For each test case, output q integers on a single line, which are the total number of m−similar interval pairs among all k-day intervals for each of the q queries in the input. The answer should be in sequence of the q queries.

Sample Input

```
2
12 7 3
34 56 96 96 34 56 60 96 52 96 60 30    <-- 12 hit counts ==> six 7-day interval
4                       <-- query on number of 4-similar 7-day interval pairs
6                       <-- query on number of 6-similar 7-day interval pairs
2                       <-- query on number of 2-similar 7-day interval pairs
4 2 2
1 2 1 4                 <-- four hit counts ==> three 2-day interval
1                       <-- query on number of 1-similar 2-day interval pairs
2                       <-- query on number of 2-similar 2-day interval pairs
```

Output for the Sample Input

```
2 9 0
1 3
```