

Let's consider a string  $s$  of length  $n$  ( $0 < n < 10000$ ) containing only characters from **a** to **z**. We define a cut  $c_i$  ( $0 < i < n$ ) is an action splitting the string  $s$  into 2 substrings  $s_1$  and  $s_2$  so that  $s_1$  consists of first  $i$  characters of  $s$  and  $s_2$  consists of remaining characters from  $s$ . Each cut is associated with a cost which equals to the total number of characters consisted in either  $s_1$  or  $s_2$  but not in both. For example, let  $s = \text{'abc bacbd'}$ , the cut  $c_5$  will break  $s$  into  $s_1 = \text{'abcba'}$  and  $s_2 = \text{'cbd'}$  with the cost of 2.

The original string can be cut into  $k + 1$  substrings after applying  $k$  cuts sequentially to the string and its subsequent substrings. In order to simply describe these  $k$  cuts, we specify the position of the cuts with regard to the original string.

Let's consider an example where we sequentially apply 3 cuts at positions 5, 3 and 6 to the string  $s = \text{'ababccd'}$ . After the first cut at position 5, we have two substrings  $s_1 = \text{'ababc'}$  and  $s_2 = \text{'cd'}$  with the cost of 3. The second cut at position 3 breaks  $s_1$  into two substrings  $s_{11} = \text{'aba'}$  and  $s_{12} = \text{'bc'}$  with the cost of 2. The last cut at position 6 breaks  $s_2$  into two substrings  $s_{21} = \text{'c'}$  and  $s_{22} = \text{'d'}$  with the cost of 2. The total cost for the 3 cuts is  $3+2+2=7$ . Given a string and their cuts, your task is to write a program to compute the total cost for the cut.

## Input

The input consists of several data sets. The first line of the input file contains the number of data sets which is a positive integer and is not bigger than 20. The following lines describe the data sets.

For each data set, the first line contains the integer number  $k$  ( $1 \leq k \leq 1000$ ). The second line contains  $k$  positive integer numbers describing the position of  $k$  cuts. The third line contains the string which will be cut.

## Output

For each test case, write in one line the total cost of the cuts.

## Sample Input

```
2
3
5 3 6
ababccd
2
4 2
ababcd
```

## Sample Output

```
7
4
```