CSEC-ASTU Competitive Programming Contest 2021

Problem 93: String Cutting

Time limit: 3s

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 = 'abcbacbd', the cut c5 will break s into s_1 = 'abcba' and s_2 = '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 = 'ababccd'. After the first cut at position 5, we have two substrings s_1 = 'ababc' and s_2 = 'cd' with the cost of 3. The second cut at position 3 breaks s1 into two substrings s11 = 'aba' and s_{12} = 'bc' with the cost of 2. The last cut at position 6 breaks s_2 into two substrings s_{21} = 'c' and s_{22} = '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

Each case of input starts with a positive integer N < 100. N lines follow each containing at least 1 and at most 100 characters. The Input characters will consist of alphanumeric, spaces, backslash and quotation only. The last case is followed by a value of 0 for N.

For each data set, the first line contains the integer number k ($1 \le k \le 1000$). 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.

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Sample Input	Sample Output
2 3 5 3 6 ababccd 2 4 2 ababcd	7 4