Mirko's ASCII street is made of **N** lowercase letters of the English alphabet. The city government occasionally replaces the tiles in the street. However, the letter tiles are in high demand, so the government has only **M** different tile patterns available.

The **i**th tile pattern consists of $\mathbf{L_i}$ letters. A tile cannot be rotated or broken into pieces, and it can only be placed such that the **tile letters coincide with the contiguous letter subsequence in the street**. Tiles can overlap and we can use multiple tiles of the same pattern.

A street cell is **untileable** if it cannot be covered by any tile. Compute the number of untileable cells.

INPUT

The first line of input contains the positive integer **N** ($1 \leq \mathbf{N} \leq 300\,000$), the length of the street.

The second line of input contains **N** lowercase English letters, the letter sequence in the street.

The third line of input contains the positive integer **M** ($1 \leq \mathbf{M} \leq 5000$), the number of tile patterns.

Each of the next **M** lines contains a description of a tile pattern with length $\mathbf{L_i}$ ($1 \leq \mathbf{L_i} \leq 5000$). The tile pattern descriptions consist of lowercase English letters.

OUTPUT

The first and only line of output must contain the required number of untileable cells.

SAMPLE TESTS

input	**input**	**input**
6 abcbab 2 cb cbab	4 abab 2 bac baba	6 abcabc 2 abca cab
output	**output**	**output**
2	4	1