String Obsession

Problem Description

Who knows the reason for why little Meera is so obsessed with strings and loves to spend her time analyzing them!?

Meera has an everlasting passion for strings. One day, she took a string (let us call it the main string) along with some substrings and decided to remove as many substrings from the main string as possible. Whenever a part is removed, the remaining portions of the string are joined together. For example, if the main string is "hello" and "el" is removed, it becomes "hlo." Note that she can remove one substring only once from the string.

Given the main string and the substrings, determine and print the maximum number of substrings that can be removed.

Constraints

1 <= length of main string <= 55

1 <= length of each substring <= 15

Both main and substrings will be having only lower-case alphabets only.

Input

First line consists of *N*, denoting the total number of substrings.

Next line consists of N space separated substrings.

Last line consists of the main string.

Output

Print a single integer denoting the maximum number of substrings that can be removed.

Time Limit (secs)

1

Examples

Example 1

Input

6

hd el llo wor ell lds

helloworlds

Output

4

Explanation

Given main string is - *helloworlds*

Remove *llo,* the string becomes *heworlds*

Remove *wor,* the string becomes *helds*

Remove *el*, the string becomes *hds*

Remove *hd,* the string becomes *s*. One cannot remove anything further.

Hence the maximum number of substrings we can remove is 4, print 4 as output.

Example 2

Input

7

ggc rm oo le glh oog ec

googlechrome

Output

3

Explanation

Given main string is - *googlechrome*

Remove *oo,* the string becomes *gglechrome*

Remove *le,* the string becomes *ggchrome*

Remove *ggc*, the string becomes *hrome*. One cannot remove anything further.

Second possibility can also be - removing *ec*,*glh*,*oo* resulting in *grome*, further reduction is impossible. In this case also only 3 substrings have been removed.

Hence the maximum number of substrings we can remove is 3, hence print 3 as output.