## XFromY

## Marks: 30

### Problem Description

Malaika is very fond of strings so whenever she gets some free time, she will keep herself engaged in string based activities.

One day, she came across a question where she will be given two strings X & Y and asked to form X from Y. The rules for forming the string are given below.

* The string X should be formed with the concatenation of the sub strings of Y. You can also select the sub strings from Y in reversed order.
* The length of the sub strings selected from Y should be greater than or equal to one.
* Aim is to minimize the number of sub strings that are selected from Y and concatenated to form X.
* A term *String Factor* is defined which is calculated as (number of sub strings selected from Y) \* S + (number of sub strings selected from reversed Y) \* R, where S and R are given in the input.
* You also have to minimize the *String Factor* while maintaining the minimum number of sub strings.

Given two strings X and Y and two integers S and R, find the minimum *String Factor* of the string X following above rules.

### Constraints

1 <= lengths of X,Y <= 10^4

0 <= S, R <= 10^3

X, Y consists of lower case alphabets only.

### Input

First line consists of string X.

Second line consists of string Y.

Third line consists of two integers S and R separated by space.

### Output

Form the string X from string Y following the above rules and print the *String Facto*r of X. Print "Impossible" if X can't be formed from Y.

### Time Limit (secs)

1

### Examples

Example 1

Input

niveditha

lavekdahnita

3 5

Output

17

Explanation

For forming the string *niveditha* from *lavekdahnita,* select sub strings ni from Y, ve from Y, d from Y, it from Y, ha from reversed Y. No other selections can give less than five sub strings.

String Factor = (number of sub strings selected from Y) \* S + (number of sub strings selected from reversed Y) \* R = (4\*3) + (1\*5) = 17

Example 2

Input

abcdef

pafedexycbc

4 2

Output

6

Explanation

For forming the string *abcdef* from *pafedexycbc,* select the sub string 'a' from reversed Y, bc from reversed Y, def from reversed Y. No other selections can give less than three sub strings.

String Factor = (number of sub strings selected from Y) \* S + (number of sub strings selected from reversed Y) \* R = (0\*4) + (3\*2) = 6