"Minimum Distance Strings

You are given a string S and an integer K.

Two strings are called attractive if the distance between S1 and S2 is equal to K, where S1 and S2 are any two strings of equal length and K is an integer.

Distance between two characters is defined as the absolute difference between their positions in alphabetical order.

For example, distance(a, c) = 2.

To find the distance between two strings, you have to calculate the sum of the absolute difference between their corresponding characters.

For example distance(abc, zyx) = distance (a,z) + distance (b,y) + distance (c,x) = 25 + 23 + 21 = 69.

Find the smallest lexicographical string S1 of equal length as string S, such that dis(S1, S)=K, and if it is not possible to create the string S1 then print -1.

Note

The string contains at least one character and strings consist only of lowecase characters.

K is an integer.

Function Description

In the provided code snippet, implement the provided minDistanceString(...) method to find the smallest lexicographical string S1 of equal length as string S, such that dis(S1, S)=K. You can write your code in the space below the phrase “WRITE YOUR LOGIC HERE”.

There will be multiple test cases running so the Input and Output should match exactly as provided.

Input Format

The first line contains a string S.

The second line contains an integer K.

Sample Input

cdxy

3

Constraints

0< length of string <= 10^3.

0<= K <= 10^9.

Output Format

The output should be the smallest lexicographical string S1 of equal length as string S, such that dis(S1, S)=K, and if it is not possible to create the string S1 then print -1.

Sample Output

acxy

Explanation

String S = ”cdxy” , K = 3

Try to keep the character lexicographically as small as possible from the 0th index to the last index in the string.

To achieve that, we will replace the first character i.e ""c"" to ""a"" and replace the second character i.e ""d"" to ""c"".

Our final answer string is “acxy” as distance(c,a) + distance(d,c) + distance(x,x) + distance(y,y) = 2 + 1 + 0 + 0 = 3 = K.

Hence, our smallest lexicographical string is “acxy”."