

Problem E. Message

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 256 mebibytes

One evening Zenyk decided to send some nice message to Marichka to congratulate her on the start of spring. Initially, he entered message s on his phone, but after a moment he realized, that it would be much better to enter message t .

Unfortunately, it's not so easy to change the message now – the only thing Zenyk is able to do is to remove the first or the last occurrence of any letter. Please note that he is able to perform this operation any number of times. Moreover, the letters are not removed instantly. It takes w_i seconds to remove character that was initially placed on i -th position in string s .

Help Zenyk to calculate the minimum number of seconds it takes to transform message s into t using the described operations. If it's impossible to do that, print a single line “You better start from scratch man...” (without quotes).

Input

The first line of the input contains string s , the second – string t ($1 \leq |s|, |t| \leq 200000$). Strings s and t consist only of the lower case latin letters **a–z**.

The third line contains $|s|$ space-separated integers w_i , each of which denotes the number of seconds it takes to remove the corresponding character ($1 \leq w_i \leq 10^9$).

Output

If Zenyk is able to transform s into t , print the minimum number of seconds required to do that. Otherwise, print “You better start from scratch man...” (without quotes).

Examples

standard input	standard output
ababccb abc 7 2 2 4 3 2 1	7
babab baab 2 1 3 2 4	You better start from scratch man...