

Problem G. Ook

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 512 mebibytes

The librarian has a ticket with a string consisting of letters “o” and “k”. Additionally, he has a pattern from the grocery store. The pattern contains a string which consists of characters “o”, “k”, and “?”.

The librarian can perform an arbitrary number of any of the following operations in any order:

1. Put the pattern onto the ticket and cut the respective piece of the ticket: the number of letters on the piece has to be equal to the number of characters in the pattern. The remaining parts of the ticket can be used to cut more pieces, but only separately (they are not glued together). Any or both remaining parts can contain no more letters (in that case, obviously, the pattern can not be put onto them).
2. Take a piece of the ticket obtained by the first operation to the grocery store and exchange it for bananas.

When exchanging a piece of the ticket for bananas, the shopkeeper acts as follows. He starts by putting bananas into a heap. Initially, the heap is empty. The shopkeeper looks over the piece of the ticket, from left to right. For every letter “o” on it, he adds o bananas to the heap, and for every letter “k”, he adds k bananas.

After that, the shopkeeper compares two strings from left to right, character by character: the one on the pattern and the one on the piece of the ticket. During the comparison, a “?” character in the pattern is considered equal to any letter. If the shopkeeper discovers a mismatch in a certain position, he gets very angry, and because of that, his hunger intensifies. As a result, he divides the heap into two parts such that the difference in the number of bananas is at most one, and then eats the part which is not less than the other. After that, the shopkeeper continues comparing the strings until either he compares the last pair of characters or the heap of bananas becomes empty.

All bananas left in the heap after comparison are given to the librarian in exchange for the part of the ticket.

Find the maximum possible number of bananas the librarian can obtain.

Input

The first line contains two integers o and k ($0 \leq o, k \leq 5000$). The second line contains a string S consisting of letters “o” and “k”: the one printed on the ticket. The third line contains a string P consisting of characters “o”, “k”, and “?”: the one printed on the pattern. It is guaranteed that $1 \leq |P| \leq |S| \leq 250\,000$.

Output

Print the maximum possible number of bananas the librarian can obtain.

Examples

standard input	standard output
2 1 ookookook koo	10
1 3 kooooook ?	13
1000 0 kookoo ook	2000
21 1 ooo kkk	7