CODEFORCES
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PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   ROOM   STANDINGS   CUSTOM INVOCATION

D. Good Substrings

time limit per test: 2 seconds

memory limit per test: 512 megabytes

You've got string s, consisting of small English letters. Some of the English letters are *good*, the rest are *bad*.

A substring $s[l...r]$ $(1 \leq l \leq r \leq |s|)$ of string $s = s_1s_2...s_{|s|}$ (where $|s|$ is the length of string s) is string $s_ls_{l+1}...s_r$.

The substring $s[l...r]$ is *good*, if among the letters $s_l, s_{l+1}, ..., s_r$ there are **at most k bad** ones (look at the sample's explanation to understand it more clear).

Your task is to find the number of distinct good substrings of the given string s. Two substrings $s[x...y]$ and $s[p...q]$ are considered distinct if their content is different, i.e. $s[x...y] \neq s[p...q]$.

Input

The first line of the input is the non-empty string s, consisting of small English letters, the string's length is at most 1500 characters.
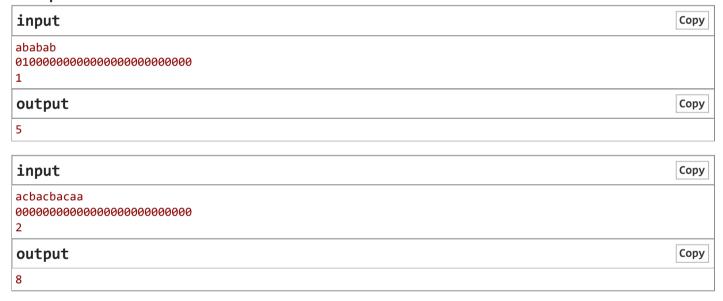
The second line of the input is the string of characters "0" and "1", the length is exactly 26 characters. If the i-th character of this string equals "1", then the i-th English letter is good, otherwise it's bad. That is, the first character of this string corresponds to letter "a", the second one corresponds to letter "b" and so on.

The third line of the input consists a single integer k $(0 \leq k \leq |s|)$ — the maximum acceptable number of bad characters in a good substring.

Output

Print a single integer — the number of distinct good substrings of string s.

Examples

input	Copy
ababab 01000000000000000000000000 1	

output	Copy
5	

input	Copy
acbacbacaa 00000000000000000000000000 2	

output	Copy
8	

Note

In the first example there are following good substrings: "a", "ab", "b", "ba", "bab".

In the second example there are following good substrings: "a", "aa", "ac", "b", "ba", "c", "ca", "cb".

Codeforces Round 166 (Div. 2)

Finished
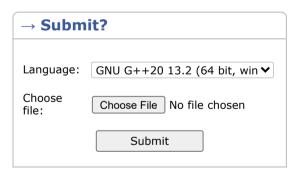
Practice

⭐

→ **Virtual participation** ⌄

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems - a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest]

→ **Clone Contest to Mashup** ⌄

You can clone this contest to a mashup.

[Clone Contest]

→ **Submit?**

Language: GNU G++20 13.2 (64 bit, win ⌄)

Choose file: [Choose File] No file chosen

[Submit]

→ **Last submissions**

Submission	Time	Verdict
281032821	Sep/13/2024 22:08	Accepted
280980099	Sep/13/2024 15:16	Accepted
280979845	Sep/13/2024 15:14	Wrong answer on test 8
280977870	Sep/13/2024 14:58	Wrong answer on test 8
280977728	Sep/13/2024 14:57	Wrong answer on test 1
280977596	Sep/13/2024 14:55	Wrong answer on test 8
280977538	Sep/13/2024 14:55	Wrong answer on test 1
280976932	Sep/13/2024 14:49	Wrong answer on test 6
280976805	Sep/13/2024 14:48	Wrong answer on test 6