

[HOME](#) [CONTESTS](#) [GYM](#) [PROBLEMSET](#) [GROUPS](#) [RATING](#) [API](#) [AIM TECH ROUND](#)  [VK CUP](#)  [SECTIONS](#)
[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

input: standard input

output: standard output

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
ababab 010000000000000000000000000000 1
output
5

input
acbacbacaa 000000000000000000000000000000 2
output
8

### Note

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

### → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

### 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 ACM-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](#)

### → Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

### → Submit?

Language: GNU G++ 5.1.0 ▼

Choose file: [Choose File](#) No file chosen

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

[Submit](#)

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



[→ Last submissions](#)

Submission	Time	Verdict
<a href="#">20188171</a>	Aug/27/2016 08:28	Accepted
<a href="#">19535200</a>	Jul/31/2016 12:46	Time limit exceeded on test 8
<a href="#">19529039</a>	Jul/31/2016 05:23	Time limit exceeded on test 8

[→ Problem tags](#)

<a href="#">data structures</a>	<a href="#">strings</a>	No tag edit access
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[→ Contest materials](#)

- Announcement 
- Tutorial 

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