Back From Summer '19 P3: ASDFGHJKL

Time limit: 1.0s **Memory limit:** 128M

Jonathan is given a string S containing solely lowercase English letters. He is asked to perform the two following operations in order exactly once:

- Remove a substring of length *up to* L (inclusive) from the string.
- Remove *up to* K (inclusive) characters from the remaining string.

Let c_a be the number of `a`'s in the resultant string, c_b be the number of `b`'s, etc. Jonathan's goal is to minimize $c_a^2 + c_b^2 + \cdots + c_z^2$ after performing the two operations. What is the minimum possible value?

Python users are recommended to use PyPy over CPython. There is a significant performance increase.

Input Specification

The first line will contain the string S $(1 \leq |S| \leq 10^5)$. S will only contain lowercase English letters.

The second line will contain two integers, L, K $(0 \leq L, K \leq |S|)$.

Output Specification

Output the minimum possible value of $c_a^2 + c_b^2 + \cdots + c_z^2$ for Jonathan.

Constraints

Subtask 1 [30%]

$L = 0$

Subtask 2 [70%]

No additional constraints.

Sample Input 1

```
abcdefghijkllllll
0 5
```

Sample Output 1

```
12
```

Sample Input 2

```
rimuruclasher
3 2
```

Sample Output 2

```
8
```