

# Problem E

## Evil Judges

Time Limit: 1 second

The evil judges preparing the ICPC problem sets are tired of seeing the talented contestants AC their problems and AK (“all kill”) their problem sets. They have grown so tired of this that they’ve started to dislike any strings where AC or AK appear as subsequences. The judges just found a string  $s$  consisting of only the characters A, C, and K and are determined to destroy these subsequences!

In one operation, the judges are able to swap two adjacent characters in the string  $s$ . To be more precise, the judges may choose an index  $i$  ( $1 \leq i < |s|$ ) and swap  $s_i$  and  $s_{i+1}$ . The judges are very busy and don’t have much time, so they can only do this operation up to  $M$  times (independently choosing an index  $i$  each time).

The judges’ goal is to minimize the number of subsequences (**possibly non-contiguous**) that are AC or AK. Help them calculate the number of AC and AK subsequences that remain within  $s$  after the judges perform an optimal sequence of up to  $M$  swap operations.

### Input

The first line of input contains the string  $s$  ( $1 \leq |s| \leq 2 \cdot 10^5$ ). The string consists only of the characters A, C, and K.

The second line contains an integer  $M$  ( $0 \leq M \leq 2 \cdot 10^9$ ), the maximum number of swaps the judges can perform.

### Output

Print the minimum total number of AC and AK subsequences that remain in  $s$  after an optimal sequence of at most  $M$  swap operations.

### Explanation of Sample Input 1

In Sample Input 1, the string  $s$  initially has seven different AC subsequences and four different AK subsequences. One optimal choice of five swaps yields the new string ACCCAAKA which only has three AC subsequences and three AK subsequences left.

Sample Input 1	Sample Output 1
ACAACCAK 5	6



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**Sample Input 2**

```
CCKKAKCKCK
1000000000
```

**Sample Output 2**

```
0
```

**Sample Input 3**

```
AAAAAAAAACCCCCCCCC
13
```

**Sample Output 3**

```
68
```