Mock CCC '24 Contest 1 J4/S1 - Magical Magnetic Marbles

Time limit: 1.0s **Memory limit:** 512M

You are given a row of slots numbered from 1 to N. Each slot can either be vacant (`0`) or contain a magnetic marble (`1`). The magnetic forces in these marbles prompt adjacent ones to merge into a single marble, settling in the slot of the rightmost merging marbles. Marbles merge immediately when adjacent, including in the starting configuration. Your task is to place **exactly** K marbles such that the resulting number of marbles is the minimum possible.

Input Specification

The input will consist of two lines. The first line will contain two integers N and K, representing the number of slots and number of marbles that you can add respectively.

The second line will contain a string of `0` and `1` of length N.

The following table shows how the available 15 marks are distributed.

Marks Awarded	N	K
6 marks	$2 \leq N \leq 10^3$	$0 \leq K \leq 10^3$
9 marks	$2 \leq N \leq 10^6$	$0 \leq K \leq 10^6$

Output Specification

The output will consist of a single integer indicating the minimum possible number of marbles in the slots after all marbles have been placed.

Sample Input 1

```
6 1
010111
```

Sample Output 1

```
2
```

Explanation for Sample 1

In the given example, the row of slots can be represented as `010111` at the beginning. We can perform a merge immediately, and the configuration becomes `010001`. We can place one marble at the first slot and result in the configuration `110001`. Then, another merge can be performed, and our final configuration becomes `010001` which has the minimum possible number of marbles after all marbles are placed and merged.

Sample Input 2

```
30 9
100010000000001001001000001001
```

Sample Output 2

```
3
```