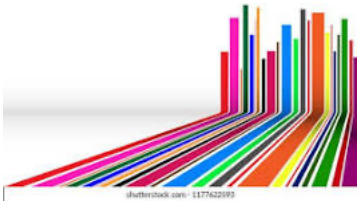
C. Minimizing Penalty on a Colored Strip

Constraint: Time Limit: 2 seconds, Memory: 512MB



Problem description

You are given a strip of **n** consecutive cells, all initially colored **red**. In one operation, you may select a contiguous segment of cells and **paint it blue**. The selected segment may contain cells of any color (either red or blue). However, once a cell becomes blue, it can **never be repainted red**. You are allowed to perform **at most k operations** (possibly none at all).

For each cell, a **desired final color** is given — either red or blue. Since it may not always be possible to achieve this desired pattern within **k** operations, each cell **i** has an associated **penalty value a_i**, which applies if the cell's final color does not match its desired color.

The total penalty of a final coloring is defined as the **maximum penalty value** among all incorrectly colored cells. If every cell matches its desired color, the penalty is **0**.

Your task is to determine the **minimum possible penalty** that can be achieved after performing at most **k** painting operations.

INPUT	OUTPUT
The first line contains an integer t ($1 \le t \le 10^4$): the number of test cases. The first line of each test case contains two integers n ($1 \le n \le 3 \times 10^5$) and k ($0 \le k \le n$) — the length of the strip and the maximum number of operations. The second line contains a string s, consisting of n characters 'R' and/or 'B'. 'R' means that the cell should be painted red. 'B' means that the cell should be painted blue. The third line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the penalty for each cell. The sum of n over all test cases does not exceed 3×10^5.	For each test case, print a single integer — the minimum penalty of the final painting.

Example 1:

INPUT	OUTPUT
1 5 1 BRBRR 5 2 7 9 9	2

Example 2:

INPUT	OUTPUT
1 6 2 RBBBRR 3 5 1 4 2 6	0

Example 3:

INPUT	OUTPUT
5 4 1 BRBR 9 3 5 4 4 1 BRBR 9 5 3 4 4 2 BRBR 9 3 5 4 10 2 BRBRBBRRBR 5 1 2 4 5 3 6 1 5 4 5 5 RRRRR 5 3 1 2 4	3 3 0 4 0