The Reading Challenge

United International University (UIU) is hosting a special event for its students called the **Reading Relay**. In this event, there are k teams, each with 3 members, and each team must read a set of books. The books have been received in a random order, and each team must read a continuous set of books. The winning team needs to read the maximum number of books, but all your team members are too lazy. So, your team wants to read as few pages as possible.

Your task is to determine how many pages your team must read to win the competition.

Note: Must use Divide & Conquer approach.

Input Format:

The program will take two integers n and k ($1 \leq n,k \leq 10^9$) representing the number of books and the number of teams, respectively, followed by an array representing the number of pages in the i-th book.

Output Format:

The output should be the number of pages your team needs to read to win the competition. If it is not possible to allocate books to all teams, return -1.

Examples:

Input	**Output**
4 2 12 34 67 90	113

Explanation:

The books can be distributed in the following ways:

- **[12] and [34, 67, 90]**: The first team reads 12 pages, and the second team reads 34 + 67 + 90 = 191 pages. The maximum number of pages assigned to any team is **191**.
- **[12, 34] and [67, 90]**: The first team reads 12 + 34 = 46 pages, and the second team reads 67 + 90 = 157 pages. The maximum number of pages assigned to any team is **157**.
- **[12, 34, 67] and [90]**: The first team reads 12 + 34 + 67 = 113 pages, and the second team reads 90 pages. The maximum number of pages assigned to any team is **113**.

So, the optimal solution is **[12, 34, 67]** for your team, and your team needs to read **113 pages** with **3 books**.

3 5 5 17 20	-1
8 4 13 6 12 8 16 2 25 15	31

You: The Great Cheater

You are participating in an **online gaming tournament**, where you play **n** rounds of a competitive game. In each round, you either win or lose. If you lose, you get **0 points**. If you win, you earn either **1 point** or **2 points**: if you win the current round and also won the previous round, you earn **2 points**; otherwise, you get **1 point**. If you win the very first round, you get **1 point** (since there is no "previous round" to consider).

The outcomes of your **n** rounds are represented by a string **s** of length **n**: the **i-th** character of **s** is **W** if you won the **i-th** round, and **L** if you lost the round.

Suddenly, you notice a glitch in the system that allows you to change the outcome of up to **k** rounds. This means you can flip **k** outcomes, changing **L** to **W** or **W** to **L**. Since your goal is to maximize your score and improve your ranking, you decide to exploit the glitch.

Now, compute the maximum score you can achieve by cheating optimally.

Input Format:

The first line contains two integers **n, k** ($1 \le n \le 100{,}000$, $0 \le k \le n$) — the number of rounds played and the number of result you can change.

The second line contains a string **s** of length **n** containing only the characters **W** and **L**.

Output Format:

Print a single integer — the maximum score you can get by cheating optimally.

Examples:

Input	Output
5 2 WLWLL	7
Explanation: Before changing any outcome, the score is 2. Indeed, you won the first game, so you got 1 point, and you won also the third, so you got another 1 point (and not 2 because you lost the second game). An optimal way to cheat is to change the outcomes of the second and fourth game. Doing so, you end up winning the first four games (the string of the outcomes becomes WWWWL). Hence, the new score is 7=1+2+2+2: 1 point for the first game and 2 points for	

the second, third and fourth game.	
6 5 LLLWWL	11
Explanation: Before changing any outcome, the score is 3. Indeed, you won the fourth game, so you got 1 point, and you won also the fifth game, so you got 2 more points (since you won also the previous game). An optimal way to cheat is to change the outcomes of the first, second, third and sixth game. Doing so, you end up winning all games (the string of the outcomes becomes WWWWWW). Hence, the new score is 11=1+2+2+2+2+2: 1 point for the first game and 2 points for all the other games.	
40 7 LLWLWLWWWLWLLWLWWWLWLLWLLWLLLLWLLWWWLWWL	46
1 1 L	1