There are many action superheroes out there: Batman, Spiderman, Superman, Icantwriteman etc. Among them, there is one gentleman called Kickass. Today he wants to mimic Spiderman, so he has chosen a row of tall skyscrapers to jump around on.

Specifically, he has chosen a sequence of **N** skyscrapers numbered 1 through **N** from left to right. He is initially located on the **K**th skyscraper. Unfortunately, Kickass has very limited powers, and can therefore jump only to the **adjacent** skyscraper to the left or right, and only if that skyscraper's height is **not greater** than the height of the skyscraper he is currently on. However, anticipating this and not wanting to look weak, he has positioned **trampolines** on top of some skyscrapers, and from these skyscrapers he can jump onto **any other** skyscraper, no matter how tall or where that skyscraper is.

Find the **maximum number of different skyscrapers** Kickass can visit in a chain of jumps starting from the skyscraper numbered **K**. If a skyscraper is visited more than once, we still count it only once. Moreover, skyscraper **K** is counted even if we never return to it.

INPUT

The first line of input contains the two integers **N** and **K** ($3 \leq \mathbf{N} \leq 300\,000$, $1 \leq \mathbf{K} \leq \mathbf{N}$), the total number of skyscrapers and the starting skyscraper, respectively.

The second line of input contains **N** integers less than 10^6, the heights of skyscrapers in order from left to right.

The third line of input contains a sequence of **N** characters '.' or 'T'. If the **i**th character is 'T', then there is a trampoline positioned on the top of skyscraper **i**.

OUTPUT

The first and only line of output must contain the required maximum number of visited skyscrapers.

SAMPLE TESTS

Input	**input**
6 4 12 16 16 16 14 14 .T....	10 1 10 7 3 1 1 9 8 2 4 10 ..T..T....
output	**output**
5	7

Second sample description: the sequence of visited skyscrapers could be the following:

$1 \rightarrow 2 \rightarrow 3 \rightarrow 6 \rightarrow 10 \rightarrow 9 \rightarrow 8.$