DMPG '15 G3 - Kinako Bread 2

Time limit: 1.8s **Memory limit:** 256M

Tohka's favorite food is kinako bread, but she likes croissants too. For dinner, Shido has bought Tohka some kinako bread and some croissants to eat, N pieces in total, arranged on vertices of an undirected graph without cycles — a tree. The vertices in the tree are numbered from 1 to N. Tohka is very touched that Shido would buy her so much bread, but she is on a diet. For each of kinako bread and croissants, Tohka doesn't want to eat more than R_k and R_c loaves, respectively. However, the bread is so tasty that she would like to eat at least L_k and L_c loaves of it, respectively $(0 \leq L_i \leq R_i \leq N)$. Tohka has decided that she will eat all the bread on the vertices in a path between two vertices of the tree, and no more. How many ways can she choose a path of the tree to eat?

Note: A path is a sequence of unique vertices such that each pair of adjacent vertices in the path are connected by an edge in the tree. Specifically, a sequence of one vertex is considered a path.

Input Specification

The first line of input will have N, L_k, R_k, L_c, R_c.
The second line of input will have a string representing the type of bread on each vertex from 1 to N. The i^{th} character will be `K` if the type of bread on vertex i is kinako bread or `C` if it's a croissant.
The next $N-1$ lines will contain the edges of the tree, in the format u v. That means there is an edge between vertex u and vertex v.

Constraints

Subtask 1 [30%]

$2 \leq N \leq 1\,000$

Subtask 2 [30%]

$2 \leq N \leq 200\,000$
$L_c = R_c = 0$
All of the bread will be kinako bread.

Subtask 3 [40%]

$2 \leq N \leq 200\,000$

Output Specification

The output should consist of one integer on a single line, the number of ways Tohka can pick a path of the tree to eat.

Sample Input

```
10 1 2 0 2
KCCKCKKCKK
1 2
1 3
2 4
1 5
3 6
3 7
6 8
5 9
5 10
```

Sample Output

```
38
```