Problem
Light Up
Time limit: 2 seconds

Little Cyan Fish has two light strips, each containing n lights labeled from 1 to n. Each light is either on or off. The initial states of the two strips are described by binary strings a and b of length n, where `1` denotes an on light and `0` denotes an off light.

There are $n + 1$ control interfaces, labeled from 0 to n. Interface 0 is before the first light, and interface i is immediately after light i for each $1 \leq i \leq n$. Interface i has a cost parameter c_i.

In one operation, Little Cyan Fish chooses two interfaces p and q ($0 \leq p < q \leq n$) and performs one of the following actions:

- Flip all lights labeled $p + 1, p + 2, \ldots, q$ on the first strip;
- Flip all lights labeled $p + 1, p + 2, \ldots, q$ on the second strip;
- Flip all lights labeled $p + 1, p + 2, \ldots, q$ on both strips.

Flipping a light changes its state from on to off or from off to on. Each of the three actions costs $\max(c_p, c_q)$. Interfaces may be used repeatedly, and there is no limit on the number of operations.

Find the minimum total cost needed to turn off all lights on both strips.

Input

There are multiple test cases. The first line of the input contains a single integer T ($1 \leq T$), indicating the number of test cases.

For each test case, the first line contains a single integer n ($1 \leq n \leq 3 \times 10^5$), indicating the number of lights on each strip.

The second and third lines contain binary strings a and b of length n, respectively, consisting only of characters `0` and `1`.

The fourth line contains $n+1$ integers $c_0, c_1, \ldots, c_n$ ($1 \leq c_i \leq 10^9$), indicating the cost parameters of the interfaces.

It is guaranteed that the sum of n over all test cases does not exceed 3×10^5.

Output

For each test case, output a single line containing a single integer, indicating the minimum total cost needed to turn off all lights on both strips.

Sample Input 1	Sample Output 1
3 1 0 0 1 1 1 1 1 7 9 3 101 000 1 100 100 1	0 9 101

In the first sample test case, all lights are already off, so no operation is needed.

In the second sample test case, Little Cyan Fish chooses interfaces 0 and 1 and flips both lights. This operation costs $\max(7, 9) = 9$.

In the third sample test case, he first flips all lights on the first strip using interfaces 0 and 3, at cost 1. He then flips its middle light using interfaces 1 and 2, at cost 100. The total cost is 101.