

## Problem C. Flippy Sequence

Input file: standard input  
 Output file: standard output  
 Time limit: 1 second  
 Memory limit: 256 megabytes

DreamGrid has just found two binary sequences  $s_1, s_2, \dots, s_n$  and  $t_1, t_2, \dots, t_n$  ( $s_i, t_i \in \{0, 1\}$  for all  $1 \leq i \leq n$ ) from his virtual machine! He would like to perform the operation described below exactly twice, so that  $s_i = t_i$  holds for all  $1 \leq i \leq n$  after the two operations.

The operation is: Select two integers  $l$  and  $r$  ( $1 \leq l \leq r \leq n$ ), change  $s_i$  to  $(1 - s_i)$  for all  $l \leq i \leq r$ .

DreamGrid would like to know the number of ways to do so.

We use the following rules to determine whether two ways are different:

- Let  $A = (a_1, a_2, a_3, a_4)$ , where  $1 \leq a_1 \leq a_2 \leq n, 1 \leq a_3 \leq a_4 \leq n$ , be a valid operation pair denoting that DreamGrid selects integers  $a_1$  and  $a_2$  for the first operation and integers  $a_3$  and  $a_4$  for the second operation;
- Let  $B = (b_1, b_2, b_3, b_4)$ , where  $1 \leq b_1 \leq b_2 \leq n, 1 \leq b_3 \leq b_4 \leq n$ , be another valid operation pair denoting that DreamGrid selects integers  $b_1$  and  $b_2$  for the first operation and integers  $b_3$  and  $b_4$  for the second operation.
- $A$  and  $B$  are considered different, if there exists an integer  $k$  ( $1 \leq k \leq 4$ ) such that  $a_k \neq b_k$ .

### Input

There are multiple test cases. The first line of the input contains an integer  $T$ , indicating the number of test cases. For each test case:

The first line contains an integer  $n$  ( $1 \leq n \leq 10^6$ ), indicating the length of two binary sequences.

The second line contains a string  $s_1 s_2 \dots s_n$  ( $s_i \in \{'0', '1'\}$ ) of length  $n$ , indicating the first binary sequence.

The third line contains a string  $t_1 t_2 \dots t_n$  ( $t_i \in \{'0', '1'\}$ ) of length  $n$ , indicating the second binary sequence.

It's guaranteed that the sum of  $n$  in all test cases will not exceed  $10^7$ .

### Output

For each test case, output an integer denoting the answer.

### Example

standard input	standard output
3	0
1	2
1	6
0	
2	
00	
11	
5	
01010	
00111	

### Note

For the second sample test case, there are two valid operation pairs:  $(1, 1, 2, 2)$  and  $(2, 2, 1, 1)$ .



For the third sample test case, there are six valid operation pairs:  $(2, 3, 5, 5)$ ,  $(5, 5, 2, 3)$ ,  $(2, 5, 4, 4)$ ,  $(4, 4, 2, 5)$ ,  $(2, 4, 4, 5)$  and  $(4, 5, 2, 4)$ .