

## Hamming Distance

time limit per test: 2 seconds  
memory limit per test: 256 megabytes

Hamming distance between two binary strings of equal length is the number of mismatches between every corresponding positions of the two strings.

Suppose  $A = "01001"$  and  $B = "11000"$  then the Hamming Distance between A and B is 2 because they only mismatch in position 1 and 5 (1- based indexing).

Now, you are given two string A and B of length n and m respectively. A and B contains only lowercase english letters.

You have to calculate the sum of hamming distance between every substring of length m of A and B.

Input:

The first line will contain two integers' n and m.

Then the second line will contain two strings, A of length n and B of length m.

$1 \leq n, m \leq 10^6$

Output:

A single integer, the sum of hamming distance between every substring of length m of A and B .

Sample Input:

5 3  
abd as ace

Sample output:

8

3 5  
abd acert

0

Explanation:

In the first sample case,  $HD("abd, ace") = 2$ ,  $HD("bda", "ace") = 3$ ,  $HD("das", "ace") = 3$  .

So the answer is  $2 + 3 + 3 = 8$ .

Note: HD = Hamming Distance.