Seating Chart

Bilbo's birthday is coming up, and Frodo and Sam are in charge of all the party planning! They have invited all the hobbits of Middle Earth to the party, and everyone will be sitting in a single row at an extremely long dining table.

However, due to poor communication, Frodo and Sam have each independently put together a seating chart for all the hobbits at the dining table. Help Frodo and Sam find out how similar their seating charts are by counting the total number of distinct pairs of hobbits who appear in different orders in the two charts.

Input

The input file will contain multiple test cases. Each test case begins with a single line containing an integer N ($1 \leq N \leq 100{,}000$) indicating the number of hobbits. The next two lines represent Frodo's and Sam's seating charts, respectively. Each seating chart is specified as a single line of N unique alphabetical strings; the set of strings in each line are guaranteed to be identical. The end-of-input is denoted by a line containing the number 0.

Output

For each input test case, output a single integer denoting, out of the N choose 2 distinct pairs of hobbits, how many pairs appear in different orders in Frodo's and Sam's seating arrangements.

Sample Input	Sample Output
3 Frodo Sam Bilbo Sam Frodo Bilbo 5 A B C D E B A D E C 0	1 3