

Sum to Zero

You are given three arrays A, B, and C. Each array have N elements. You have to find how many triplets (i,j,k) satisfies $A[i] + B[j] + C[k] = 0$. Note that triplet (1,1,2) is considered different as triplet (2,1,1).

$1 \leq N \leq 1000$, $-1\ 000\ 000\ 000 \leq A[i], B[i], C[i] \leq 1\ 000\ 000\ 000$

Input

The first line will consist of an integer N.

The second line will consist of N integers separated by space, representing the array A. The third line will consist of N integers separated by space, representing the array B. The fourth line will consist of N integers separated by space, representing the array C.

Output

A single integer as requested in the problem statement

Example

Input:

2

-6 -1

10 2

-4 -9

Output:

2