

4 Values whose Sum is 0

<https://vjudge.net/problem/POJ-2785>

The SUM problem can be formulated as follows: given four lists A, B, C, D of integer values, compute how many quadruplet $(a, b, c, d) \in A \times B \times C \times D$ are such that $a + b + c + d = 0$. In the following, we assume that all lists have the same size n .

Input

The first line of the input file contains the size of the lists n (this value can be as large as 4000). We then have n lines containing four integer values (with absolute value as large as 2^{28}) that belong respectively to A, B, C and D.

Output

For each input file, your program has to write the number quadruplets whose sum is zero.

Sample

Input	Output
6 -45 22 42 -16 -41 -27 56 30 -36 53 -37 77 -36 30 -75 -46 26 -38 -10 62 -32 -54 -6 45	5

Hint

Sample Explanation: Indeed, the sum of the five following quadruplets is zero: $(-45, -27, 42, 30)$, $(26, 30, -10, -46)$, $(-32, 22, 56, -46)$, $(-32, 30, -75, 77)$, $(-32, -54, 56, 30)$.