# Problem E: 4 Values whose Sum is 0

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

## Input/ Output specification

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 $\mathcal{A}$, $\mathcal{B}$, $\mathcal{C}$ and $\mathcal{D}$.

**Sample Input**

```
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
```

**Sample Output**

For each input file, your program has to write the number quadruplets whose sum is zero. A valid output corresponding to the sample input file above is:

```
5
```

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