

## 3506 4 Values whose Sum is 0

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 input begins with a single positive integer on a line by itself indicating the number of the cases following, each of them as described below. This line is followed by a blank line, and there is also a blank line between two consecutive inputs.

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 test case, your program has to write the number quadruplets whose sum is zero.

The outputs of two consecutive cases will be separated by a blank line.

### Sample Input

```
1

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

```
5
```

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