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).