

## 1058 – Parallelogram Counting

There are  $n$  distinct points in the plane, given by their integer coordinates. Find the number of parallelograms whose vertices lie on these points. In other words, find the number of 4-element subsets of these points that can be written as  $\{A, B, C, D\}$  such that  $AB \parallel CD$ , and  $BC \parallel AD$ . No four points are in a straight line.

### Input

Input starts with an integer  $T$  ( $\leq 15$ ), denoting the number of test cases.

The first line of each test case contains an integer  $n$  ( $1 \leq n \leq 1000$ ). Each of the next  $n$  lines, contains 2 space-separated integers  $x$  and  $y$  (the coordinates of a point) with magnitude (absolute value) of no more than 1000000000.

### Output

For each case, print the case number and the number of parallelograms that can be formed.

Sample Input	Output for Sample Input
2 6 0 0 2 0 4 0 1 1 3 1 5 1 7 -2 -1 8 9 5 7 1 1 4 8 2 0 9 8	Case 1: 5 Case 2: 6