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 || CD**, and **BC || AD**. No four points are in a straight line.

Input

Input starts with an integer **T (≤ 15)**, denoting the number of test cases.

The first line of each test case contains an integer **n (1 ≤ n ≤ 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