

Trapezoids are very familiar geometric shapes. It has the following properties:

- a) It is a polygon with four sides.
- b) Its two opposite sides are parallel with each other and other two sides are not parallel to each other.
- c) It has a strictly positive area.

Note that the original definition of trapezoid may be a bit different but to solve this problem you must use the above definition.

Given a collection of at most 200 points your job is to find out how many different trapezoids do they form. Exactly four points can form a trapezoid when these four points are the vertices of a trapezoid.

Input

The input file contains several sets of inputs. The description of each set is given below:

Each set starts with an integer N ($0 \leq N \leq 200$) which denotes how many points are there in this set.

Each of the next N lines contains two integers x_i, y_i ($-400000 < x_i, y_i < 400000$)

Input is terminated by a line containing a single zero.

Output

For each set of input produce one line of output. This line contains the serial of output followed by an integer with denotes the number of trapezoids the given points form.

Sample Input

```
4
0 0
1 0
0 1
1 1
4
0 0
1 1
2 0
0 1
0
```

Sample Output

```
Case 1: 0
Case 2: 1
```