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In a 2D plane N persons are standing and eac

Input

The first line of input will contain **T** (≤ 550) denoting the number of cases.

Each case starts with a line containing a positive integer **N**. Each of the next **N** lines contains two integers $x_i y_i$ ($0 \leq x_i, y_i \leq 30000$) denoting a co-ordinate of a person. Assume that all the co-ordinates are distinct.

- 1) For 10 cases, **N = 1000**.
- 2) For 15 cases, $100 \leq N < 1000$.
- 3) For others, **N < 100**.

Output

For each case, print the case number and the total number of different consistent verdicts for the given scenario.

| Sample Input | Output for Sample Input |
|--------------|-------------------------|
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