3226 - Symmetry

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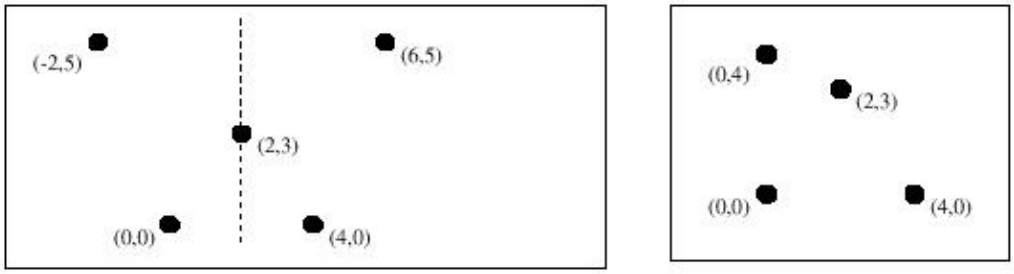
The figure shown on the left is *left-right symmetric* as it is possible to fold the sheet of paper along a *vertical line*, drawn as a dashed line, and to cut the figure into two identical halves. The figure on the right is not left-right symmetric as it is impossible to find such a vertical line.



Write a program that determines whether a figure, drawn with dots, is left-right symmetric or not. The dots are all distinct.

Input

The input consists of T test cases. The number of test cases T is given in the first line of the input file. The first line of each test case contains an integer N, where N ($1 \leq N \leq 1,000$) is the number of dots in a figure.

Each of the following N lines contains the x-coordinate and y-coordinate of a dot. Both x-coordinates and y-coordinates are integers between -10,000 and 10,000, both inclusive.

Output

Print exactly one line for each test case. The line should contain `YES' if the figure is left-right symmetric. and `NO', otherwise.

The following shows sample input and output for three test cases.

Sample Input

```
3
5
-2 5
0 0
6 5
4 0
2 3
4
2 3
0 4
4 0
0 0
4
5 14
6 10
5 10
```

```
6 14
```

Sample Output

```
YES
NO
YES
```

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