

## H: Mean Girls

The girls are back because Hollywood producers are running out of ideas and it is about time they reboot this franchise. Cady, Regina, Gretchen and Karen started cheer leading this year and are very good at it. They have been practicing two formations that they have to get perfectly at nationals.

In the first formation they are positioned in such a way that they form a square. In the second formation they are positioned in such a way that they form a rectangle.

Given all the girls positions, you must output whether they are constructing a square, rectangle, or neither.

### Input

The first line contains an integer  $0 \leq n \leq 1000$ , representing the number of position sets to be tested. The following  $n$  lines contains 8 integers separated by spaces,  $-10000 \leq x1, y1, x2, y2, x3, y3, x4, y4 \leq 10000$ . Each  $(x_i, y_i)$  pair represents the position of the cheerleaders in the formation.

### Output

If their positions can form a square, then you must output "SQUARE". Otherwise, if the positions can form a rectangle, then you must output "RECTANGLE". In all other cases, you must output "NEITHER".

### Sample Input

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```
3
-2 0 0 2 2 0 0 -2
-3 0 0 2 3 0 0 -2
1 1 2 3 1 2 3 10
```

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### Sample Output

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```
SQUARE
NEITHER
NEITHER
```

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