Rectangleland is a very old city that has kept several histor-
ical treasures. The city was planned many decades ago, with
all the roads going north-south or east-west. At the moment,
there is a project to revitalize the city, which plans to build a
new rectangular park. The public administration will choose
the location of the park and for the moment they are inter-
ested in the possible locations for the park, considering that
it needs to be aligned to the roads. That is, when is visual-
ized in a map, the borders of the park should be horizontal
or vertical. With the objective of preserving the historical
treasures when building the park, some restrictions must be
obeyed.
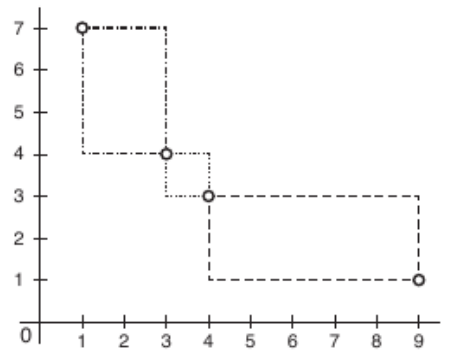
   In the city there are some lampposts from the XIX century. Given their historical value, no lamppost
must be removed during the construction of the new park. Due to natural decay and bad maintenance,
few historical lampposts remain, and no road has more than one. No historical lamppost should be
inside the park. On the other hand, the landscape project plans to have two historic lampposts in
two corners of the park. The figure below shows an example of four historic lampposts and the three
possible locations for the park.

   The city hall hired a georeference company to map the lampposts positions. With this data at hand,
the next step is to determine how many possible locations exist for the park, so the size of the teams
necessary to evaluate each location can be estimated.

Input

The input contains several test cases. The first line a test case contains an integer number N, $1 \leq
N \leq 3000$, which represents the number of historical lampposts. The next N lines will describe, each,
the position of a lamppost. A position of a lamppost is given by a pair of integer numbers, X and Y,
$-10^8 \leq X, Y \leq 10^8$, corresponding to the plane coordinates.

Output

For each test case in the input your program must produce one single line containing the number of
different possible locations for the park.

Sample Input

```
4
1 7
4 3
3 4
9 1
5
1 7
5 5
2 2
8 8
6 -1
8
1 1
2 2
-2 200
100 3
-6 -6
-51 19
-3 -1
8 -2
```

Sample Output

```
3
8
19
```