	Belen In Sqlands

"We cut over the fields at the back with him between us – straight as the crow flies – through hedge and ditch" - Charles Dickens in *"Oliver Twist"*

Did you ever admire how nature plays role in developing our day to day languages and even in literature? *"As the crow flies"* is an idiom for the most direct path between two points. There is another idiom *"Beeline"* with similar meaning from the belief that bees take such routes when they return to their hives.

Now let me introduce *"Sqlands"* - a collection of artificial islands inspired by *"Beeline"* concept. It is popular among the solo travelers for its unique transportation system. The whole area covered by Sqlands is a square and all the individual islands it contains also have identical square shapes.

Form the *"Birds Eye View"* (yet another idiom inspired by nature), the whole island looks like a 2D grid. So it is convenient to name the islands by the coordinates in the 2D grid. There is a road between each pair of islands and these roads are built from the center of one island to the center of another island in exact straight line to reduce travel time.

Now when traveling from one island to another you might need to cross through a series of islands. Each time you enter the region of one island from another island you have to pay a tax of $1 (even if you previously visited it). Note that you don't need to pay tax if you just touch the border but didn't enter the region of an island.

For example, when traveling from (2,2) to (3,6) you have to enter (2,3) then (2,4) then (3,4) then (3,5) and finally (3,6). So you need to pay a total tax of $5.

Belen is planning a tour in Sqlands soon. He has made a list of islands which he will visit in order. Initially, he will fly to the first island of the list and there will be no tax for this initial entry. Your task is to help Belen to calculate the amount of tax he will be paying while traveling the islands in the given order.

Belen's budget is limited to 2 billion dollars (2x10^6). So if the total tax exceeds it, he might need to alter the tour plan. In that case, you don't need to show the total amount as it might scare him, just tell him *"SORRY"*.

Input:

Input starts with an integer T (T <= 50) indicating the number of test cases. Each test case starts with an integer N (N <= 50) indicating the number of islands Belen has planned to visit. Each of the next N lines will contain two integers X and Y (0 <= X,Y <= 10^9) indicating the coordinates of the island.

Output:

For each test case print either the total amount of tax or, the word *"SORRY"* based on the description in one line.

Sample Input	Sample Output
3 3 4 4 2 2 3 6 3 0 0 10 2 10 2 3 0 0 1000000000 999999999 6 18	7 10 SORRY