

A.Yan_ice loves lines

Description
<p>Yan_ice once dreamed of a infinitely large plane which contained N lines. He surprisingly found that any pairs among these lines did not coincide, and any triples did not intersect at one point. He carefully counted the intersections in his dream, but when he woke up, he suddenly forgot everything.</p> <p>Please list the possible number of intersections of the N lines for him.</p>
Input format
<p>The first line of the input contains a single integer T — the number of test cases.</p> <p>Each test case consists of a single integer N.</p>
Output format
<p>For each test case output a single line containing all possible number of intersections in ascending order.</p>
Samples
Sample Input
<pre>4 3 8 7 1</pre>
Sample Output
<pre>0 2 3 0 7 12 13 15 16 17 18 19 20 21 22 23 24 25 26 27 28 0 6 10 11 12 14 15 16 17 18 19 20 21 0</pre>
Limitations & Hints
<p>For all test cases:</p> <ul style="list-style-type: none">• $1 \leq T \leq 50$• $1 \leq N \leq 300$

B.Mr.sorry and Satan

Description
<p>Mr. Sorry and Satan are two top agents in CRA (Central Rabi Agency). One day CRA detected N bugs in a 2D plane and sent the two agents to destroy them.</p> <p>Close as the two agents are, they would accomplish missions separately for greater efficiency. Yet they must reach the coordinate of certain bug to destroy it, and they must destroy the bugs according to the given order (You know some bugs appear only when you wipe out the previous bugs). The energy consumed for each agent equals to the sum of Manhattan distance between every two adjacent coordinates he reaches. Please calculate the minimum sum of energy consumed by the two agents.</p>
Input format
<p>The first line contains a integer N, denoting the number of bugs.</p> <p>The next N lines describe the location of each bug, where the i^{th} line contains two integers x_i and y_i, representing a bug with coordinate (x_i, y_i)</p>
Output format
<p>Output a single integer indicating the minimum sum of energy consumed by the couple.</p>

Samples

Sample Input 1

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3
0 1
1 0
1 1
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Sample Output 1

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1
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Explanation

Mr. Sorry accomplishes his mission at (1,0) -> (3,2), consuming 4 energy.

Satan accomplishes his mission at (9,8) -> (5,9), consuming 5 energy.

Answer = 4 + 5 = 9

Limitations & Hints

For 40% of the test cases, $N \leq 5000$

For 100% of the test cases, $1 \leq N \leq 5 \times 10^4, 0 \leq x_i, y_i \leq 10^9$

You might need CDQ, which is a divide-and-conquer method, to solve this problem.

CDQ: <https://oi-wiki.org/misc/cdq-divide/>

CDQ might need segment tree, but there is an alternative which is much simpler -- Binary Indexed Tree (BIT).

BIT: <https://oi-wiki.org/ds/fenwick/>