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E. Points Selection

time limit per test: 2 seconds
memory limit per test: 512 megabytes

Alice and Bob are playing with points on the XY plane. Initially, there are n points on the plane: the i-th point is located at (x_i, y_i) and has a cost of c_i.

The game consists of two stages:

1. First, Alice selects some points (possibly none, but not all) and *removes* them from the field.
2. Then, Bob draws a rectangle with sides parallel to the coordinate axes, such that all remaining points lie inside or on the boundary of this rectangle. The rectangle can degenerate into a line segment or even a point.

After that, the game ends and the total score is calculated. The total score of the game is the sum of the costs of the **removed** points by Alice and the **perimeter** of the rectangle drawn by Bob. Alice wants to maximize the score, while Bob wants to minimize it.

Determine the total score of the game if both Alice and Bob play optimally.

The *perimeter* of the rectangle is equal to the sum of the lengths of all its *four* sides. Therefore, even if the rectangle degenerates into a line segment of length k, its perimeter will be $2k$. The perimeter of a rectangle that

Educational Codeforces Round 184 (Rated for Div. 2)
比赛进行中
01:30:04
Contestant

→ 提交?
语言: GNU G++20 13.2 (64 bit, w
选择文件: 选择文件 未选择文件
提交

degenerates into a point is 0.

DeepL 翻译

爱丽丝和鲍勃正在玩 XY 平面上的点。最初，平面上有 n 个点：第 i 个点位于 (x_i, y_i) ，代价是 c_i 。

游戏由两个阶段组成：

1. 首先，爱丽丝选择一些点（可能一个都不选，但也不是全部），然后将它们从领域中移除。
2. 然后，鲍勃绘制一个边与坐标轴平行的矩形，使得所有剩余的点都位于这个矩形的内部或边界上。矩形可以退化为线段甚至点。

之后，游戏结束并计算总分。游戏的总得分是爱丽丝移除**个点的成本与鲍勃所画矩形的**周长之和。爱丽丝希望得分最大化，而鲍勃希望得分最小化。

如果爱丽丝和鲍勃都以最优方式进行游戏，请确定游戏的总得分。

矩形的周长等于其四条边的长度之和。因此，即使矩形退化为长度为 k 的线段，其周长也将是 $2k$ 。退化为一个点的矩形的周长为 0 。

Input

The first line contains a single integer t ($1 \le t \le 10^4$) — the number of test cases.

The first line of each test case contains a single integer n ($1 \le n \le 3 \cdot 10^5$) — the number of points on the plane.

The second line of each test case contains n integers $x_1, x_2, \ldots, x_n$ ($0 \le x_i \le 10^{15}$) — the x-coordinates of the points.

The third line contains n integers $y_1, y_2, \ldots, y_n$ ($0 \le y_i \le 10^{15}$) — the y-coordinates of the points.

The fourth line contains n integers $c_1, c_2, \ldots, c_n$ ($0 \le c_i \le 10^9$) — the costs of the points.

Additional constraints on the input:

- in one test case, all points are pairwise distinct;
- the total number of points across all test cases does not exceed $3 \cdot 10^5$.

DeepL 翻译

输入

第一行包含一个整数 t（$1 \le t \le 10^4$）- 测试用例数。

每个测试用例的第一行包含一个整数 n（$1 \le n \le 3 \cdot 10^5$）- 平面上的点数。

每个测试用例的第二行包含 n 个整数 $x_1, x_2, \ldots, x_n$（$0 \le x_i \le 10^{15}$）- 点的 x 坐标。

第三行包含 n 个整数 $y_1, y_2, \ldots, y_n$（$0 \le y_i \le 10^{15}$）- 各点的 y 坐标。

第四行包含 n 个整数 $c_1, c_2, \ldots, c_n$（$0 \le c_i \le 10^9$）- 各点的成本。

输入的其他约束条件：

- 在一个测试用例中，所有点都是成对不同的；
- 所有测试用例中的点总数不超过 $3 \cdot 10^5$ 。

Output

For each test case, output a single integer — the final score of the game if both Alice and Bob play optimally.

DeepL 翻译

输出

对于每个测试用例，输出一个整数 - 如果爱丽丝和鲍勃都以最佳方式进行游戏，游戏的最终得分。

Example

input Copy

```
4
1
42
42
1000
4
5 10 5 0
0 5 10 5
1 1 1 1
```

```
4
6 7 8 9
3 3 3 3
9 0 9 0
2
1000000000 10
10 1000000000
12345 54321
```

output Copy

```
0
40
22
3999999960
```

Note

In the first test case, there is only one point, and Alice cannot remove it. Then Bob constructs the rectangle $(1, 1) - (1, 1)$ with a perimeter of 0.

In the second test case, it is optimal for Alice not to remove any points. Then Bob constructs the rectangle $(0, 0) - (10, 10)$ with a perimeter of 40.

In the third test case, it is optimal for Alice to remove the first and third points. Then Bob constructs the rectangle $(7, 3) - (9, 3)$ with a perimeter of 4. The total score will be $9 + 9 + 4 = 22$.

DeepL 翻译

注

在第一个测试案例中，只有一个点，爱丽丝无法删除它。然后，鲍勃构建了周长为 0 的矩形 $(1, 1) - (1, 1)$ 。

在第二个测试案例中，爱丽丝最好不要删除任何点。然后鲍勃构建周长为 40 的矩形 $(0, 0) - (10, 10)$ 。

在第三个测试案例中，爱丽丝最好删除第一个和第三个点。然后，鲍勃构建了周长为 4 的矩形 $(7, 3) - (9, 3)$ 。总得分为 $9 + 9 + 4 = 22$ 。

GNU G++20 13.2 (64 bit, winlibs)

```
1
```

▶ 自定义测试数据(自动保存)

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