Jam

Description

Ke1vin and Darkpi are making delicious(?) bread with n bottles of jam. The i-th jam will increase the deliciousness by a_i if you spread it on the front side, and b_i if on the back side. They take turns choosing jam to spread, and Ke1vin go first. In each turn, Ke1vin or Darkpi will choose one unused bottle of jam, and spread ALL jam in that bottle on either front side or back side of the bread.

Since the bread will be eaten by Darkpi, Ke1vin will try to minimize the deliciousness, and Darkpi will try to maximize the deliciousness. As you know, they are very smart and will follow the optimal strategy. What is the deliciousness of that bread when all bottles are used?

Input

The first line contains a integer T indicating the total number of test cases. Each test case contains $n + 1$ lines. The first line contains an integer n, and each of the following n lines contains two integers a_i, b_i.

- $1 \leq T \leq 200$
- $1 \leq n \leq 10^5$
- $1 \leq a_i, b_i \leq 10^6$
- There are at most 20 test cases with $n > 1000$.

Output

For each test case, output the deliciousness of that bread when all bottles are used.

Sample Input

```
2
2
1 2
3 4
3
5 5
1 1
4 4
```

Sample Output

```
5
10
```