Xenny and Alternating Tasks

Problem Code: **XENTASK**

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Xenny and Yana were very keen to celebrate Valentine's Day at their home. To make preparations for the celebration, they listed down **N** tasks that they had to complete.

To complete the i^{th} task, Xenny takes X_i seconds and Yana takes Y_i seconds. In order to minimize the disparity in tasks performed, they decide to do the tasks **alternatingly**. If Xenny did the 1^{st} task, then Yana would just wait and watch him until he completes the task. After that, Yana would start the 2^{nd} task, and while she does her task, Xenny would just watch her. He would start the 3^{rd} task only after her completion, and they would keep doing tasks alternatingly uptil the N^{th} task. They could also do tasks in the other order - that is, Yana could do the 1^{st} task, after that Xenny could do the 2^{nd} task, and so on. Their eventual goal was to minimize the total time taken by them to complete all **N** tasks.

Please help them find the minimum total time they would take to complete all **N** tasks.

Input

The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows.

The first line of each testcase contains a positive integer **N** - the number of tasks to be completed.

The second line contains **N** space-separated positive integers representing the time taken in seconds by Xenny to complete the i^{th} task.

The third line contains **N** space-separated positive integers representing the time taken in seconds by Yana to complete the i^{th} task.

Output

Constraints

Subtask 1: 40 points

- **$1 \le T \le 10$**
- **$1 \le N \le 3$**
- **$1 \le X_i, Y_i \le 10^5$**

Subtask 2: 60 points

- **$1 \le T \le 10$**
- **$1 \le N \le 2*10^4$**
- **$1 \le X_i, Y_i \le 10^5$**

Sample Testcase

Input:

```
1
3
2 1 2
3 2 1
```

Output:

```
5
```

Explanation

Let's say Xenny does the 1st task. Then Yana would do the 2nd task and Xenny would do the 3rd task. Hence, the total time taken would be: 2 + 2 + 2 = 6 seconds.

Another possibility is that Yana does the 1st task, Xenny does the 2nd task and then Yana does the 3rd task. The total time taken in this case would be 5 seconds.

Hence, the **minimum** total time taken would be **5 seconds**.

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