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Problem B: Disguises

Base Program Constraints: 1s, 256 MB

Clear Reward: +1 Point

To avoid identification, Polly and the rest of the crew need **disguises**! Luckily, Polly's friends with Isabela Integral, one of the members of the school's theater club, who's more than willing to help them out.

To make disguises for everybody, Isabela needs n unique **materials**, labelled from 1 to n. She also needs a specific quantity a_i of the i-th material.

Isabela already has some spare materials lying around in her workshop, but she is unsure if she has enough to complete every disguise. Luckily, Isabela can visit the local **Material** Exchange to restock her material supply. At the exchange, she can carry out the following trades:

- Exchange 1 unit of any material for 1 unit of any other material, costing $1
- Buy 1 unit of any material, costing $2

The Computer Club is already in enough debt, so Isabela doesn't want to spend more money than she needs to. What is the **minimum** amount of money Isabela needs to spend to obtain the necessary materials to complete the order?

Input

Each test contains multiple test cases. The first line of input contains the number of test cases t $(1 \leq t \leq 100)$.

The first line of each test case contains an integer n $(1 \leq n \leq 10)$, the number of unique materials Isabela needs.

The next line contains n space-separated integers $a_1, a_2, ..., a_n$ $(1 \leq a_i \leq 1000)$, where a_i represents the required quantity of the i-th material.

The third and final line contains n space-separated integers $b_1, b_2, ..., b_n$ $(0 \leq b_i \leq 1000)$, where b_i represents the number of units of the i-th material that Isabela has.

Output

For each test case, output one integer - the **minimum** amount of money Isabela needs to spend in dollars.

Sample Test Cases

Sample 1 - Input

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

Sample 1 - Output

```
4
1
11
```

Notes

In the first test case, Isabela needs to buy 1 unit of material 1 and 1 unit of material 2, costing $4.

In the second test case, Isabela can exchange 1 unit of material 1 for 1 unit of material 2, costing $1.