B. Red and Blue

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Monocarp had a sequence a consisting of $n + m$ integers $a_1, a_2, \ldots, a_{n+m}$. He painted the elements into two colors, red and blue; n elements were painted red, all other m elements were painted blue.

After painting the elements, he has written two sequences $r_1, r_2, \ldots, r_n$ and $b_1, b_2, \ldots, b_m$. The sequence r consisted of all red elements of a **in the order they appeared in** a; similarly, the sequence b consisted of all blue elements of a **in the order they appeared in** a **as well**.

Unfortunately, the original sequence was lost, and Monocarp only has the sequences r and b. He wants to restore the original sequence. In case there are multiple ways to restore it, he wants to choose a way to restore that maximizes the value of

$$f(a) = \max(0, a_1, (a_1 + a_2), (a_1 + a_2 + a_3), \ldots, (a_1 + a_2 + a_3 + \cdots + a_{n+m}))$$

Help Monocarp to calculate the maximum possible value of $f(a)$.

Input

The first line contains one integer t ($1 \le t \le 1000$) — the number of test cases. Then the test cases follow. Each test case consists of four lines.

The first line of each test case contains one integer n ($1 \le n \le 100$).

The second line contains n integers $r_1, r_2, \ldots, r_n$ ($-100 \le r_i \le 100$).

The third line contains one integer m ($1 \le m \le 100$).

The fourth line contains m integers $b_1, b_2, \ldots, b_m$ ($-100 \le b_i \le 100$).

Output

For each test case, print one integer — the maximum possible value of $f(a)$.

Example

input

```
4
4
6 -5 7 -3
3
2 3 -4
2
1 1
4
10 -3 2 2
5
-1 -2 -3 -4 -5
5
-1 -2 -3 -4 -5
1
0
1
0
```

output

```
13
13
0
0
```

Note

In the explanations for the sample test cases, red elements are marked as **bold**.

In the first test case, one of the possible sequences a is $[\mathbf{6}, 2, \mathbf{-5}, 3, \mathbf{7}, \mathbf{-3}, -4]$.

In the second test case, one of the possible sequences a is $[10, \mathbf{1}, -3, \mathbf{1}, 2, 2]$.

In the third test case, one of the possible sequences a is $[\mathbf{-1}, -1, -2, -3, \mathbf{-2}, -4, -5, \mathbf{-3}, \mathbf{-4}, \mathbf{-5}]$.

In the fourth test case, one of the possible sequences a is $[0, \mathbf{0}]$.
