

## 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  $a_1, a_2, \dots, a_{n+m}$ . 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  $r_1, r_2, \dots, r_n$  and  $b_1, b_2, \dots, b_m$ . 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

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

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

### Input

The first line contains one integer  $t$  ( $1 \leq t \leq 1000$ ) — 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  $n$  ( $1 \leq n \leq 100$ ).

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

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

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

### Output

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

### Example

input	Copy
<pre>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</pre>	
output	Copy
<pre>13 13 0 0</pre>	

### Note

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

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[dp](#) [greedy](#) [\\*1000](#)

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#### → Contest materials

- Announcement
- Tutorial

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

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

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

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

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