

# Interesting Selection

There is a giant circular container which is divided into N segments numbered from 0 to N-1.

Each segment has two bottles, one is a bottle of cold-drink and other is a bottle of poison. Drinking from bottle of cold-drink increases your energy by  $A[i]$  while drinking from bottle of poison decreases your energy by  $B[i]$ .

The corresponding energies for the same are given in input.

Now as it is circular, so bottles in segment N-1 and segment 0 are adjacent. If you do not drink from bottle of cold-drink, then you have to drink from bottle of poison in that segment. Furthermore you cannot drink from bottle of cold-drink in adjacent segments. You have to drink in such a way so that your energy maximizes. Find this maximum value.

**Note : Your initial energy will be 0 and the final maximum energy can be negative.**

## Input Format

There will be T test cases and in each test case there will be an integer N which is the size of the container.

Next line contain N integers denoting the first array and the second line also contain N integers denoting the second array.

## Output Format

There will be T lines each containing the output for each test case.

## Constraints

$$1 \leq T \leq 10$$

$$1 \leq N \leq 10000$$

$$1 \leq A[i], B[i] \leq 10^9$$

## Sample Input

```
1
3
1 2 3
4 5 6
```

## Sample Output

```
-6
```

## Explanation

There are 3 segments and the pairs are (1,4), (2,5), (3,6)

The optimal solution is to drink third potion and first two bottle of poison.

The answer in this case is  $(-4 + -5 + 3) = -6$