# D - Ronald Dump and the League of Nations

## Background

The leader of a great superpower, Ronald Dump (RD), wants to take over the world, and the League of Nations (NL) wants to prevent it. But Dump has the strength of weapons, so the NL has to make a pact with him. They will play a game, the game of dividing the world: 50% for RD and 50% for the NL.

## The Problem

Each country of the world has a positive integer value associated with it, that indicates the benefit that can be obtained from it, between 1 and 1000. The countries are randomly placed in a line. For example, we can have countries with benefits: 20, 200, 100, 20. The number of countries in dispute is $n$, where $2 \leq n \leq 200$, and being $n$ an even number.

Dump and the NL will play in turns. In each turn, the player selects a country among those at the extremes of the line; the player wins that benefit and removes the country from the line.

Since Dump is very greedy, his strategy is simple: between the two extremes available in his turns, he selects the country with the biggest benefit. So, the NL seeks to apply a strategy that, knowing how Dump chooses, allows the NL to finally obtain its biggest total benefit.

Suppose that, if Dump finds at the extremes two countries with the same benefit, he will choose (even without knowing it) the one that will finally be better for his final benefit.

For example, in the previous case with 4 countries, if Ronald Dump starts the game, the solution (the benefit for the NL) would be 120, with the following order of selection:

| 20 | 200 | 100 | 20 |
|---|---|---|---|
| 4º | 3º | 2º | 1º |
| NL | RD | NL | RD |

If the League of Nations starts the game, the solution (the benefit for the NL) would be 220, with the following order of selection:

| 20 | 200 | 100 | 20 |
|---|---|---|---|
| 4º | 3º | 2º | 1º |
| RD | NL | RD | NL |

So, there is a solution if Dump starts and another solution if the NL starts. The final solution will be the one with the lowest benefit for the NL. For example, in the previous case the solution would be 120.

## The Input

The first line of the input contains an integer number, indicating the number of test cases to solve.

For each test case, there are two lines. The first line contains an even integer $n$, which indicates the number of countries in that case, where $4 \leq n \leq 200$. The second line contains $n$ integers that express the benefit of each of the $n$ countries, with values between 1 and 1000. The order of the numbers corresponds to the order in the line of the game.

## The Output

For each test case, you have to output a line with the benefit of the solution, that is, the total benefit for the NL considering the lowest of the two possibilities (RD starts, or NL starts).

## Sample Input

```
2
4
20 200 100 20
6
250 275 200 350 500 300
```

## Sample Output

```
120
950
```

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