# COCI '09 Contest 1 #4 Mali

**Time Limit:** 1.0s **Memory Limit:** 32M

Mirko and Slavko are playing a new game. Again. Slavko starts each round by giving Mirko two numbers $A$ and $B$, both smaller than $100$. Mirko then has to solve the following task for Slavko: how to pair all given $A$ numbers with all given $B$ numbers so that the **maximal sum of such pairs is as small as possible**.

In other words, if during previous rounds Slavko gave numbers $a_1$, $a_2$, $a_3$ $\ldots$ $a_n$ and $b_1$, $b_2$, $b_3$ $\ldots$ $b_n$, determine $n$ pairings $(a_i, b_j)$ such that each number in $A$ sequence is used in exactly one pairing, and each number in $B$ sequence is used in exactly one pairing and the maximum of all sums $a_i + b_j$ is minimal.

## Input Specification

The first line of input contains a single integer $N$ $(1 \leq N \leq 10^5)$, number of rounds. The next $N$ lines contain two integers $A$ and $B$ $(1 \leq A, B \leq 100)$, numbers given by Slavko in that round.

## Output Specification

The output consists of $N$ lines, one for each round. Each line should contain the smallest maximal sum for that round.

## Sample Input 1

```
3
2 8
3 1
1 4
```

## Sample Output 1

```
10
10
9
```

## Sample Input 2

```
3
1 1
2 2
3 3
```

## Sample Output 2

```
2
3
4
```