

# Nim-like game 2

It's time to help Julia to play with Robert again. This time the players pick up sticks from four stacks. A move consists of taking away a positive number of sticks from exactly two chosen stacks.

Players take turns to move. The one who cannot make a move loses. Write a program which determines if for a given set of starting sizes of stacks Julia who moves first can force a win. If so help her making the winning move.

If there are several possibilities of such a move, then choose the one which is lexicographically last, i.e. in which you use the stack with the smallest possible index, taking the largest number of sticks.

## Input

In the first line of input there is one integer  $C$  ( $1 \leq C \leq 1\,000$ ), representing the number of test cases. Each test case is described by four integers  $a[1], a[2], a[3], a[4]$  ( $0 \leq a[i] \leq 1\,000\,000$ ), where  $a[i]$  denotes the number of sticks in the  $i$ -th stack.

## Output

For each testcase write a sentence of the form: '\$name wins.' as in the example. And if Julia can win write out four numbers two of which are nonzero - the numbers of sticks to take from each stack. Print a blank line after each testcase.

## Example

**Input:**

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

**Output:**

```
Robert wins.
```

```
Julia wins.
```

```
0 0 1 2
```

## Scoring

For solving this problem you will score 10 points.