

Problem 2: Back In My Day...

5 Points

Problem ID: age

Rank: 1

Introduction

Roni's grade school math teacher, Mr. Pepper, likes to assign math homework that's more than just arithmetic. This week's homework, for example, is birthday themed—but Roni's not having it. That's why she's asked you for help! However, you don't want to sit through pages and pages of mindless worksheets, so you've decided to get some help from your trusty computer.

Your task is to create a program that will take in two people's ages and output how long it will be before one is twice as old as the other.

Program Input

The first line of the input from STDIN will contain a positive integer T denoting the number of test cases that follow. Each test case will have the following input:

- A single line in the format: `<NAME1> <AGE1> <NAME2> <AGE2>`
 - `<AGE1>` and `<AGE2>` will be represented as positive integers.

Example Input:

```
3
Amanda 4 Brian 1
Christine 6 Daniel 5
Eric 3 Fregory 21
```

Program Output

For each test case, your program should compute how long it will take for one person to be twice as old as the other. Your output should be created based on the following criteria:

- Your output should be in the following format:

```
In <n> year(s):  
<NAME1> will be <FINAL1> and <NAME2> will be <FINAL2>
```

- If nobody will ever be twice as old as the other, your program should output `Time will end before you are happy`
- Each test case output should be separated by a blank line.

Example Output:

```
In 2 year(s):  
Amanda will be 6 and Brian will be 3
```

```
Time will end before you are happy
```

```
In 15 year(s):  
Eric will be 18 and Fregory will be 36
```

Problem Constraints

$$T \leq 1000$$

$$1 \leq \text{<AGE1>}, \text{<AGE2>} \leq 1.0 \times 10^8$$

Assume nobody is currently twice as old as the other.