Alarm

December 19, 2019

Task

You want to set up the alarm on your phone. At the moment it shows the time of the last alarm. It consists out of a digital clock where you can change both hours and minutes in both directions by clicking on arrows. Depending on the arrow, one push will increment or decrement hour of minute value by one. The value of 00:00 follows after 23:59. The challenge is to write a program which will return the minimal number of pushes you need te change the alarm to a certain time. There are separate arrows for hours and minutes, you don't need to push anything to change from hours to minutes.

Input

The first row contatins the number of test cases n with $1 \leq n \leq 100$. After that follow n test cases. Each case consists out of two rows. The first one contains two integers u and m separated by a space with $0 \leq u \leq 23$, $0 \leq m \leq 59$. These two numbers represent hours and minutes of the time currently displayed by the alarm. Second row of each test case contains the time you wish to change your alarm to in the same format as the first row

Output

Output consists out of n rows, one row per test case. Each row contains the number of the test case (starting with 1) followed by a space and the minimal number of pushed needed to change the time.

Example

Input

```
2
6 30
7 25
23 58
5 30
```

Output

```
1 6
2 34
```