

COCI '10 Contest 4 #3 Astro

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

Ivica and Marica are attending astronomy classes and are observing two unusual stars. They noted the time when each of them flashed. They further noticed that each of the stars flashes periodically, at regular intervals, and now they are wondering: on what day, at what hour will the stars flash at the **same** minute for the **first time**?

For example, if the first star flashed today (Saturday) at 02:20 and the second one at 13:00, with the first star flashing every 05:50 (every 5 hours and 50 minutes) and the second every 01:00 (each hour), then the first one will flash again at 08:10 and 14:00, and the second one at 14:00. Therefore, both stars will have flashed at the same minute today at 14:00.

Note that the time 00:00 (midnight) is the first minute of a day.

Input Specification

Four lines containing four timestamps in $HH:MM$ format (hours:minutes), with $00 \leq HH \leq 23$, $00 \leq MM \leq 59$.

The timestamps are, respectively: the time of the first star's flash, the time of the second star's flash, the time between consecutive flashes of the first star, the time between consecutive flashes of the second star.

The first two timestamps will differ, and both fall on the same day - **Saturday**. Flash intervals will not be 00:00.

Output Specification

If the stars will never flash at the same minute, output `Never` in a single line.

Otherwise, output in the first line the name of the weekday of the first same-minute flash. A reminder on the correct spelling of weekdays: `Sunday`, `Monday`, `Tuesday`, `Wednesday`, `Thursday`, `Friday` and `Saturday` (note the capital letter).

In the second line, output the timestamp of the first same-minute flash, in $HH:MM$ format (with a leading zero if $HH < 10$).

Scoring

In test cases worth 40% of total points, both flash intervals will be hours-only (MM will equal 00), for example 13:00.

Sample Input 1

02:20
13:00
05:50
01:00

Sample Output 1

Saturday
14:00

Sample Input 2

02:20
23:28
00:40
23:50

Sample Output 2

Never

Sample Input 3

23:19
10:19
02:42
09:11

Sample Output 3

Thursday
00:31