2347 - Helping the Watchmaker

Description

Peter is a famous London watchmaker. He made his name in the watch industry by making impossible repairs. But today has fallen ill and cannot work. He has lost his memory and cannot remember which watches were repaired and which were not, so he instructed his nephew John to work out a bit and tell him what watches work and the ones that must be repaired.

In these modern times there are all kinds of clocks showing the time in different ways and in different formats, for example, they can indicate the time in either 12 or 24 hours. So the work of John will be a little harder than we thought. Help John, crazy watchmaker's grandson to determine which clocks show the time correctly.

Input specification

The input consists of a series of hours (two integer numbers with one or two digits, separated by a ':', and optionally followed by one space and one word), each on its own line. Every correct time can be in 12 or 24 hours format. Hours can contain one or two digits, the minutes are always written with two digits. For times in 12 hours format, they can end up in am or pm. The times in 24 hours format may optionally contain hrs at the end. Before am, pm and hrs is always one space and these letters can be written in any combination of uppercase and lowercase letters.

You should read until you reach the End of File (OEF).

Output specification

For each input case output VALID if the time is valid. Output INVALID if the time is written incorrectly.

Sample input

```
12:00
13:00
13:00 hrs
1:10
1:10
1:1
1:01
7:00 pm
7:00 am
```

```
25:30
```

Sample output

```
VALID
VALID
VALID
VALID
VALID
INVALID
VALID
VALID
VALID
INVALID
```

Hint(s)

Source	Misael Madrigal
Added by	**ymondelo20**
Addition date	2013-04-09
Time limit (ms)	3000
Test limit (ms)	1000
Memory limit (kb)	256000
Output limit (mb)	64
Size limit (bytes)	30000
Enabled languages	Bash C C# C++ Java Pascal Perl PHP Python Ruby Text