Quick, your lead guitarist for your band has forgotten her scales. Write a program that will either output the NEXT note given a fret and a string, or (if given a Note name) will output all fret+string combination that will produce that note. Luckily for you, your punk band's setlist for your next gig only uses the E and A strings.

Input

You will receive either a fret number and a string name (separated by a space) or you will receive a Note name. If you receive a fret and a string, output the NEXT note in the scale (working from fret zero (open) towards fret 12; if the next fret would go past 12, return to the "open string" /zero fret).

If you receive a Note name, output the fret and string (on both strings, list the E string first) the note can be played.
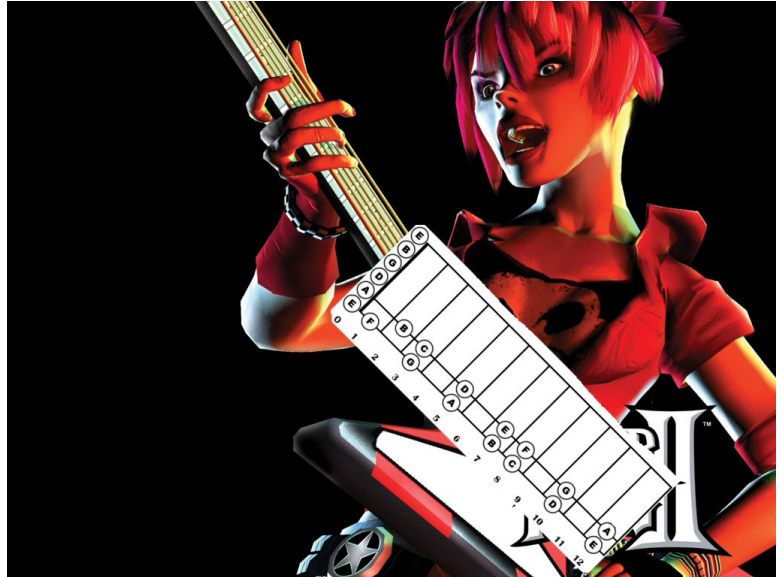
Notes:

- 0 is used to represent the "open string", e.g. the top of the fret board.
- For those of you with musical backgrounds, we're ignoring the sharps and flats, skip over them like they aren't there.
- If the "next" note called for is past fret 12, you will need to "return" to the zero/"Open" fret, but the note will stay the same. E.G. A on fret twelve will also be A on fret zero.

The notes on the guitar

Example

```
0 E
2 A
8 E
12 A
D
C
```

Output

```
F
C
D
A
10 E 5 A
8 E 3 A
```