Alien Username

In a galaxy far, far away, on a planet different from ours, each computer username uses the following format:

1. It *must* begin with either an underscore, `_` (ASCII value 95), or a period, `.` (ASCII value 46).
2. The first character *must* be immediately followed by *one or more* digits in the range 0 through 9.
3. After some number of digits, there *must* be 0 or more English letters (uppercase and/or lowercase).
4. It *may* be terminated with an optional `_` (ASCII value 95). Note that if it's not terminated with an underscore, then there should be no characters after the sequence of 0 or more English letters.

Given n strings, determine which ones are valid alien usernames. If a string is a valid alien username, print `VALID` on a new line; otherwise, print `INVALID`.

Input Format

The first line contains a single integer, n, denoting the number of usernames.
Each line i of the n subsequent lines contains a string denoting an alien username to validate.

Constraints

- $1 \leq n \leq 100$

Output Format

Iterate through each of the n strings in order and determine whether or not each string is a valid alien username. If a username is a valid alien username, print `VALID` on a new line; otherwise, print `INVALID`.

Sample Input

```
3
_0898989811abced_
_abce
_09090909abcD0
```

Sample Output

```
VALID
INVALID
INVALID
```

Explanation

We validate the following three usernames:

1. `_0898989811abced_` is valid as it satisfies the requirements specified above. Thus, we print *VALID*.
2. `_abce` is invalid as the beginning `_` is not followed by one or more digits. Thus, we print *INVALID*.
3. `_09090909abcD0` is invalid as the sequence of English alphabetic letters is immediately followed by a number. Thus, we print *INVALID*.