

Valid Username Regular Expression

A username is considered valid if all the following constraints are satisfied:

- The username consists of **8** to **30** characters inclusive, i.e., if the username consists of less than **8** or greater than **30** characters, then it is invalid username.
- The username must contain alphanumeric characters, and underscores (`_`) only. Alphanumeric characters describe the character set consisting of *lowercase* characters `[a – z]`, *uppercase* characters `[A – Z]`, and digits `[0 – 9]`.
- The *first* character of the username must be an *alphabetic* character, i.e., either *lowercase* character `[a – z]` or *uppercase* character `[A – Z]`.

For example:

- **Julia** is invalid user name because it contains less than **8** characters.
- **Samantha** is valid as it satisfies all the three constraints for a valid username.
- **Samantha_21** is valid as it satisfies all the three constraints for a valid username.
- **1Samantha** is invalid as the first character must be *alphabetic*.
- **Samantha?10_2A** is invalid as it contains the **?** which does not belong to any of the allowed characters set.

Update the value of `regularExpression` field in the `UsernameValidator` class so that the regular expression only matches with valid usernames.

Input Format

The first line of input contains an integer n , describing the total number of usernames. Each of the next n lines contains a string describing the username. The locked stub code reads the inputs and validates the username.

Constraints

- $1 \leq n \leq 100$
- The username consists of any printable characters.

Output Format

For each of the usernames, the locked stub code prints **Valid** if the username is valid; otherwise **Invalid** each on a new line.

Sample Input 0

```
8
Julia
Samantha
Samantha_21
1Samantha
Samantha?10_2A
JuliaZ007
Julia@007
_Julia007
```

Sample Output 0

Invalid
Valid
Valid
Invalid
Invalid
Valid
Invalid
Invalid

Explanation 0

- **Julia** is invalid user name because it contains less than 8 characters.
- **Samantha** is valid as it satisfies all the three constraints for a valid username.
- **Samantha_21** is valid as it satisfies all the three constraints for a valid username.
- **1Samantha** is invalid as the first character must be *alphabetic*.
- **Samantha?10_2A** is invalid as it contains the **?** which does not belong to any of the allowed characters set.
- **JuliaZ007** is a valid username as it satisfies all the constraints.
- **Julia@007** is an invalid username as it contains the invalid character, **@**.
- **_Julia007** is an invalid username as the first character is **_** which is not an *alphabetic* character.