

Utopian Identification Number

A new identification number is given for every Citizen of the Country Utopia and it has the following format.

- The string must begin with between 0-3 (inclusive) lowercase letters.
- Immediately following the letters, there must be a sequence of digits (0-9). The length of this segment must be between 2 and 8, both inclusive.
- Immediately following the numbers, there must be atleast 3 uppercase letters.

Your task is to find out if a given identification number is valid or not.

Input Format

The first line contains N, N lines follow each line containing an identification number.

Constraints

1 <= N <= 100

Output Format

For every identification number, please print

VALID

if the identification number is valid and print

INVALID

otherwise.

Sample Input

2
abc012333ABCDEEEE
0123AB

Sample Output

VALID
INVALID

Explanation

The first testcase is valid as it starts with 3 letters, followed by 6 integers (max of 8 and min of 2) and ends with more than 3 uppercase letters.

The second testcase is invalid as it satisfies the first (at least 0 lowercase letters) and the second condition

(atleast 2 integers) but fails on the third condition.

Viewing Submissions

You can view others' submissions if you solve this challenge. [Navigate to the challenge leaderboard.](#)